990

MANUAL OF CLASSIFICATION

BASIC MANUAL
DECEMBER 1990

Including changes resulting from
all Classification Orders through

December 31, 1990

U. S. DEPARTMENT OF COMMERCE
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V-1 - V-9		Dec. 90	----
Plants	1	Dec. 90	1963
2	1-3	Dec. 90	1923
3		No Class	
4	1-4	Dec. 90	1923
5	1-4	Dec. 90	1922
6		No Class	
7	1	Dec. 90	1899
8	1-5	Dec. 90	1938
9		No Class	
10	1, 2	Dec. 90	1901
11		No Class	
12	1-3	Dec. 90	1901
13		No Class	
14	1	Dec. 90	1907
15	1-6	Dec. 90	1921
16	1-4	Dec. 90	----
17		No Class	
18		No Class	
19	1, 2	Dec. 90	1922
20		No Class	
21		No Class	
22		No Class	
23	1	Dec. 90	1924
24	1-10	Dec. 90	1904
25		No Class	
26	1	Dec. 90	1924
27	1	Dec. 90	1919
28	1, 2	Dec. 90	1922
29	1-9	Dec. 90	----
30	1-5	Dec. 90	1937
31		No Class	
32		No Class	
33	1-7	Dec. 90	1913
34	1-3	Dec. 90	1941
35		No Class	
36	1, 2	Dec. 90	1900
37	1, 2	Dec. 90	1922
38	1, 2	Dec. 90	1936
39		No Class	
40	1-4	Dec. 90	1901
41		No Class	
42	1	Dec. 90	1902
43	1, 2	Dec. 90	1920
44	1-5	Dec. 90	1920
45		No Class	
46		No Class	
47	1	Dec. 90	1923
48	1, 2	Dec. 90	1903
49	1-5	Dec. 90	1966
50		No Class	
51	1-5	Dec. 90	1920
52	1-9	Dec. 90	----
53	1-5	Dec. 90	1951
54	1	Dec. 90	1901
55	1-6	Dec. 90	1962
56	1-5	Dec. 90	1919
57	1-3	Dec. 90	----
58		No Class	
59	1	Dec. 90	1907
60	1-9	Dec. 90	----
61		No Class	
62	1-6	Dec. 90	1958
63	1	Dec. 90	1908
64		No Class	
65	1-5	Dec. 90	----
66	1, 2	Dec. 90	1926
67		No Class	
68	1-3	Dec. 90	1937
69	1	Dec. 90	1900
70	1-5	Dec. 90	1936
71	1, 2	Dec. 90	----
72	1-6	Dec. 90	1965
73	1-9	Dec. 90	1944
74	1-6	Dec. 90	1934
75	1-8	Dec. 90	1936
76	1	Dec. 90	1904
77		No Class	
78		No Class	
79	1	Dec. 90	1904
80		No Class	
81	1-5	Dec. 90	1901

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82	1, 2	Dec. 90	1900
83	1-10	Dec. 90	1959
84	1-5	Dec. 90	1920
85		No Class	
86	1	Dec. 90	1901
87	1	Dec. 90	1942
88		No Class	
89	1-3	Dec. 90	1901
90		No Class	
91	1-6	Dec. 90	1963
92	1-4	Dec. 90	1963
93		No Class	
94		No Class	
95		No Class	
96		No Class	
97		No Class	
98	1, 2	Dec. 90	1926
99	1-4	Dec. 90	1935
100	1-3	Dec. 90	1952
101	1-5	Dec. 90	1916
102	1-3	Dec. 90	1902
103		No Class	
104	1-3	Dec. 90	1918
105	1-4	Dec. 90	1918
106	1-8	Dec. 90	——
107		No Class	
108	1, 2	Dec. 90	1963
109	1	Dec. 90	1938
110	1, 2	Dec. 90	1906
111	1, 2	Dec. 90	1917
112	1-4	Dec. 90	1919
113		No Class	
114	1-3	Dec. 90	1905
115		No Class	
116	1-3	Dec. 90	1919
117		No Class	
118	1-4	Dec. 90	1952
119	1, 2	Dec. 90	1910
120		No Class	
121		No Class	
122	1-5	Dec. 90	1911
123	1-10	Dec. 90	1905
124	1	Dec. 90	1937
125	1	Dec. 90	1918
126	1-4	Dec. 90	1907
127	1	Dec. 90	1923
128	1-7	Dec. 90	1919
129		No Class	
130		No Class	
131	1-3	Dec. 90	1939
132	1, 2	Dec. 90	1920
133		No Class	1902
134	1-3	Dec. 90	1943
135	1	Dec. 90	1901
136	1	Dec. 90	1925
137	1-9	Dec. 90	1952
138	1	Dec. 90	1935
139	1-4	Dec. 90	1923
140	1, 2	Dec. 90	1910
141	1-4	Dec. 90	1956
142	1	Dec. 90	1899
143		No Class	
144	1-4	Dec. 90	1900
145		No Class	
146		No Class	
147	1	Dec. 90	1899
148	1-4	Dec. 90	1918
149	1, 2	Dec. 90	1961
150	1	Dec. 90	1906
151		No Class	
152	1-4	Dec. 90	1939
153		No Class	
154		No Class	
155		No Class	
156	1-10	Dec. 90	1961
157	1	Dec. 90	1899
158		No Class	
159	1	Dec. 90	1923
160	1-4	Dec. 90	1942
161		No Class	
162	1-4	Dec. 90	1959
163	1	Dec. 90	1902
164	1-5	Dec. 90	1967
165	1-3	Dec. 90	1962
166	1-4	Dec. 90	1954
167		No Class	

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169	1	Dec. 90	1919	212	1, 2	Dec. 90	1912
170		No Class		213	1, 2	Dec. 90	1922
171	1, 2	Dec. 90	1957	214		No Class	
172	1-8	Dec. 90	1958	215	1-3	Dec. 90	1920
173	1-3	Dec. 90	1963	216		No Class	
174	1-4	Dec. 90	1938	217	1	Dec. 90	1901
175	1-4	Dec. 90	1960	218		No Class	
176		No Class		219	1-6	Dec. 90	1904
177	1-3	Dec. 90	1961	220	1-6	Dec. 90	1919
178	1, 2	Dec. 90	1913	221	1-3	Dec. 90	1954
179		No Class	1905	222	1-7	Dec. 90	1944
180	1-6	Dec. 90	1917	223	1	Dec. 90	1935
181	1, 2	Dec. 90	1900	224	1-3	Dec. 90	1902
182	1, 2	Dec. 90	1959	225	1, 2	Dec. 90	1959
183		No Class		226	1, 2	Dec. 90	1960
184	1, 2	Dec. 90	1907	227	1, 2	Dec. 90	1965
185	1	Dec. 90	1911	228	1-3	Dec. 90	1965
186	1	Dec. 90	1909	229	1-4	Dec. 90	1899
187	1, 2	Dec. 90	1910	230		No Class	
188	1-4	Dec. 90	1920	231	1	Dec. 90	1901
189		No Class		232	1	Dec. 90	1902
190	1	Dec. 90	1902	233		No Class	
191	1	Dec. 90	1912	234	1, 2	Dec. 90	1960
192	1-4	Dec. 90	1920	235	1-4	Dec. 90	1901
193	1	Dec. 90	1922	236	1, 2	Dec. 90	1919
194	1, 2	Dec. 90	1900	237	1	Dec. 90	1914
195		No Class		238	1-3	Dec. 90	1919
196	1	Dec. 90	1924	239	1-8	Dec. 90	1959
197		No Class		240		No Class	
198	1-8	Dec. 90	1976	241	1-5	Dec. 90	1944
199	1	Dec. 90	1916	242	1-5	Dec. 90	1910
200	1-6	Dec. 90	1919	243		No Class	
201	1	Dec. 90	1965	244	1-3	Dec. 90	1936
202	1, 2	Dec. 90	1928	245	1	Dec. 90	1910
203	1, 2	Dec. 90	1965	246	1-4	Dec. 90	1918
204	1-5	Dec. 90	1940	247		No Class	
205		No Class		248	1-6	Dec. 90	1935
206	1-6	Dec. 90	1906	249	1-3	Dec. 90	1965
207		No Class		250	1-4	Dec. 90	1912
208	1-4	Dec. 90	1958	251	1-4	Dec. 90	1954
209	1-7	Dec. 90	1925	252	1-7	Dec. 90	1940
210	1-7	Dec. 90	1957	253		No Class	

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255		No Class	
256	1	Dec. 90	1913
257		No Class	
258	1	Dec. 90	1913
259		No Class	
260	1, 2	Dec. 90	1938
261	1-3	Dec. 90	1916
262		No Class	
263		No Class	
264	1-8	Dec. 90	1963
265		No Class	
266	1-3	Dec. 90	1915
267	1-3	Dec. 90	1919
268		No Class	
269	1-3	Dec. 90	1961
270	1	Dec. 90	1916
271	1-3	Dec. 90	1916
272	1, 2	Dec. 90	1924
273	1-6	Dec. 90	1924
274		No Class	
275		No Class	
276	1	Dec. 90	1916
277	1-3	Dec. 90	1962
278	1	Dec. 90	1920
279	1	Dec. 90	1918
280	1-7	Dec. 90	1919
281	1	Dec. 90	1918
282	1	Dec. 90	1918
283	1	Dec. 90	1918
284		No Class	
285	1-4	Dec. 90	1956
286		No Class	
287		No Class	
288		No Class	
289	1	Dec. 90	1918
290	1	Dec. 90	1918
291	1	Dec. 90	1918
292	1-4	Dec. 90	1919
293	1	Dec. 90	1918
294	1-3	Dec. 90	1919
295	1	Dec. 90	1918
296	1-3	Dec. 90	1919
297	1-5	Dec. 90	1961
298	1	Dec. 90	1919
299	1	Dec. 90	1964
300	1	Dec. 90	1921
301	1, 2	Dec. 90	1920
302		No Class	
303	1, 2	Dec. 90	1920
304		No Class	
305	1	Dec. 90	1959
306		No Class	
307	1-5	Dec. 90	1952
308		No Class	
309		No Class	
310	1-3	Dec. 90	1952
311		No Class	
312	1-3	Dec. 90	1927
313	1-5	Dec. 90	1950
314	1, 2	Dec. 90	1941
315	1-5	Dec. 90	1943
316		No Class	1943
317		No Class	
318	1-7	Dec. 90	1947
319		No Class	
320	1	Dec. 90	1943
321		No Class	
322	1	Dec. 90	1947
323	1, 2	Dec. 90	1947
324	1-6	Dec. 90	1953
325		No Class	
326		No Class	
327		No Class	
328	1-3	Dec. 90	1960
329	1	Dec. 90	1960
330	1-3	Dec. 90	1959
331	1, 2	Dec. 90	1959
332	1	Dec. 90	1948
333	1, 2	Dec. 90	1953
334	1	Dec. 90	1961
335	1-4	Dec. 90	1966
336	1, 2	Dec. 90	1952
337	1-5	Dec. 90	1968
338	1-3	Dec. 90	1959
339		No Class	1953

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341 1,2	Dec. 90		384 1-5	Dec. 90	1982
342 1-3	Dec. 90	1986	385-387	No Classes	
343 1-2	Dec. 90	1947	388 1, 2	Dec. 90	1989
344	No Class		389-391	No Classes	
345	No Class		392 1,2	Dec.90	1990
346 1, 2	Dec. 90	1947	393-399	No Classes	
347	No Class		400 1-13	Dec. 90	1978
348	No Class		401 1-3	Dec. 90	1967
349	No Class		402 1	Dec. 90	1969
350 1-5	Dec. 90	1966	403 1-4	Dec. 90	1973
351 1, 2	Dec. 90	1964	404 1, 2	Dec. 90	1972
352 1, 2	Dec. 90	1964	405 1-3	Dec. 90	1978
353 1	Dec. 90	1968	406 1, 2	Dec. 90	1979
354 1-4	Dec. 90	1973	407 1, 2	Dec. 90	1977
355 1, 2	Dec. 90	1968	408 1-3	Dec. 90	1971
356 1-3	Dec. 90	1968	409 1-4	Dec. 90	1979
357 1	Dec. 90	1974	410 1, 2	Dec. 90	1979
358 1-4	Dec. 90	1974	411 1-8	Dec. 90	1981
359	No Class		412 1	Dec. 90	1982
360 1, 2	Dec. 90	1973	413 1	Dec. 90	1982
361 1-4	Dec. 90	1977	414 1-12	Dec. 90	1979
362 1-4	Dec. 90	1977	415 1-4	Dec. 90	1969
363 1, 2	Dec. 90	1977	416 1-3	Dec. 90	1969
364 1-14	Dec. 90	1977	417 1-7	Dec. 90	1970
365 1, 2	Dec. 90	1978	418 1-3	Dec. 90	1970
366 1-3	Dec. 90	1977	419 1	Dec. 90	1982
367 1, 2	Dec. 90	1979	420 1-3	Dec. 90	1982
368 1-3	Dec. 90	1980	421	No Class	
369 1-4	Dec. 90	1981	422 1-5	Dec. 90	1978
370 1, 2	Dec. 90	1980	423 1-7	Dec. 90	1972
371 1	Dec. 90	1980	424 1-4	Dec. 90	1968
372 1	Dec. 90	1982	425 1-8	Dec. 90	1971
373 1, 2	Dec. 90	1982	426 1-6	Dec. 90	1973
374 1, 2	Dec. 90	1982	427 1-5	Dec. 90	1975
375 1	Dec. 90	1980	428 1-9	Dec. 90	1975
376 1-4	Dec. 90	1981	429 1-3	Dec. 90	1976
377 1, 2	Dec. 90	1983	430 1-8	Dec. 90	1979
378 1, 2	Dec. 90	1982	431 1-5	Dec. 90	1968
379 1-5	Dec. 90	1986	432 1-4	Dec. 90	1972
380 1	Dec. 90		433 1-3	Dec. 90	1979
381 1, 2	Dec. 90	1983	434 1-5	Dec. 90	1980
382 1	Dec. 90	1983	435 1-7	Dec. 90	1979

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437 1-4	Dec. 90	1987
438	No Class	
439 1-12	Dec. 90	1987
440 1	Dec. 90	1980
441 1	Dec. 90	1982
442-444	No Classes	
445 1	Dec. 90	1983
446 1-5	Dec. 90	1984
447-448	No Classes	
449 1	Dec. 90	1988
450 1, 2	Dec. 90	1987
451	No Class	
452 1,2	Dec. 90	1990
453 1	Dec. 90	1987
454	No Class	
455 1-4	Dec. 90	1980
456-459	No Classes	
460 1, 2	Dec. 90	1989
461-463	No Classes	
464 1-3	Dec. 90	1982
465-473	No Classes	
474 1-4	Dec. 90	1980
475 1-4	Dec. 90	1990
476-492	No Classes	
493 1-5	Dec. 90	1980
494 1, 2	Dec. 90	1982
495-500	No Classes	
501 1, 2	Dec. 90	1981
502 1-5	Dec. 90	1983
503 1	Dec. 90	1987
504	No Classes	
505 1, 2	Dec. 90	1988
506-511	No Classes	
512 1	Dec. 90	1987
513	No Class	
514 1-13	Dec. 90	1985
515-517	No Classes	
518 1	Dec. 90	1981
519	No Class	
520 1	Dec. 90	1982
521 1-4	Dec. 90	1978
522 1-4	Dec. 90	1986
523 1-5	Dec. 90	1982
524 1-13	Dec. 90	1982
525 1-17	Dec. 90	1979
526 1-7	Dec. 90	1976
527 1	Dec. 90	1982
528 1-9	Dec. 90	1976
529	No Class	
530 1-3	Dec. 90	1984
531	No Class	
532 1	Dec. 90	1984
533	No Class	
534 1-7	Dec. 90	1984
535	No Class	
536 1, 2	Dec. 90	1976
537-539	No Classes	
540 1-9	Dec. 90	1986
541-543	No Class	
544 1-7	Dec. 90	1977
545	No Class	
546 1-7	Dec. 90	1978
547	No Class	
548 1-11	Dec. 90	1977
549 1-9	Dec. 90	1979
550-551	No Classes	
552 1-6	Dec. 90	1989
553-555	No Classes	
556 1-5	Dec. 90	1980
557	No Class	
558 1-10	Dec. 90	1986
559	No Class	
560 1-4	Dec. 90	1977
561	No Class	
562 1-7	Dec. 90	1978
563	No Class	
564 1-9	Dec. 90	1980
565-567	No Classes	
568 1-8	Dec. 90	1978
569	No Class	
570 1, 2	Dec. 90	1980
571-584	No Classes	
585 1-5	Dec. 90	1979
586-599	No Classes	

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604 1-7	Dec. 90	1982
605	No Class	
606 1-3	Dec. 90	1989
607-622	No Classes	
623 1	Dec. 90	1985
624-799	No Classes	
800 1	Dec. 90	1986
801-900	No Classes	
901 1	Dec. 90	1984
902 1	Dec. 90	1988
903-929	No Classes	
930 1-5	Dec. 90	1990
931-934	No Classes	
935 1	Dec. 90	1984
D1 1	Dec. 90	1967
D2 1-5	Dec. 90	1967
D3 1, 2	Dec. 90	----
D4 1	Dec. 90	1967
D5 1, 2	Dec. 90	1986
D6 1-5	Dec. 90	1972
D7 1-6	Dec. 90	1973
D8 1-4	Dec. 90	1969
D9 1-3	Dec. 90	1967
D10 1, 2	Dec. 90	1973
D11 1-3	Dec. 90	1976
D12 1-3	Dec. 90	1973
D13 1,2	Dec. 90	1976
D14 1-3	Dec. 90	1976
D15 1	Dec. 90	1976
D16 1, 2	Dec. 90	1976
D17 1	Dec. 90	1979
D18 1	Dec. 90	1979
D19 1, 2	Dec. 90	1974
D20 1	Dec. 90	1979
D21 1-4	Dec. 90	1979
D22 1	Dec. 90	1967
D23 1-3	Dec. 90	1967
D24 1	Dec. 90	1976
D25 1, 2	Dec. 90	1976
D26 1-3	Dec. 90	1980
D27 1, 2	Dec. 90	1975
D28 1	Dec. 90	1976
D29 1	Dec. 90	1976
D30 1	Dec. 90	1967
D31	No Class	
D32 1	Dec. 90	1981
D33	No Class	
D34 1	Dec. 90	1981
D35-D46	No Classes	
D47	No Class	
D48-D58	No Classes	
D59	No Class	
D60-D63	No Classes	
D64	No Class	
D65-D91	No Classes	
D92	No Class	
D93-D98	No Classes	
D99 1	Dec. 90	1967

PLAN AND USE OF THE MANUAL OF CLASSIFICATION

Locating patents in a field of technology or science embraced by the U. S. Patent Classification System requires a good measure of judgement applied to the continuous and coordinated use of three tools:

1. The Index to Classification
2. The Manual of Classification
3. The Class and Subclass Definitions

The Index is an alphabetical list of subject headings referring, by indicia numbers, to specific pertinent classes and subclasses for the classification system. The Index is particularly useful as an initial means of entry into the system for those either lacking experience in the use of the classification or unfamiliar with the particular technology under study.

The Manual of Classification lists the numbers and descriptive titles of all the classes and subclasses. Titles – more than 100,000 – are necessarily brief and thus indicative and not definitive. Hence, searches will be expedited by using the Manual as a key to the Definitions from the outset.

The Definitions comprise statements of the scope embraced by each of the official classes and subclasses (exclusive of the Plant Class and Designs), together with search notes directing the searcher to related subject matter in other classes and subclasses.

The Index and Manual may be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Copies of Definitions – class by class – may be purchased from the Patent and Trademark Office, Information Resources Branch, Washington, D. C. 20231.

This Manual contains:

		Start on page
1.	A list of the contents of the Manual showing the current page date for each class and the year in which the class was originally classified.	CP-1
2.	A list showing an organization of science and technology into three main groups.	I-5
3.	A hierarachical arrangement of class titles in each main group by related subject matter.	I-6
4.	A list, in numerical order, of each examining group and art unit indicating examining group personnel, their location, and phone numbers	II-1
5.	A list in numerical order by art unit indicating the classification assigned each.	III-1
6.	A list of classifications, in numerical order by class number, giving the class title, the art unit to which it is assigned, and the examiner search room in which it can be found.	IV-1
7.	A list of classes in alphabetical order by class title giving the class number indicating where its schedule can be found in this Manual.	V-1
8.	The class schedules for PLANTS (page P-1).	PLT-1

9. Class schedules (i.e., listing of the subclasss titles and numbers arranged in organized order for each class) arranged in the numerical sequence by class number. 2-1

10. The Design classes (at the end of the Manual). D-1

UNOFFICIAL SUBCLASSES AND DIGESTS

Over a span of years Patent Examiners have created "unofficial" subclasses and digests to facilitate searches within the arts under their jurisdiction. An inventory of these patents in the Examiner search file has enabled listing unofficial subclasses and digests in the Manual of Classification.

In order to distinguish between an unofficial subclass and digest, the following definitions should be considered:

> Unofficial Subclass: A grouping of patents selected out from an official subclass by Examiner and then made an indented subclass under the official subclass with an alpha designation following the official numeric designation. Insofar as the original subclass then does not have all the patents officially classified therein, it is given the alpha designation "R" (indicating Residual). It may be noted that the numeric subclass equates to the residual subclass plus the unofficial subclasses indented thereunder, e.g., in Class 24, BUCKLES, BUTTONS, CLASPS, ETC., official subclass 129, One-piece, is shown as follows:
>
> 129R . One-piece
> 129B . . . Sheet material
> 129A . . . Slack adjuster
> 129D . . . Rubber
> 129C . . . Wire
> 129W . . . Swagged, deformable
>
> Note: The Public Search Room file comprises only those patents listed according to the official (numeric) classification.
>
> Digest: A collection of copies of patents based on a concept which relates to a class but not to any particular subclass of that class. It should be noted that the "original" classification of a patent cannot comprise a digest insofar as digests are "outside" of the official classification arrangement. The digests are listed in numeric sequence at the end of each class schedule.

There are no definitions for the unofficial subclasses, nor is it contemplated to define these subclasses beyond the context of the titles and the definitions of the official subclasses from which they were formed (R subs).

The unofficial subclasses have been "double indented" under the subclass from which they were formed as a indicator that rules of hierarchy do not apply to these subclass groupings, nor are any other of the rules of official classification applicable. These art collections are offered only to the extent they may be helpful as a search assist and should not necessarily be considered to be a complete collection of the art represented by the title.

HOW TO READ SUBCLASS TITLES AND DEFINITIONS

The full title of any subclass in a given class schedule includes: (1) the class title; and if applicable, any or all of (2) the title of most adjacent higher subclass in the first vertical column at the extreme left of the particular schedule; (3) the title of most adjacent higher subclass indented thereunder in the second vertical column; (4) the title of the most adjacent higher subclass indented thereunder in the third vertical column; and so on. For example, in Class 2, APPAREL, the full title of subclass 15 should read as:

> "APPAREL, GUARD'S AND PROTECTORS, Eye shields (e.g., hoodwinks or blinds, etc.).

Similarily, the definition of any subclass includes the definition of the class plus that of any subclasses under which it may be indented.

BASIS OF CLASSIFICATION

All patentable subject matter is created for an ulterior utility and this characteristic has been selected as the primary basis for classification. Arts or instruments having like functions, producing like products, or achieving like effects, are brought together, but the functions or effects that are chosen as a basis of classification must be proximate or essential, not remote or accidental.

GENERAL SCOPE OF CLASSES

The statutory categories of invention are product, process, apparatus, composition of matter, and certain varieties of plants. Classes may be made on the basis of any one or more of these.

Product, process, apparatus, and composition of matter may be in the same class (e.g., Class 131, Tobacco).

Process, apparatus, and plant varieties are all in Class 47, Plant Husbandry.

Processes, particularly mechanical, are commonly classified with the instruments specially adapted to aid in practicing them (e.g., Class 65, Glass Manufacturing).

Processes limited to the use of particular ingredients for producing a specified composition are classified with the composition (e.g., Class 23, Chemistry, Physical Processes; Class 106, Compositions, Coating or Plastic).

Products or fabricated shaped articles are sometimes classified in classes by themselves (e.g., Class 411, Expanded, Threaded, Driven, Headed, Tool-Deformed, or Locked-Threaded Fastener; Class 245, Wire Fabrics and Structure), but some are in classes associated with the processes and instruments for making them (e.g., Class 59, Chain, Staple and Horseshoe Making).

Accessories are generally classified with the instrument to which they are peculiar.

ARRANGEMENT OF SUBCLASSES

The subclasses in each class (other than class 130 and some Design classes) are generally arranged in the order of complexity or comprehensiveness of the inventions included therein. The complex wholes such as the "special" work and combined machines (or processes) come first, followed in the order named, by simple whole machines, the major parts, the minor parts, or details and accessories, and the residuum or "miscellaneous". Preceding subclasses are deemed "superior" to succeeding ones. This order of subclasses permits a uniformity in assigning disclosures containing features classifiable in more than one subclass. The basic rule is to assign one patent copy (original) corresponding to a claimed invention to the first appearing of a series of coordinate subclasses that may properly receive it, and place additional (cross-reference) copies where appropriate in the later appearing subclass or subclasses, adapted to receive its parts. In a class having the subclasses arranged according to this rule, no "original" patent copy should be found in any coordinate subclass following the one properly entitled to receive it, although it may be found either in preceding subclasses as a part of some other organization, or in an indented more specific subclass.

A "rule" of superiority and inferiority applies also to patents containing subject matter classifiable in more than one class, the patent being assigned to the class designed to receive the largest claimed combination with a cross-reference, if necessary, for other claimed disclosures to the more elemental classes. Between classes, however, the positional relationship (hierarachy) that exists between subclasses of the same class does not obtain, and "superiority" and "inferiority" is given only by the Definitions.

Illustrated or other disclosed matter not claimed as a part of the invention, if classified, may be placed by cross-reference.

SUGGESTIONS FOR SEARCH

If the use of the Index to the classification fails to reveal a restricted field of search the following is a suggested procedure for delineating a field of search:

(1) Determine what is the essential function or effect of the art or instrument to be sought.

(2) Scan the titles in the major groupings at the front of the Manual or in the numerical or alphabetical list of class titles and note those that appear to include the invention sought.

(3) Note particularly that one which has the most intensive or specific title that includes the invention.

(4) Inspect carefully the class definition and notes thereto.

(5) If the class definition indicates the selected class as the proper one, scan the schedule of subclasses of the selected class, inspecting first the major coordinate subclasses whose titles begin farthest to the left and the initial letters of which are arranged in vertical alignment.

(6) Select the first appearing major subclass title that includes a characteristic of the invention and study the definitions thereof.

(7) If the major subclass definition includes the invention, scan the schedule of minor subclasses indented one place to the right immediately under the selected major subclass, selecting the first appearing title to include an additional characteristic of the invention.

(8) So proceed until the most specific minor subclass is reached whose title and definition indicate the inclusion of the invention in question, and then inspect the art composing it.

(9) If this subclass contains nothing pertinent, search the more generic subclasses under which it is indented, the miscellaneous subclasses, and those above it, the titles of which indicate the possibility that they may include the thing sought.

(10) If the pertinent art is still not found, search the other possible classes noted in step 2 in the same way.

Failure to find any pertinent art usually indicates that the proper place in the classification has not been located. The classifiers engaged in creating new, and maintaining the existing, classifications are always available for consultation in outlining fields of search.

Note: In the Index, the plus sign adjacent a subclass number refers to all the subclasses indented thereunder.

PATENT OFFICE CLASSES

Arranged by Related Subjects

Main Groups

I. CHEMICAL AND RELATED ARTS

II. COMMUNICATIONS, DESIGNS, RADIANT ENERGY, WEAPONS, ELECTRICAL, AND RELATED ARTS

III. BODY TREATMENT AND CARE, HEATING AND COOLING, MATERIAL HANDLING AND TREATMENT, MECHANICAL MANUFACTURING, MECHANICAL POWER, STATIC, AND RELATED ARTS

Note: In the following lists, classes preceded by an asterisk (e.g., *75) appear more than once. Subject titles used at times differ from class titles.

Class	Subject
505	SUPERCONDUCTOR TECHNOLOGY - APARATUS, MATERIAL, PROCESS Subclass 1 involving material superconducting above 30° Kelvin and Subclasses 800–933 for art collections on superconductor technology.
437	SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
156	ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL MANUFACTURE (III, Class 428 for products of this class)
8/94.1-142	BLEACHING AND DYEING: FLUID TREATMENT AND CHEMICAL MODIFICATION OF TEXTILES AND FIBERS
400–696	(III, Class 8, Manipulative fluid treatment; Class 68, Textiles, Fluid Treating Apparatus)
427	COATING PROCESSES (III, Classes 101 and 118 for printing and coating apparatus)
134/1–42	CLEANING AND LIQUID CONTACT WITH SOLIDS (III, Class 134 for apparatus)
419	POWDER METALLURGY - PROCESSES
•75	SPECIALIZED METALLURGICAL PROCESSES, ETC. (II, Class 75 rare refractory or radioactive) (metals, consolidated metal powder compositions)
148	METAL TREATMENT
65	GLASS MANUFACTURING
264	PLASTIC AND NONMETALLIC ARTICLE SHAPING OR TREATING: PROCESSES (II, Class 264 for treating of explosive or radioactive material)
426	FOOD OR EDIBLE MATERIAL: PROCESSES, COMPOSITIONS AND PRODUCTS (III, Class 99 treating apparatus)
162	PAPER MAKING AND FIBER LIBERATION
201	DISTILLATION: PROCESSES, THERMOLYTIC

Class	Subject
202	DISTILLATION: APPARATUS
203	DISTILLATION: PROCESSES, SEPARATORY
48	GAS, HEATING AND ILLUMINATING
430	RADIATION IMAGERY CHEMISTRY - PROCESS, COMPOSITION OR PRODUCT
512	PERFUME COMPOSITIONS
252	COMPOSITIONS (Miscellaneous) (In some instances compositions specialized to a particular art are classified with that art, e.g. Class 51, etc.) (II, Class 52, Radioactive material)
502	CATALYST, SOLID SORBENT, OR SUPPORT THEREFOR, PRODUCT OR PROCESS OF MAKING
424 and 514	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS (II, Class 424, for radioactive medicine)
71	CHEMISTRY, FERTILIZERS
44	FUEL AND RELATED COMPOSITIONS
•210/ 500.1+	LIQUID PURIFICATION OR SEPARATION (Filter Material)
•51/293+	ABRADING (Material) (III, Class 51 for abrading machines and processes)
520 - 528	CHEMISTRY, SYNTHETIC RESINS OR NATURAL RUBBERS (see the 520 Series of classes)
106	COMPOSITIONS, COATING OR PLASTIC
420	ALLOYS OR METALLIC COMPOSITIONS (II, Class 420 radioactive)
501	COMPOSITIONS: CERAMIC
436	CHEMISTRY: ANALYTICAL AND IMMUNOLOGICAL TESTING
23	CHEMISTRY, PHYSICAL PROCESSES
435	CHEMISTRY, MOLECULAR BIOLOGY AND MICROBIOLOGY
429	CHEMISTRY, ELECTRICAL CURRENT PRODUCING APPARATUS, PRODUCT AND PROCESS

Class	Subject
136	BATTERIES, THERMOELECTRIC AND PHOTOELECTRIC
204	CHEMISTRY, ELECTRICAL AND WAVE ENERGY (II, Class 204 for actinide series elements)
423	CHEMISTRY, INORGANIC (II, Class 423 for actinide series compounds)
518	CHEMISTRY, FISCHER-TROPSCH PROCESSES: OR PURIFICATION OR RECOVERY OF PRODUCTS THEREOF
*260 and 530-585	CHEMISTRY, CARBON COMPOUNDS (II, Class 260 for radioactive metal, rare earth metal or nitro containing compounds (see also Classes 530-585)
208	MINERAL OILS: PROCESSES AND PRODUCTS
196	MINERAL OILS: APPARATUS
127	SUGAR, STARCH, AND CARBOHYDRATES (See notes to the definitions of Class 422 for distribution of this art).
422	PROCESS DISINFECTING, DEODORIZING, PRESERVING OR STERILIZING, AND CHEMICAL APPARATUS
62/4, 8, 44, 532-545	REFRIGERATION (III, Class 62, Refrigeration, generally)
55	GAS SEPARATION
261	GAS AND LIQUID CONTACT APPARATUS
159	CONCENTRATING EVAPORATORS
210	LIQUID PURIFICATION OR SEPARATION
503	RECORD RECEIVER HAVING PLURAL LEAVES OR A COLORLESS COLOR FORMER, METHOD OF USE OR DEVELOPER THEREFOR
428	STOCK MATERIAL OR MISCELLANEOUS ARTICLES

Class	Subject
935	GENETIC ENGINEERING: RECOMBINANT DNA TECHNOLOGY, HYBRID OR FUSED CELL TECHNOLOGY AND RELATED MANIPULATIONS OF NUCLEIC ACIDS (Cross-Reference Art Collection)

Class	Subject
505	SUPERCONDUCTOR TECHNOLOGY - APPARATUS, MATERIAL, PROCESS subclass 1 involving material superconducting above 30° Kelvin and Subclasses 800-933 for art collections on superconductor technology.
	RADIOACTIVE AND ACTINIDE
376	INDUCED NUCLEAR REACTIONS, SYSTEMS AND ELEMENTS
423/2-20, 249-261	CHEMISTRY, INORGANIC (actinide series compound) (I, Class 423, Chemistry, Inorganic)
•75/84	METALLURGY (rare or radioactive articles; powder metallurgy) (I, Class 75, Metallurgy alloys and refining)
419	Powder Metallurgy - Processes
75	Rare, refractory or radioactive metals, consolidated metal powder compositions (I, Class 75 Specialized metallurgical processes, etc., remainder)
420	ALLOYS OR METALLIC COMPOSITIONS (Radioactive) (I, 420, Alloys or Metallic Compositions, remainder)
424/1.1, 1.5	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS (radioactive) (I, Class 424, Drug, Bio-Affecting and Boby Treating Compositions, generally)
204/1.5	CHEMISTRY, ELECTRICAL AND WAVE ENERGY (actinide series element) (I, Class 204, Chemistry, Electrical and Wave Energy, generally)
252/ 478, 517	COMPOSITIONS (radioactive) [I, Class 252, Compositions (Miscellaneous)]
	ORGANIC COMPOUNDS
534/10 +	Radioactive Metal Containing
14 +	Rare Earth Metal Containing
568/924 +	NITRO CONTAINING (I, Class 260 and 530- 585, Chemistry, Organic Compounds generally)
264/0.5, 3.1 +	PLASTIC SHAPING (radioactive or explosive material) (I, Class 264, Plastic and Nonmetallic Article Shaping or Treating: Processes)
930	PEPTIDE OR PROTEIN SEQUENCE

Class	Subject
380	CRYPTOGRAPHY
340	COMMUNICATIONS, ELECTRICAL
358	PICTORIAL COMMUNICATION; TELEVISION
382	IMAGE ANALYSIS
342	COMMUNICATIONS, DIRECTIVE RADIO WAVE SYSTEMS AND DEVICES (E.G., RADAR, RADIO NAVIGATION)
343	COMMUNICATIONS, RADIO WAVE ANTENNAS
370	MULTIPLEX COMMUNICATIONS
381	ELECTRICAL AUDIO SIGNAL PROCESSING SYSTEMS, AND DEVICES
379	TELEPHONIC COMMUNICATIONS
178	TELEGRAPHY
375	PULSE OR DIGITAL COMMUNICATIONS
455	TELECOMMUNICATIONS
341	CODED DATA GENERATION OR CONVERSION
367	COMMUNICATIONS, ELECTRICAL: ACOUSTIC WAVE SYSTEM AND DEVICES
334	TUNERS
332	MODULATORS
329	DEMODULATORS
116	SIGNALS AND INDICATORS
	CALCULATORS, COMPUTERS OR DATA PROCESSING SYSTEMS
371	ERROR DETECTION/CORRECTION AND FAULT DETECTION/RECOVERY
•364/737	ARITHMETICAL ERRORS
•235/375	REGISTERS (Systems Controlled by Data Bearing Records
400	(Ordnance or Weapon System Computers) (Record Controlled Calculators)
364	ELECTRICAL COMPUTERS AND DATA PROCESSING SYSTEMS

Class	Subject
	CALCULATORS, COMPUTERS OR DATA PROCESSING SYSTEMS - (cont)
377	ELECTRICAL PULSE COUNTERS, PULSE DIVIDERS OR SHIFT REGISTERS: CIRCUITS AND SYSTEMS
902	ELECTRONIC FUNDS TRANSFER
*235/61	REGISTERS (Mechanical Calculators)
	INFORMATION STORAGE
369	DYNAMIC INFORMATION STORAGE OR RETRIEVAL
360	DYNAMIC MAGNETIC INFORMATION STORAGE OR RETRIEVAL
365	STATIC INFORMATION STORAGE AND RETRIEVAL
*235/435	REGISTERS (Coded Sensors)
346	RECORDERS
	MEASURING, TESTING, PRECISION INSTRUMENTS (I, Class 23, Chemical Testing)
73	MEASURING AND TESTING
324	ELECTRICITY, MEASURING AND TESTING
*250/250	WAVEMETERS
356	OPTICS, MEASURING AND TESTING
368	HOROLOGY, TIME MEASURING SYSTEMS OR DEVICES
374	THERMAL MEASURING AND TESTING
177	WEIGHING SCALES
33	GEOMETRICAL INSTRUMENTS
*250	RADIANT ENERGY (I, Class 204, Chemistry, Electrical and Wave Energy)
378	X-RAY OR GAMMA RAY SYSTEMS OR DEVICES

Class	Subject
	RADIANT ENERGY - (cont)
*250/ 316.1-319, 330-334 338-353	INFRARED RAY
372	COHERENT LIGHT GENERATORS
350	OPTICS, SYSTEMS AND ELEMENTS
351	OPTICS, EYE EXAMINING, VISION TESTING AND CORRECTING
352	OPTICS, MOTION PICTURES
354	PHOTOGRAPHY (Note: Class 430, Photographic Chemistry, Processes and Material, I)
355	PHOTOCOPYING
353	OPTICS, IMAGE PROJECTORS
362	ILLUMINATION
84	MUSIC (Horns, Whistles, Sirens, Bells, Compressional Wave Generators, Class 116, Signals and Indicators, subs. 137 to 172; Class 340, Communications, Electrical, subs. 384 +)
181	ACOUSTICS
361	ELECTRICITY, ELECTRICAL SYSTEMS AND DEVICES (Nonelectrical device with electrical operation or control is classified with nonelectrical device)
219	ELECTRIC HEATING (Nonelectric Heating, III)
392	ELECTRIC RESISTANCE HEATING DEVICES
373	INDUSTRIAL ELECTRIC HEATING FURNACES
290	PRIME-MOVER DYNAMO PLANTS (III, Power Plants and Nonelectric Motors)
318	ELECTRICITY, MOTIVE POWER SYSTEMS
388	ELECTRICITY, MOTOR CONTROL SYSTEMS
187/29	ELEVATORS (electric control) (III, Class 187, Elevators Structure)
320	ELECTRICITY, BATTERY AND CONDENSER CHARGING AND DISCHARGING

Class	Subject
331	OSCILLATORS
330	AMPLIFIERS
328	MISCELLANEOUS ELECTRON SPACE DISCHARGE DEVICE SYSTEMS
*307/400-430	MISCELLANEOUS NONLINEAR REACTOR SYSTEMS
*307/200+	MISCELLANEOUS NONLINEAR SOLID STATE DEVICE CIRCUITS
333	WAVE TRANSMISSION LINES AND NETWORKS
363	ELECTRICAL POWER CONVERSION SYSTEMS
323	ELECTRICITY, POWER SUPPLY, OR REGULATION SYSTEMS
315	ELECTRIC LAMP AND DISCHARGE DEVICES, SYSTEMS
314	ELECTRIC LAMP AND DISCHARGE DEVICES, CONSUMABLE ELECTRODES
322	ELECTRICITY, SINGLE GENERATOR SYSTEMS
	ELECTRICITY, HEATING
*307	MISCELLANEOUS SYSTEMS
313	ELECTRIC LAMP AND DISCHARGE DEVICES
357	ACTIVE SOLID STATE DEVICES, E.G., TRANSISTORS, SOLID STATE DIODES
310	ELECTRICAL GENERATOR OR MOTOR STRUCTURE
335	ELECTRICITY, MAGNETICALLY OPERATED SWITCHES, MAGNETS AND ELECTROMAGNETS (Class 200, Electricity, Circuit Makers and Breakers, below, for mechanically actuated switches in general, and Class 337, Electricity, Electrothermally or Thermally Actuated Switches, below, for thermally actuated switch structures)
	ELECTRICITY, HEATING - (cont)
337	ELECTRICITY, ELECTROTHERMALLY OR THERMALLY ACTUATED SWITCHES (Class 200, Electricity, Circuit Makers and Breakers, below, for mechanically actuated switches in general, and Class 335, Electricity, Magnetically Actuated Switches, Magnets and Electromagnets, above, for magnetically actuated switch structures)
336	INDUCTOR DEVICES
361/433+	ELECTROLYTIC DEVICES (I, Classes 136, Batteries and 204, Chemistry, Electrical and Wave Energy
361/271+	CAPACITOR DEVICES
338	ELECTRICAL RESISTORS
200	ELECTRICITY, CIRCUIT MAKERS AND BREAKERS (Class 335, Electricity, Magnetically Actuated Switches, Magnets and Electromagnets, above, for magnetically actuated switches, and Class 337, Electricity, Electrothermally or Thermally Actuated Switches, above, for thermally actuated switches)
174	ELECTRICITY, CONDUCTORS AND INSULATORS
	AMMUNITION, WEAPONS
89	ORDNANCE (III, Class 124, Mechanical guns and projectors)
244/14	AIRCRAFT, TORPEDOES (III, Class 244, Aircraft Structure)
114/20-25	SHIPS (III, Class 114, Ship Structure)
42	FIREARMS
102	AMMUNITION AND EXPLOSIVES
149	EXPLOSIVE AND THERMIC COMPOSITIONS OR CHARGES
86	AMMUNITION AND EXPLOSIVE CHARGE MAKING
D-1 to D-99	DESIGNS

Class	Subject
505	SUPERCONDUCTOR TECHNOLOGY - APPARATUS, MATERIAL, PROCESS subclass 1 involving material superconducting above 30° Kelvin and Subclasses 800-933 for art collections on superconductor technology
	BODY TREATMENT CARE, ADORNMENT (I, Class 424, Drug, Bio-Affecting and Body Treating Compositions)
433	Dentistry
623	Prosthesis (i.e., Artificial Body Members), Parts Thereof or Aids and Accessories Therefor
128	Surgery
600	Surgery
604	Surgery
606	Surgery
132	Toilet
63	Jewelry
27	Undertaking
	APPAREL AND RELATED ARTS
2	Apparel
223	Apparel Apparatus
450	Foundation Garments
36	Boots, Shoes and Leggings
12	Boot and Shoe Making
69	Leather Manufactures
112	Sewing
	PLANT AND ANIMAL HUSBANDRY (Note: Class 100, Presses, for balers; Class 289, Knots and Knot Tying; Class 460, Crop Threshing or Separating
PLT	Plants
449	Bee Culture
452	Butchering
	PLANT AND ANIMAL HUSBANDRY - (cont)
43	Fishing, Trapping and Vermin Destroying
47	Plant Husbandry
119	Animal Husbandry
54	Harness
168	Farriery
231	Whips and Whip Apparatus
	TEACHING
434	Education and Demonstration (II, for navigation and radar)
40	Card, Picture and Sign Exhibiting
272	AMUSEMENT AND EXERCISING DEVICES
273	Amusement Devices, Games
446	Amusement Devices, Toys
124	Mechanical Guns and Projectors
99/275-450	FOOD PREPARING AND TREATING APPARATUS (I, Food Compositions and Processes)
	HEATING, COOLING (II, Electric Heating)
62	Refrigeration (I, Liquified gas)
237	Heating Systems
236	Automatic Temperature and Humidity Regulation
432	Heating
122	Liquid Heaters and Vaporizers
126	Stoves and Furnaces
431	Combustion
110	Furnaces (Solid or Combined Fuels)
165	Heat Exchange

Class	Subject
	BUILDINGS
135	Tents, Canopies, Umbrellas and Canes
109	Safes, Bank Protection and Related Devices
52	Static Structures, e.g., Buildings
14	Bridges
404	Road Structure, Process and Apparatus
182	Fire Escapes, Ladders, Scaffolds
220	RECEPTACLES
312	Supports, Cabinet Structures
190	Trunks and Hand Carried Luggage
206	Special Receptacle or Package
215	Bottles and Jars
229	Envelopes, Wrappers and Paperboard Boxes
150	Purses, Wallets, and Protective Covers
383	Flexible Bags
217	Wooden Receptacles
248	SUPPORTS
5	Beds
297	Chairs and Seats
211	Supports, Racks
108	Horizontally Supported Planar Surfaces
	CLOSURES, PARTITIONS, PANELS (Building and receptacle classes for other closures, partitions, and panels)
*267	Spring Devices (Support Type)
49	Movable or Removable Closures
160	Closures, Partitions and Panels, Flexible and Portable
256	Fences
	TEXTILES
8/147-159	Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers (I, for processes and compositions)
245	Wire Fabrics and Structure
289	Knots and Knot Tying
28	Textiles, Manufacturing
26	Textiles, Cloth Finishing
66	Textiles, Knitting
87	Textiles, Braiding, Netting and Lace Making
139	Textiles, Weaving
57	Textiles, Spinning, Twisting and Twining
19	Textiles, Fiber Preparation
	EARTH WORKING AND AGRICULTURAL MACHINERY
405	Hydraulic and Earth Engineering
299	Mining or In Situ Disintegration of Hard Material
166	Wells
175	Boring or Penetrating the Earth
111	Planting
171	Unearthing Plants or Buried Objects
37	Excavating
56	Harvesters
172	Earth Working
194	CHECK-ACTUATED CONTROL MECHANISMS
	DISPENSING (For the distribution of this art see notes to definitions of Class 222, Dispensing, and Class 220, Receptacles)
453	Coin Handling
141	Fluent Material Handling, with Receiver or Receiver Coacting Means

Class	Subject
	DISPENSING- (cont)
169	Fire Extinguishers
291	Track Sanders
239	Fluid Sprinkling, Spraying and Diffusing
222	Dispensing
221	Article Dispensing
232	Deposit and Collection Receptacles
414	MATERIAL OR ARTICLE HANDLING
258	Railway Mail Delivery
186	Merchandising
406	Conveyors, Fluid Current
212	Traversing Hoists
198	Conveyers, Power-Driven
•187	Elevators (II, Electric control)
193	Conveyers, Chutes, Skids, Guides and Ways
224	Package and Article Carriers
294	Handling, Hand and Hoist-Line Implements (Class 81, Tools)
•901	Robots •Accepts No Applications
137	FLUID HANDLING
98	Ventilation
4	Baths, Closets, Sinks and Spittoons
138	Pipes and Tubular Conduits
251	Valves and Valve Actuation
	VEHICLES
244	Aeronautics (II, for aerial torpedoes)
114	Ships (II, for torpedoes)
441	Buoys, Rafts, and Aquatic Devices
	VEHICLES - (cont)
440	Marine Propulsion
191	Electricity, Transmission to Vehicles
104	Railways
246	Railway Switches and Signals
105	Railway Rolling Stock
238	Railways, Surface Track
280	Land Vehicles (e.g., chassis and running gear)
298	Land Vehicles, Dumping
180	Motor Vehicles
296	Land Vehicles, Bodies and Tops
	Parts (Mechanisms and Machine Elements, below)
301	Land Vehicles, Wheels and Axles
295	Railway Wheels and Axles
152	Resilient Tires and Wheels
305	Wheel Substitutes for Land Vehicles
213	Railway Draft Appliances
278	Land Vehicles, Animal Draft Appliances
293	Vehicle Fenders
•267/2-68, 140.1-141.7	Spring Devices
410	FREIGHT ACCOMMODATION ON FREIGHT CARRIER
	MOTORS, ENGINES, PUMPS (II, Electricity, for electric motors)
60	Power Plants (I, for chemical reaction motors)
123	Internal-Combustion Engines
417	Pumps
91	Motors, Expansible Chamber Type
415	Rotary Kinetic Fluid Motors or Pumps
416	Fluid Reaction Surfaces (i.e., Impellers)

MOTORS, ENGINES, PUMPS - (cont)

Class	Subject
185	Motors, Spring, Weight and Animal Powered
418	Rotary Expansible Chamber Devices
92	Expansible Chamber Devices

COATING, PRINTING, AND PRINTED MATERIAL; STATIONARY, BOOKS

Class	Subject
118	Coating Apparatus (I, Class 427, Coating Processes)
184	Lubrication
101	Printing
400	Typewriting Machines
199	Type Casting
276	Type Setting
401	Coating Implements with Material Supply
281	Books, Strips and Leaves
282	Manifolding
283	Printed Matter

MANUFACTURING, ASSEMBLING, INCLUDING SOME CORRELATIVE MISCELLANEOUS PRODUCTS

Class	Subject
164	Metal Founding
266	Metallurgical Apparatus
*29/1-25.42, 81-91.8, 560, 560.1	Metal Working (General Manufacturing)
412	Bookbinding: Process and Apparatus
53	Package Making
59	Chain, Staple and Horseshoe Making
76	Metal Tools and Implements, Making
79	Button Making

MANUFACTURING, ASSEMBLING, INCLUDING SOME CORRELATIVE MISCELLANEOUS PRODUCTS - (cont)

Class	Subject
493	Manufacturing Container or Tube from Paper; or Other Manufacturing from a Sheet or Web
131	Tobacco
147	Coopering
157	Wheelwright Machines
163	Needle and Pin Making
227	Elongated-Member-Driving Apparatus
270	Sheet-Material Associating
300	Brush, Broom and Mop Making
445	Electric Lamp or Space Discharge Component or Device Manufacturing
*29/ 148.3-179, 400-426.6, 428-559, 569-623.5, 631, 825-885	Metal Working (Methods)
*29/700-824	Metal Working (Assembling Apparatus)
*29/650	Plural Diverse Manufacturing Apparatus

CUTTING, COMMINUTING, AND MACHINING

Class	Subject
234	Selective Cutting (e.g. Punching)
460	Crop Threshing or Separating
241	Solid Material Comminution or Disintegration
10	Bolt, Nail, Nut, Rivet and Screw Making
*29/26-80 561-568	Metal Working (Miscellaneous Machining)
407	Cutters, For Shaping
30	Cutlery
51	Abrading
408	Cutting by Use of Rotating Axially Moving Tool

Class	Subject
	CUTTING, COMMINUTING, AND MACHINING - (cont)
82	Turning
83	Cutting
409	Gear Cutting, Milling, or Planing
125	Stone Working
144	Woodworking
142	Wood Turning
225	Severing by Tearing or Breaking
	PLASTIC DEFORMATION, PRESSING, OR TREATING (I, Plastics)
72	Metal Deforming
425	Plastic Article or Earthenware Shaping or Treating: Apparatus (I, Class 264, Plastic and Nonmetallic Article Shaping or Treating: Processes)
100	Presses
413	Sheet Metal Container Making
140	Wireworking
228	Metal Fusion Bonding
249	Static Molds
	MISCELLANEOUS TREATING (I, for chemical treatment and physical separation)
494	Imperforate Bowl, Centrifugal Separators
209	Classifying, Separating and Assorting Solids
366	Agitating
•134	Cleaning and Liquid Contact with Solids (I, for cleaning processes)
34	Drying and Gas or Vapor Contact With Solids
68	Textiles, Fluid Treating Apparatus
38	Textiles, Ironing or Smoothing
15	Brushing, Scrubbing and General Cleaning

Class	Subject
	HANDLING OR STORING SHEETS, WEBS, STRANDS, AND CABLE
402	Binder Device Releasably Engaging Aperture or Notch of Sheet
226	Advancing Material of Indeterminate-Length
242	Winding and Reeling
•254/ 199-417	Implements or Apparatus for Applying Pushing or Pulling Force (Cable Hauling or Strand Placing)
271	Sheet Feeding or Delivering
74	MACHINE ELEMENTS AND MECHANISMS
475	Planetary Gear Transmission Systems and Components
474	Endless Belt Power Transmission Systems and Components
•29/110-132	Metal Working (Rolls)
464	Rotary Shafts, Gudgeons, Housings and Flexible Couplings for Rotary Shafts
384	Bearings
173	Tool Driving or Impacting
188	Brakes
192	Clutches and Power-Stop Control
•254/ 1-134.7 418,427	Implements or Apparatus for Applying Pushing or Pulling Force (Force Multipliers)
269	Work Holders
303	Fluid-Pressure Brake and Analogous Systems
•16/1-220	MISCELLANEOUS HARDWARE
70	Locks
•267	Spring Devices

Class	Subject
	TOOLS
7	Compound Tools
*29/213-283	Metal Working (Assembling Devices)
81	Tools
403	JOINTS AND CONNECTIONS
439	Electrical Connectors
285	Pipe Joints or Couplings
*16/221-392	Miscellaneous Hardware (Hinges)
279	Chucks and Sockets
277	Joint Packing
	FASTENINGS
292	Closure Fasteners
24	Buckles, Buttons, Clasps, etc.
411	Expanded, Threaded, Driven, Headed, Tool-Deformed, or Locked-Threaded Fastener

Class 260 is being reclassified in steps by forming new classes from parts of it. The new class numbers are in numerical order according to the hierarchy of the whole system. For subject matter that has not been reclassified, 260 appears in the "Class" column.

CLASS	SUBJECT MATTER
260	Miscellaneous
518	Fischer-Tropsch reactions
520	Synthetic Resins and Natural Rubbers
521	.Ion Exchange Resins; Cellular (Foams) Products
522	.Prepared By Wave Energy
523, 524	.With Non-reactive Additives
525	.Mixed Synthetic Resins, Block or Graft Copolymers; Chemical Modification of Solid Synthetic Resins (e.g.unsaturate + preformed resin)
526	.Reaction Zone Features
	.Polymers from Unsaturated Monomers
527	.Polymers from Specialized Reactants (e.g. proteins, carbohydrates)
528	.Condensates (from various starting materials, e.g., phenols)
530	Natural Resins, Proteins, Peptides or Lignins
532	Has no patents presently. Definitions contain a glossary of terms used in 532-570 Series of Classes.
534	.Noble gas, Radioactive Metal or Rare Earth Metal containing; Azo-type Compounds
536	.Carbohydrates
540	.Heterocyclic Compounds
	..Seven or more ring members with at least one hetero nitrogen; Steroids; Beta-lactams such as Cephalosporins and Penicillins
544	..Six-membered ring with two or more ring heteros, at least one hetero nitrogen
546	..Six-membered ring with one hetero nitrogen and five carbons
548	..Five-, Four- or Three-membered ring with at least one hetero nitrogen
549	..Hetero Sulfur or Oxygen
552	.Azides, Triphenylmethanes
260	.Carbocyclic or Acyclic
260	..Anthrones, Anthronols, Quinones, Steroids, Fatty Acids
556	..Heavy Metal, Aluminum, or Silicon containing
558, 560	..Esters
562	..Organic Acids, Acid Halides, Acid Anhydrides, Selenium or Tellurium Compounds
564	..Urea Adducts, Amino Nitrogen Compounds
568	..Boron, Phosphorus, Sulfur or Oxygen containing
260	..C-metal (light metal bonded directly to carbon)
570	..Halogen containing
585	Hydrocarbons

CHEMICAL

Group 110

DIRECTOR: DENNIS E. TALBERT
(Room CP3-9D19, 308-3729)

Group Classifier: Dennis Albrecht
(Art Units 115, 116, 118, 119 and 120)
(Except 125)
(Room CM2-980, 557-0173)

Group Classifier: David LeRoy
(Art Unit 112)
(Except 132)
(Room CM2-931, 557-3793)

Group Classifier: Frank Cervi
(Art Units 111, 113, 114, 117 and 150)
(Room CM2-981, 557-0157)

Art Unit	SPE	Room	Phone
111	Richard Dean	3-10E02	8-2548
112	John Niebling	3-10B04	8-3325
113	Michael Lewis	3-9A15	8-2535
114	Brian Hearn	3-10D35	8-2552
115	Paul Lieberman	3-10A15	8-3316
116	Helen Sneed	3-9D35	8-0840
117	Oilk Chaudhuri	3-10D27	8-0434
118	William Dixon	3-10B02	8-3324
119A	Theodore Morris	3-10E02	8-2546
119B	Prince Willis	3-10D07	8-3313

Group 120

DIRECTOR: JOHN TERAPANE
(Room CP2-8A07, 308-0193)

Group Classifier: Kate White
(Art Unit 125)
(Except Art Unit 181)
(Room CM2-975, 557-1013)

Art Unit	SPE	Room	Phone
121	Mary Lee	2-8A19	8-0409
122	Mukund Shah	2-8B32	8-1256
123	Frederick Waddell	2-8B10	8-1235
124	Jose Dees	2-8A09	8-0092
125	Stanley Friedman	2-8B02	8-0119
126	Donald B. Moyer	2-7D01	8-0252
129	Glennon H. Hollrah	2-8D31	8-0322

Group 130

DIRECTOR: BARRY RICHMAN
(Room CP3-8D19, 308-1193)

Group Classifier: David LeRoy
(Art Units 131, 135-137 and 139)
(Except Art Unit 132)
(Room CM2-935, 557-3441)

Group Classifier: Kate White
(Art Unit 132)
(Room CM2-975, 557-1013)

Group Classifier: William Wright
(Art Unit 133)
(Room CM2-934, 557-3792)

Art Unit	SPE	Room	Phone
131	Mike Ball	3-9E02	8-0651
132	Donald Czaja	3-8D01	8-0651
133	Richard Fisher	3-8B36	8-0651
134	David Simmons	3-9E16	8-0651
135	Jay Woo	3-8D35	8-0651

CHEMICAL

136	Richard Dawson	3-7A09	8-0651
137	Jan Silbaugh	3-8A01	8-0651
138	Stanley Silverman	3-7D11	8-0651
139	Norman Morgenstern	3-9B02	8-0651

Group 150

DIRECTOR: JAMES O. THOMAS, JR.
(Room CP2-11A04, 308-2359)

Group Classifier: Frank Cervi
(Room CM2-981, 557-0157)

Art Unit	SPE	Room	Phone
151	John Bleutge	2-11B02	8-2368
152	Merrell Cashion	2-10A10	8-2367
153	John Kight, III	2-10A22	8-2453
154	George F. Lesmes	2-11E16	8-2362
155	Joseph Schofer	2-10E02	8-2452
156	Paul Michl	2-10D02	8-2451
157	Marion Mc Camish	2-10D32	8-3961
158	Ellis Robinson	2-11E02	8-2364

Group 180

DIRECTOR: JOHN E. KITTLE
(Room CP2-9C13, 308-0196)

Group Classifier: Matt Thexton
(Art Unit 181)
(Room CM2-933, 557-9085)

Art Unit	SPE	Room	Phone
181	Robert Warden	2-5A15	8-2920
182	Esther Kepplinger	2-6A01	8-1219
183	Johnnie Brown	2-9D01	8-1179
184	Elizabeth Weimar	2-9B32	8-0254
185	Richard Schwartz	2-9D31	8-1083
186	Maraget Moskowitz	2-9A01	8-0452
187	Robert Wax	2-5D33	8-2454
188	Vacant		
189A	David Lacey	M1-12D19	8-4027
189B	John Doll	M1-9B01	8-3535

ELECTRICAL

Group 210

DIRECTOR: DONALD G. KELLY
(Room CP4-9D19, 308-0658)

Group Classifier: Douglas Lee
(Room CM2-911, 557-3907)

Art Unit	SPE	Room	Phone
211	Lee T. Hix	4-9B40	8-2969
212	Steven L. Stephan	4-9A01	8-3778
213	Leo Picard	4-10D10	8-3304
214	A. David Pellinen	4-10D17	8-3301
215	Arthur Grimley	4-9E16	8-2968
216	Bruce Reynolds	4-10B02	8-3305
217	Wm. M. Shoop, Jr.	4-9D01	8-0905
218	Benjamin R. Fuller	4-10B24	8-0211

Group 220*/290

DIRECTOR: ROBERT GARRETT
(Room CP4-11D17, 308-0753)

Group Classifier: Matt Thexton
(220)
(Room CM2-933 557-9085)

Group Classifier: Fred Shoon
(Art Unit 221)
(Room CM2-907, 557-5908)

Group Classifier: Herbert Bryan
(Art Unit 222)
(Room CM2-914, 557-0167)

Group Classifier: Kate White
(Art Unit 223 and 224)
(Room CM2-975, 557-1013)

Group Classifier: J. Paul Guertin
(Art Unit 290)
(Room CM2-310, 557-0163)

*Security Group--all entries through

Room CP4-10C17 (receptionist)

ELECTRICAL

Art Unit	SPE	Room	Phone
221	Debbie Kyle	3-11A15	8-0918
222	Tom Tarcza	3-11D35	8-1689
223	Robert L. Stoll	3-11E02	8-1701
224	Brooks Hunt	3-11A01	8-1682
291	Wallace R. Burke	6-11E02	8-0569
292	Bernard Ansher	6-11A02	8-0558
293	Bruce Dunkins	6-1215-1	8-0555
294	A. Hugo Word	6-11B04	8-0571

Group 230

DIRECTOR: GERALD GOLDBERG
(Room CP4-11D37, 308-0754)

Group Classifier: Steve Dildine
(Room CM2-924, 557-3524)

Art Unit	SPE	Room	Phone
231	Gary Harkcom	4-10E16	8-2826
232	Archie Williams	4-11B02	8-0538
233	Stuart Hecker	4-11D01	8-0079
234	Parshotam Lall	4-11D17	8-1373
235	Vacant		
236	Jerry Smith	4-11E10	8-3101
237	Gareth Shaw	4-11B40	8-3101
238	Michael Fleming	4-10E06	8-1691
239	Stuart Levy	4-11D35	8-0725

Group 240

DIRECTOR: TRYGVE M. BLIX
(Room CP4-6C17, 308-0771)

Group Classifier: Romulo B. Sanchez, Jr.
(Art Unit 241 - 246)
(Room CM2-955, 557-3484)

Group Classifier: William E. Heaton
(Art Unit 247)
(Room CM2-310, 557-0135)

Art Unit	SPE	Room	Phone
241	Steve Marcus	4-6B02	8-1499
242	Harvey C. Hornsby	4-7A15	8-1374
243	Henry Recla	4-6B30	8-1382
244	Paul Sewell	4-7D19	8-1543
245	Daniel Stodola	4-7E16	8-2673
246	William Cuchlinski	4-6E14	8-3873
247	Werner H. Schroeder	4-6D01	8-0949

Group 250

DIRECTOR: EDWARD KUBASIEWICZ
(Room CP4-8D17, 308-0956)

Group Classifier: Herbert Bryan
(Room CM2-914, 557-0167)

Art Unit	SPE	Room	Phone
251	William L. Sikes	4-8E02	8-0700
252	Eugene R. La Roche	4-8B34	8-2878
253	Andrew James	4-7B02	8-1610
254	Stanley Miller	4-7E02	8-1532
255	Davis L. Willis	4-8A15	8-1393
256	Janice Howell	4-8B02	8-0612
257	Bruce Arnold	4-7B12	8-0758
258	Rolf Hille	4-7B12	8-1598

ELECTRICAL

Group 260

DIRECTOR: STEWART LEVY (Acting)
(Room CP4-5D19, 308-2802)

Group Classifier: Steve Dildine
(Art Unit 266)
(Except Class 73)
(Room CM2-922, 557-3514)

Group Classifier: Tuan Nguyen
(Art Units 263, 265* and 267)
(Except Class 73)
(Room CM2-915, 557-0168)

Group Classifier: Will Davis
(Art Units 261, 262, 264, 268* and 269)
(Room CM2-916, 557-0169)

Art Unit	SPE	Room	Phone
261	Jin Ng	4-4D01	8-2991
262	James J. Groody	4-4B02	8-2912
263	Douglas Olms	4-5E02	8-0305
264	Donald J. Yusko	4-6E02	8-2126
265	Hezron Williams (Acting)	4-5B29	8-2674
266	David K. Moore	4-5B02	8-2686
267	R. J. Eizenzopf	4-5D01	8-2696
268	Joseph Orsino	4-5D01	8-0979
269	Alvin Oberley	4-4B16	8-3255

MECHANICAL

Group 310

DIRECTOR: Bobby R. Gray
(Room CP3-5D17, 308-1113)

Group Classifier: V. Walter Pretka
(Room CM2-310, 557-0103)

Art Unit	SPE	Room	Phone
311	Robert Olszewski	3-5A01	8-2588
312	Margaret Focurino	3-4D35	8-0885
313	Robert Oberleitner	3-5B18	8-2569
314	Andres Kashnikow	3-5D01	8-1137
315	Joseph Peters, Jr.	3-5E02	8-2561
316	Charles Marmor	3-6A01	8-0361
317	Robert Spar	3-5D35	8-2555
318	Michael Huppert	3-5D11	8-1107

Group 320

DIRECTOR: NICHOLAS GODICI
(Room CP3-6D19, 308-1078)

Group Classifier: Donald Reiley, III
(Room CM2-310, 557-1042)

Art Unit	SPE	Room	Phone
321	Robert L. Spruill	3-7E02	8-3837
322	Vacant		
323	Frederick Schmidt	3-7D35	8-2333
324	Frank Yost	3-6E02	8-2058
325	Richard Seidel	3-6D01	8-2319
326	Howard Goldberg	3-7A01	8-3852

Group 330

DIRECTOR: JOHN LOVE
(Room CP4-4D19, 308-0873)

Group Classifier: Edmond G. Rishell, Jr.
(Room CM2-310, 557-0105)

Art Unit	SPE	Room	Phone
331	Robert Hafer	3-3A01	8-2121
332	Richard J. Apley	4-4E16	8-1065
333	L. Gene Mancene	3-3E02	8-2156
334	Ed Coven	4-3E02	8-0871
335	Kyle L. Howell	3-4E02	8-3256

MECHANICAL

336	C. F. Rosenbaum	4-3D39	8-0495
337	Edgar S. Burr	3-3D01	8-3144
338	Randall Green	4-4D25	8-1006
339	Stephen Pellegrind	4-3D35	8-1015

Group 340

DIRECTOR: CARLTON R. CROYLE (Acting)
(Room CP4-3D17, 308-0861)

Group Classifier: Douglas A. Salser
(Room CM2-310, 557-0137)

Art Unit	SPE	Room	Phone
341	Edward K. Look	4-3B22	8-1044
342	Charles J. Myhre	4-2D01	8-1946
343	Carlton R. Croyle	4-3B02	8-0102
344	Albert J. Makay	4-3D01	8-0101
346	Ira Lazarus	4-2B02	8-1935
347	Martin P. Schwardron	3-2B42	8-2597

Group 350

DIRECTOR: AL LAWRENCE SMITH
(Room CP3-3D19, 308-1020)

Group Classifier: William Heaton
(Room CM2-310, 557-0135)

Art Unit	SPE	Room	Phone
351	Randolph Reese	3-4D01	8-2498
352	Leslie A. Braun	3-2B36	8-0830
354	David Scherbel	3-2D35	8-2144
355	Carl D. Friedman	3-4E02	8-0331
356	Ramon S. Britts	3-4A11	8-0839
357	Kenneth J. Dorner	3-3E16	8-0866
358	Gary L. Smith	3-4D17	8-0827

CLASSES ARRANGED BY ART UNIT

ART UNIT 111

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	75	SPECIALIZED METALLURGICAL PROCESSES, COMPOSITIONS FOR USE THEREIN, CONSOLIDATED METAL POWDER COMPOSITIONS, ETC.	10.1	10.67
			300	609
			624	962
CLASS	148	METAL TREATMENT	1	30
			100	125
			127	131
			133	162
			300	910
CLASS	222	DISPENSING	590	607
			629	
CLASS	266	METALLURGICAL APPARATUS	ALL	
CLASS	420	ALLOYS OR METALLIC COMPOSITIONS	8	903

ART UNIT 112

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	204	CHEMISTRY, ELECTRICAL AND WAVE ENERGY	1.11	
			2	157.15
			157.3	191
			193	297W
			299EC	914
			DIG. 1	DIG. 13
CLASS	429	CHEMISTRY, ELECTRICAL CURRENT PRODUCING APPARATUS, PRODUCT AND PROCESS	111	

ART UNIT 113

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	23	CHEMISTRY, PHYSICAL PROCESSES	ALL	
CLASS	71	CHEMISTRY, FERTILIZERS	1	
			5	64.13
			900	904
			DIG. 2	DIG. 4
CLASS	252	COMPOSITIONS	378P	378R
			950	951
CLASS	423	CHEMISTRY, INORGANIC	210	248
			262	323
			351	659
			DIG. 1	DIG. 20
CLASS	428	STOCK MATERIAL OR MISCELLANEOUS ARTICLES	544	545
			567	687
			923	941

ART UNIT 114

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	29	METAL WORKING	2	
			623.1	623.5

CLASSES ARRANGED BY ART UNIT

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	29	METAL WORKING	730	731
CLASS	148	METAL TREATMENT	33	33.6
			DIG. 1	DIG.174
CLASS	429	CHEMISTRY, ELECTRICAL CURRENT PRODUCING APPARATUS, PRODUCT AND PROCESS	1	110
			112	255
CLASS	437	SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS	1	43
			45	60
			134	204
			225	987

ART UNIT 115

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	8	BLEACHING AND DYEING; FLUID TREATMENT AND CHEMICAL MODIFICATION OF TEXTILES AND FIBERS	94.1R	
			128.1	128.3
			160	939
			DIG. 1	DIG. 21
CLASS	252	COMPOSITIONS	8.57	8.9
			60	62
			67	79
			89.1	175
			500	581
			DIG. 1	DIG. 17
			DIG. 19	

ART UNIT 116

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	260	CHEMISTRY, CARBON COMPOUNDS	DIG. 42	
CLASS	423	CHEMISTRY, INORGANIC	326	334
CLASS	502	CATALYST, SOLID SORBENT, OR SUPPORT THEREFOR, PRODUCT OR PROCESS OF MAKING	ALL	
CLASS	585	CHEMISTRY, HYDROCARBONS	ALL	

ART UNIT 117

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	29	METAL WORKING	25.01	25.03
CLASS	156	ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL MANUFACTURE	600	624
			911	
			DIG. 61	DIG.115
CLASS	252	COMPOSITIONS	62.2	62.9
			DIG. 18	
CLASS	422	PROCESS DISINFECTING, DEODORIZING, PRESERVING OR STERILIZING, AND CHEMICAL APPARATUS	245	254
CLASS	423	CHEMISTRY, INORGANIC	324	325
			335	350

CLASSES ARRANGED BY ART UNIT

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	437	SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS	44	
			61	133
			205	224

ART UNIT 118

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	51	ABRADING	293	309
CLASS	106	COMPOSITIONS, COATING OR PLASTIC	1.05	38.9
			310	904
			DIG. 1	DIG. 7
CLASS	501	COMPOSITIONS: CERAMIC	ALL	

ART UNIT 119

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	8	BLEACHING AND DYEING; FLUID TREATMENT AND CHEMICAL MODIFICATION OF TEXTILES AND FIBERS	94.1D	94.1P
			94.11	127.6
			129	142
CLASS	44	FUEL AND RELATED COMPOSITIONS	ALL	
CLASS	106	COMPOSITIONS, COATING OR PLASTIC	122	287.35
CLASS	127	SUGAR, STARCH AND CARBOHYDRATES	ALL	
CLASS	134	CLEANING AND LIQUID CONTACT WITH SOLIDS	1	42
CLASS	136	BATTERIES, THERMOELECTRIC AND PHOTOELECTRIC	243	293
CLASS	204	CHEMISTRY, ELECTRICAL AND WAVE ENERGY	192.1	192.38
			298.01	298.41
CLASS	208	MINERAL OILS: PROCESSES AND PRODUCTS	ALL	
CLASS	252	COMPOSITIONS	9	58
			80	88
			176	181
			301.16	301.6S
			367	370
			492	
CLASS	423	CHEMISTRY, INORGANIC	1	
			21.1	209

ART UNIT 121

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	534	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	550	887
CLASS	548	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL	
CLASS	558	ORGANIC COMPOUNDS -- PART OF THE 532-570 SERIES	ALL	

CLASSES ARRANGED BY ART UNIT

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
ART UNIT 122				
CLASS	540	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL	
CLASS	544	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL	
ART UNIT 123				
CLASS	546	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL	
CLASS	549	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	200	563
ART UNIT 124				
CLASS	260	CHEMISTRY, CARBON COMPOUNDS	1	665R
CLASS	556	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL	
CLASS	560	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL	
CLASS	562	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL	
ART UNIT 125				
CLASS	514	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS	ALL	
ART UNIT 126				
CLASS	252	COMPOSITIONS	372	377
CLASS	260	CHEMISTRY, CARBON COMPOUNDS	DIG. 44	
CLASS	512	PERFUME COMPOSITIONS	ALL	
CLASS	518	CHEMISTRY FISCHER-TROPSCH PROCESSES: OR PURIFICATION OR RECOVERY OF PRODUCTS THEREOF	ALL	
CLASS	552	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL	
CLASS	568	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL	
CLASS	570	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL	

CLASSES ARRANGED BY ART UNIT

ART UNIT 129

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	71	CHEMISTRY, FERTILIZERS	3	4
			65	128
			DIG. 1	
CLASS	424	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS	2	11
			49	60
			65	68
			84	
			114	126
			600	724
			DIG. 1	DIG. 15
CLASS	549	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	1	90
CLASS	564	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL	

ART UNIT 131

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	152	RESILIENT TIRES AND WHEELS	151	322
			331.1	373
			415	565
			DIG. 1	DIG. 7
			DIG. 9	
			DIG. 11	DIG. 16
			DIG. 18	DIG. 19
CLASS	156	ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL MANUFACTURE	1	63
			66	72
			74	81
			83	88
			90	156
			160	161
			163	164
			166	181
			196	228
			242	246
			283	287
			290	303.1
			305	344
			346	348
			393	441
			459	474
			500	501
			584	
			906	910

ART UNIT 132

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	426	FOOD OR EDIBLE MATERIAL: PROCESSES, COMPOSITIONS AND PRODUCTS	ALL	

CLASSES ARRANGED BY ART UNIT

ART UNIT 133

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	48	GAS, HEATING AND ILLUMINATING	ALL	
CLASS	65	GLASS MANUFACTURING	ALL	
CLASS	118	COATING APPARATUS	13	47
			52	506
			620	643
			663	714
			DIG. 1	DIG. 22
CLASS	162	PAPER MAKING AND FIBER LIBERATION	ALL	
CLASS	196	MINERAL OILS: APPARATUS	ALL	
CLASS	201	DISTILLATION: PROCESSES, THERMOLYTIC	ALL	
CLASS	202	DISTILLATION: APPARATUS	207	230
			DIG. 1	

ART UNIT 134

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	118	COATING APPARATUS	50	50.1
			600	612
			715	900
CLASS	148	METAL TREATMENT	240	287
CLASS	156	ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL MANUFACTURE	64	65
			73.1	73.6
			82	
			89	
			157	159
			162	
			165	
			182	195
			229	241
			247	282
			288	289
			304.1	304.7
			345	
			349	392
			441.5	458
			475	499
			502	583.91
			598	
			625	905
			DIG. 1	DIG. 51
CLASS	252	COMPOSITIONS	79.1	79.5
CLASS	428	STOCK MATERIAL OR MISCELLANEOUS ARTICLES	472.1	472.3

CLASSES ARRANGED BY ART UNIT

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
ART UNIT 135				
CLASS	55	GAS SEPARATION	ALL	
CLASS	128	SURGERY	642	644
CLASS	210	LIQUID PURIFICATION OR SEPARATION	500.21	500.43
			511	512.3
CLASS	249	STATIC MOLDS	ALL	
CLASS	261	GAS AND LIQUID CONTACT APPARATUS	ALL	
CLASS	264	PLASTIC AND NONMETALLIC ARTICLE SHAPING OR TREATING: PROCESSES	129	163
			219	227
			257	258
CLASS	425	PLASTIC ARTICLE OR EARTHENWARE SHAPING OR TREATING: APPARATUS	ALL	
ART UNIT 136				
CLASS	210	LIQUID PURIFICATION OR SEPARATION	85	149
			198.2	198.3
			222	231
			321.6	347
			417	500.1
			501	510.1
			634	659
			695	
			767	930
			DIG. 3	DIG. 17
CLASS	264	PLASTIC AND NONMETALLIC ARTICLE SHAPING OR TREATING: PROCESSES	5	15
			45.1	55
			109	128
			321	
			517	518
ART UNIT 137				
CLASS	264	PLASTIC AND NONMETALLIC ARTICLE SHAPING OR TREATING: PROCESSES	1.1	2.7
			4	
			16	44
			56	108
			164	218
			228	256
			259	320
			322	516
			519	574
			DIG. 1	DIG. 84
ART UNIT 138				
CLASS	159	CONCENTRATING EVAPORATORS	ALL	
CLASS	202	DISTILLATION: APPARATUS	81	206
			232	270

			SUBCLASSES	
		CLASS TITLE	FROM	TO
CLASS	203	DISTILLATION: PROCESSES, SEPARATORY	ALL	
CLASS	209	CLASSIFYING, SEPARATING AND ASSORTING SOLIDS	162	170
CLASS	210	LIQUID PURIFICATION OR SEPARATION	150	198.1
			199	221.2
			232	320
			348	416.5
			513	633
			660	694
			696	766
ART UNIT 139				
CLASS	427	COATING PROCESSES	1	213
			214	445
CLASS	505	SUPERCONDUCTOR TECHNOLOGY - APPARATUS, MATERIAL, PROCESS	ALL	
ART UNIT 151				
CLASS	260	CHEMISTRY, CARBON COMPOUNDS	998.11	998.22
CLASS	521	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	40	49.8
			50.5	
CLASS	523	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	106	108
			121	123
			129	
			134	135
			139	159
			164	165
			171	174
			200	217
			220	300
			427	434
			436	445
			450	
			464	468
			513	
			518	527
CLASS	524	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	1	8
			59	71
			79	
			275	279
			401	456
			492	497
			500	
			502	542
			588	
			597	
			610	
			650	700

		CLASS TITLE	SUBCLASSES FROM	 TO
CLASS	524	SYNTHETIC RESINS OR	705	
		NATURAL RUBBERS -- PART	763	
		OF THE CLASS 520 SERIES	779	791
			847	
			857	869
CLASS	525	SYNTHETIC RESINS OR	10	54
		NATURAL RUBBERS -- PART	54.5	111
		OF THE CLASS 520 SERIES	112	133
			134	167
			168	301
			302	324
			339	420
			421	444
			445	501
			502	517
			518	941
CLASS	527	SYNTHETIC RESINS OR	500	503
		NATURAL RUBBERS -- PART		
		OF THE CLASS 520 SERIES		
CLASS	528	SYNTHETIC RESINS OR	4	26
		NATURAL RUBBERS -- PART	27	43
		OF THE CLASS 520 SERIES	196	204
			246	264
			370	391
			901	
CLASS	536	ORGANIC COMPOUNDS -- PART	2	3
		OF THE CLASS 532-570 SERIES	30	50
			56	111

ART UNIT 152

CLASS	424	DRUG, BIO-AFFECTING AND BODY	40	48
		TREATING COMPOSITIONS	61	64
			69	83
			400	502

ART UNIT 153

CLASS	521	SYNTHETIC RESINS OR	50	
		NATURAL RUBBERS -- PART	51	921
		OF THE CLASS 520 SERIES		
CLASS	523	SYNTHETIC RESINS OR	109	
		NATURAL RUBBERS -- PART	115	120
		OF THE CLASS 520 SERIES	136	138
			175	181
			218	219
			435	
			446	449
			451	461
			506	512
			514	516

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	524	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	9	58
			72	78
			80	185
			270	274
			323	353
			392	400
			462	473
			498	
			589	590
			592	595
			599	607
			611	612
			701	704
			706	713
			732	735
			742	754
			764	
			797	799
			871	881
CLASS	527	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	100	403
			600	604
CLASS	528	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	1	3
			26.5	
			44	195
			205	245.5
			265	308
			310	369
			392	503
			902	950
CLASS	530	CHEMISTRY, NATURAL RESINS OR DERIVATIVES PEPTIDES OR PROTEINS; LIGNINS OR REACTION PRODUCTS THEREOF	200	233
			500	507

ART UNIT 154

CLASS	428	STOCK MATERIAL OR MISCELLANEOUS ARTICLES	85	97
			158	160
			189	191
			196	198
			221	402
			403	407
			411.1	425.9
			443	445
			455	472
			473	537.7
			540	543
			692	695
			900	922

ART UNIT 155

CLASS	260	CHEMISTRY, CARBON COMPOUNDS	DIG. 14	DIG. 41
			DIG. 43	

CLASSES ARRANGED BY ART UNIT

			SUBCLASSES	
		CLASS TITLE	FROM	TO
CLASS	260	CHEMISTRY, CARBON COMPOUNDS	DIG. 45	DIG. 47
CLASS	520	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	ALL	
CLASS	521	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	25	39
CLASS	523	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	1	105
			111	114
			124	128
			130	132
			160	161
			167	170
			303	426
			462	463
			500	505
			517	
CLASS	524	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	186	269
			280	322
			354	391
			457	461
			474	491
			499	
			501	
			543	587
			591	
			596	
			598	
			608	609
			714	731
			736	741
			755	762
			765	778
			792	796
			800	846
			848	856
			900	929
CLASS	525	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	7	8
			54.1	54.45
			111.5	
			133.5	
			167.5	
			301.5	
			326.1	338
			420.5	
			444.5	
			501.5	
			517.5	
			942	
CLASS	526	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	ALL	

CLASSES ARRANGED BY ART UNIT

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	528	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	308.1	309.1

ART UNIT 156

		CLASS TITLE	FROM	TO
CLASS	430	RADIATION IMAGERY CHEMISTRY - PROCESS, COMPOSITION OR PRODUCT	31	137
			141	268
			331	393
			398	967

ART UNIT 157

		CLASS TITLE	FROM	TO
CLASS	430	RADIATION IMAGERY CHEMISTRY - PROCESS, COMPOSITION OR PRODUCT	1	30
			138	140
			269	330
			394	397
CLASS	522	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	ALL	

ART UNIT 158

		CLASS TITLE	FROM	TO
CLASS	428	STOCK MATERIAL OR MISCELLANEOUS ARTICLES	1	84
			98	157
			161	188
			192	195
			199	220
			408	410
			426	442
			446	454
			688	691
			696	704
CLASS	503	RECORD RECEIVER HAVING PLURAL LEAVES OR A COLORLESS COLOR FORMER, METHOD OF USE OR DEVELOPER THEREFOR	ALL	

ART UNIT 181

		CLASS TITLE	FROM	TO
CLASS	422	PROCESS DISINFECTING, DEODORIZING, PRESERVING OR STERILIZING, AND CHEMICAL APPARATUS	1	185
			187	244
			255	903
CLASS	436	CHEMISTRY: ANALYTICAL AND IMMUNOLOGICAL TESTING	1	7
			25	33
			68	
			500	517
			800	829

ART UNIT 182

		CLASS TITLE	FROM	TO
CLASS	435	CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY	7.1	7.95
			235.1	
			800	975

				SUBCLASSES	
			CLASS TITLE	FROM	TO
	CLASS	436	CHEMISTRY: ANALYTICAL AND IMMUNOLOGICAL TESTING	518	548
	CLASS	935	GENETIC ENGINEERING: RECOMBINANT DNA TECHNOLOGY,HYBRID OR FUSED CELL TECHNOLOGY AND RELATED MANIPULATIONS OF NUCLEIC ACIDS	76	88
ART UNIT 183					
	CLASS	424	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS	195.1	197.1
	CLASS	435	CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY	100	105
	CLASS	536	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	1.1	
				4.1	26
				29	
				51	55.3
				112	128
ART UNIT 184					
	CLASS	PLT	PLANTS	ALL	
	CLASS	47	PLANT HUSBANDRY	1.1	1.4
				57.6	65
				DIG. 1	
				DIG. 8	DIG. 9
	CLASS	424	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS	93	94.67
				520	583
	CLASS	435	CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY	41	71.3
				106	172.3
				259	261
				317.1	
	CLASS	536	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	27	28
	CLASS	800	MULTICELLULAR LIVING ORGANISMS AND UNMODIFIED PARTS THEREOF	ALL	
	CLASS	935	GENETIC ENGINEERING: RECOMBINANT DNA TECHNOLOGY,HYBRID OR FUSED CELL TECHNOLOGY AND RELATED MANIPULATIONS OF NUCLEIC ACIDS	66	67
				70	71
				89	110
ART UNIT 185					
	CLASS	435	CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY	173	
				320.1	

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	935	GENETIC ENGINEERING: RECOMBINANT DNA TECHNOLOGY,HYBRID OR FUSED CELL TECHNOLOGY AND RELATED MANIPULATIONS OF NUCLEIC ACIDS	1	65
			68	69
			72	75
			111	

ART UNIT 186

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	424	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS	85.8	92
CLASS	435	CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY	183	234
CLASS	930	PEPTIDE OR PROTEIN SEQUENCE	ALL	

ART UNIT 187

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	435	CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY	4	6
			8	40

ART UNIT 188

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	435	CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY	1	3
			72	99
			174	182
			236	258
			262	282

ART UNIT 189

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	424	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS	85.1	85.7
CLASS	435	CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY	283	316
CLASS	436	CHEMISTRY: ANALYTICAL AND IMMUNOLOGICAL TESTING	8	24
			34	67
			69	183
			900	910
CLASS	530	CHEMISTRY, NATURAL RESINS OR DERIVATIVES PEPTIDES OR PROTEINS; LIGNINS OR REACTION PRODUCTS THEREOF	300	427
			800	859

ART UNIT 211

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	84	MUSIC	1	521
CLASS	350	OPTICS, SYSTEMS AND ELEMENTS	4.1	4.2
			117	129
			258	265
CLASS	352	OPTICS, MOTION PICTURES	ALL	
CLASS	354	PHOTOGRAPHY	ALL	

			CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
	CLASS	355	PHOTOCOPYING	1	133
	CLASS	361	ELECTRICITY, ELECTRICAL SYSTEMS AND DEVICES	247 271 434 500	266 326 436 541
ART UNIT 212					
	CLASS	310	ELECTRICAL GENERATOR OR MOTOR STRUCTURE	1 306 DIG. 2	300 800 DIG. 6
	CLASS	318	ELECTRICITY, MOTIVE POWER SYSTEMS	35 114	38 135
	CLASS	320	ELECTRICITY, BATTERY AND CONDENSER CHARGING AND DISCHARGING	ALL	
	CLASS	322	ELECTRICITY, SINGLE GENERATOR SYSTEMS	ALL	
	CLASS	323	ELECTRICITY,POWER SUPPLY, OR REGULATION SYSTEMS	ALL	
	CLASS	363	ELECTRIC POWER CONVERSION SYSTEMS	ALL	
ART UNIT 213					
	CLASS	174	ELECTRICITY, CONDUCTORS AND INSULATORS	ALL	
	CLASS	181	ACOUSTICS	18 126 143 403	30 138 296 404
	CLASS	200	ELECTRICITY, CIRCUIT MAKERS AND BREAKERS	80A	86.5
	CLASS	235	REGISTERS	1A	201R
	CLASS	335	ELECTRICITY, MAGNETICALLY OPERATED SWITCHES, MAGNETS AND ELECTROMAGNETS	ALL	
	CLASS	336	INDUCTOR DEVICES	ALL	
	CLASS	337	ELECTRICITY, ELECTROTHERMALLY OR THERMALLY ACTUATED SWITCHES	ALL	
ART UNIT 214					
	CLASS	187	ELEVATORS	3 29.1 100	3.1 29.2 140

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	200	ELECTRICITY, CIRCUIT MAKERS AND BREAKERS	1TK 50AA 52A 144AP 600 DIG. 2	41 50R 61.93 180 DIG. 47
CLASS	290	PRIME-MOVER DYNAMO PLANTS	ALL	
CLASS	307	ELECTRICAL TRANSMISSION OR INTERCONNECTION SYSTEMS	1 326 400	157 328 423
CLASS	314	ELECTRIC LAMP AND DISCHARGE DEVICES, CONSUMABLE ELECTRODES	ALL	
CLASS	341	CODED DATA GENERATION OR CONVERSION	1 50 200	17 172 899
CLASS	361	ELECTRICITY, ELECTRICAL SYSTEMS AND DEVICES	1 267 327 437	246 270 432

ART UNIT 215

CLASS	118	COATING APPARATUS	644	662
CLASS	355	PHOTOCOPYING	200	328

ART UNIT 216

CLASS	219	ELECTRIC HEATING	ALL	
CLASS	338	ELECTRICAL RESISTORS	ALL	
CLASS	373	INDUSTRIAL ELECTRIC HEATING FURNACES	ALL	
CLASS	392	ELECTRIC RESISTANCE HEATING DEVICES	ALL	

ART UNIT 217

CLASS	84	MUSIC	600 DIG. 1	746 DIG. 30
CLASS	318	ELECTRICITY, MOTIVE POWER SYSTEMS	1 39 136 DIG. 2	34 113 832
CLASS	368	HOROLOGY: TIME MEASURING SYSTEMS OR DEVICES	ALL	
CLASS	388	ELECTRICITY, MOTOR CONTROL SYSTEMS	ALL	

CLASSES ARRANGED BY ART UNIT

				SUBCLASSES	
			CLASS TITLE	FROM	TO
ART UNIT 218					
	CLASS	177	WEIGHING SCALES	ALL	
	CLASS	346	RECORDERS	ALL	
	CLASS	358	PICTORIAL COMMUNICATION; TELEVISION	296	304
ART UNIT 221					
	CLASS	42	FIREARMS	ALL	
	CLASS	86	AMMUNITION AND EXPLOSIVE-CHARGE MAKING	ALL	
	CLASS	89	ORDNANCE	ALL	
	CLASS	102	AMMUNITION AND EXPLOSIVES	200	282
				293	
				362	705
	CLASS	114	SHIPS	20.1	25
	CLASS	181	ACOUSTICS	0.5	
				101	125
				139	142
				400	402
	CLASS	244	AERONAUTICS	3.1	3.3
				14	
	CLASS	264	PLASTIC AND NONMETALLIC ARTICLE SHAPING OR TREATING: PROCESSES	0.5	
	CLASS	340	COMMUNICATIONS, ELECTRICAL	850	861
	CLASS	367	COMMUNICATIONS, ELECTRICAL: ACOUSTIC WAVE SYSTEM AND DEVICES	140	191
ART UNIT 222					
	CLASS	178	TELEGRAPHY	37	
				99.1	
	CLASS	310	ELECTRICAL GENERATOR OR MOTOR STRUCTURE	301	305
	CLASS	315	ELECTRIC LAMP AND DISCHARGE DEVICES, SYSTEMS	10	30
				364	411
	CLASS	330	AMPLIFIERS	4	4.3
	CLASS	342	COMMUNICATIONS, DIRECTIVE RADIO WAVE SYSTEMS AND DEVICES (E.G., RADAR, RADIO NAVIGATION)	ALL	
	CLASS	356	OPTICS, MEASURING AND TESTING	1	

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	356	OPTICS, MEASURING AND TESTING	4	
			5	
			28	29
			141	
			152	
CLASS	358	PICTORIAL COMMUNICATION; TELEVISION	349	
CLASS	367	COMMUNICATIONS, ELECTRICAL: ACOUSTIC WAVE SYSTEM AND DEVICES	1	92
			95	139
			900	912
CLASS	375	PULSE OR DIGITAL COMMUNICATIONS	1	
CLASS	380	CRYPTOGRAPHY	ALL	
CLASS	434	EDUCATION AND DEMONSTRATION	1	10
CLASS	455	TELECOMMUNICATIONS	26.1	

ART UNIT 223

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	252	COMPOSITIONS	1	8.555
			181.1	181.7
			184	299.7
			302	363.5
			380	478
			582	611
			700	
			960	965
CLASS	264	PLASTIC AND NONMETALLIC ARTICLE SHAPING OR TREATING: PROCESSES	4.1	4.7
CLASS	424	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS	1.1	
CLASS	427	COATING PROCESSES	213.3	213.36
CLASS	428	STOCK MATERIAL OR MISCELLANEOUS ARTICLES	402.2	402.24
CLASS	534	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	7	16

ART UNIT 224

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	60	POWER PLANTS	205	220
CLASS	75	SPECIALIZED METALLURGICAL PROCESSES, COMPOSITIONS FOR USE THEREIN, CONSOLIDATED METAL POWDER COMPOSITIONS, ETC.	228	255
			610	623
CLASS	102	AMMUNITION AND EXPLOSIVES	283	292
			301	361

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	136	BATTERIES, THERMOELECTRIC AND PHOTOELECTRIC	200	242
CLASS	148	METAL TREATMENT	126.1	
			132	
CLASS	149	EXPLOSIVE AND THERMIC COMPOSITIONS OR CHARGES	ALL	
CLASS	204	CHEMISTRY, ELECTRICAL AND WAVE ENERGY	1.5	
			157.2	157.22
CLASS	252	COMPOSITIONS	182.1	183.16
			364	366
			625	647
CLASS	264	PLASTIC AND NONMETALLIC ARTICLE SHAPING OR TREATING PROCESSES	3.1	3.6
CLASS	376	INDUCED NUCLEAR REACTIONS, SYSTEMS AND ELEMENTS	ALL	
CLASS	419	POWDER METALLURGY - PROCESSES	ALL	
CLASS	420	ALLOYS OR METALLIC COMPOSITIONS	1	7
CLASS	422	PROCESS DISINFECTING, DEODORIZING, PRESERVING OR STERILIZING, AND CHEMICAL APPARATUS	186	186.3
			904	907
CLASS	423	CHEMISTRY, INORGANIC	2	20
			249	261
CLASS	428	STOCK MATERIAL OR MISCELLANEOUS ARTICLES	539.5	
			546	566

ART UNIT 231

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	340	COMMUNICATIONS, ELECTRICAL	146.2	
CLASS	364	ELECTRICAL COMPUTERS AND DATA PROCESSING SYSTEMS	513.5	
			518	523
			700	788
CLASS	381	ELECTRICAL AUDIO SIGNAL PROCESSING SYSTEMS, AND DEVICES	29	53

ART UNIT 232

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	364	ELECTRICAL COMPUTERS AND DATA PROCESSING SYSTEMS	200	
			900	

ART UNIT 233

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	360	DYNAMIC MAGNETIC INFORMATION STORAGE OR RETRIEVAL	ALL	

			CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
	CLASS	365	STATIC INFORMATION STORAGE AND RETRIEVAL	ALL	
ART UNIT 234					
	CLASS	235	REGISTERS	400	418
	CLASS	364	ELECTRICAL COMPUTERS AND DATA PROCESSING SYSTEMS	423	467
				480	512
				514	517
				524	582
ART UNIT 235					
	CLASS	358	PICTORIAL COMMUNICATION; TELEVISION	244	244.2
				310	348
				906	908
	CLASS	369	DYNAMIC INFORMATION STORAGE OR RETRIEVAL	30	32
				43	54
				58	62
				64	
				69	70
				76	
				86	95
				97	
				100	125
				174	175
				275.1	275.5
ART UNIT 236					
	CLASS	364	ELECTRICAL COMPUTERS AND DATA PROCESSING SYSTEMS	130	194
				400	409
				413.01	413.31
				468	479
				600	608
				800	864
	CLASS	371	ERROR DETECTION/CORRECTION AND FAULT DETECTION/RECOVERY	ALL	
ART UNIT 237					
	CLASS	364	ELECTRICAL COMPUTERS AND DATA PROCESSING SYSTEMS	221	286.6
				916	978.3
ART UNIT 238					
	CLASS	364	ELECTRICAL COMPUTERS AND DATA PROCESSING SYSTEMS	410	412
				419	422
				513	
ART UNIT 239					
	CLASS	235	REGISTERS	375	386
				419	495

			SUBCLASSES	
		CLASS TITLE	FROM	TO
CLASS	369	DYNAMIC INFORMATION STORAGE OR RETRIEVAL	1	29
			33	42
			55	57
			63	
			65	68
			71	75.2
			77.1	85
			96	
			98	99
			126	173
			176	274
			276	292
CLASS	379	TELEPHONIC COMMUNICATIONS	68	87
CLASS	902	ELECTRONIC FUNDS TRANSFER	ALL	

ART UNIT 241

CLASS	150	PURSES, WALLETS, AND PROTECTIVE COVERS	ALL	
CLASS	190	TRUNKS AND HAND CARRIED LUGGAGE	ALL	
CLASS	215	BOTTLES AND JARS	ALL	
CLASS	217	WOODEN RECEPTACLES	ALL	
CLASS	220	RECEPTACLES	ALL	
CLASS	229	ENVELOPES, WRAPPERS AND PAPERBOARD BOXES	ALL	
CLASS	383	FLEXIBLE BAGS	ALL	

ART UNIT 242

CLASS	8	BLEACHING AND DYEING; FLUID TREATMENT AND CHEMICAL MODIFICATION OF TEXTILES AND FIBERS	147	159
CLASS	15	BRUSHING, SCRUBBING AND GENERAL CLEANING	ALL	
CLASS	68	TEXTILES, FLUID TREATING APPARATUS	ALL	
CLASS	99	FOODS AND BEVERAGES: APPARATUS	ALL	
CLASS	100	PRESSES	ALL	
CLASS	134	CLEANING AND LIQUID CONTACT WITH SOLIDS	43	902
CLASS	138	PIPES AND TUBULAR CONDUITS	ALL	
CLASS	366	AGITATING	ALL	

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	494	IMPERFORATE BOWL. CENTRIFUGAL SEPARATORS	ALL	

ART UNIT 243

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	4	BATHS, CLOSETS, SINKS AND SPITTOONS	ALL	
CLASS	141	FLUENT MATERIAL HANDLING, WITH RECEIVER OR RECEIVER COACTING MEANS	ALL	
CLASS	200	ELECTRICITY, CIRCUIT MAKERS AND BREAKERS	42.01	49
			51LM	51.17
			79	
			181	574
CLASS	224	PACKAGE AND ARTICLE CARRIERS	ALL	

ART UNIT 244

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	12	BOOT AND SHOE MAKING	ALL	
CLASS	36	BOOTS, SHOES AND LEGGINGS	ALL	
CLASS	206	SPECIAL RECEPTACLE OR PACKAGE	ALL	

ART UNIT 245

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	57	TEXTILES, SPINNING, TWISTING AND TWINING	ALL	
CLASS	87	TEXTILES, BRAIDING, NETTING AND LACE MAKING	ALL	
CLASS	226	ADVANCING MATERIAL OF INDETERMINATE-LENGTH	ALL	
CLASS	242	WINDING AND REELING	ALL	
CLASS	254	IMPLEMENTS OR APPARATUS FOR APPLYING PUSHING OR PULLING FORCE	199	417
			900	903
			DIG. 11	DIG. 15
CLASS	384	BEARINGS	ALL	
CLASS	464	ROTARY SHAFTS, GUDGEONS, HOUSINGS AND FLEXIBLE COUPLINGS FOR ROTARY SHAFTS	ALL	

ART UNIT 246

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	33	GEOMETRICAL INSTRUMENTS	ALL	
CLASS	73	MEASURING AND TESTING	73	77
			150A	150R
			158	169
			172	

CLASSES ARRANGED BY ART UNIT

		CLASS TITLE	SUBCLASSES	
			FROM	TO
CLASS	73	MEASURING AND TESTING	290B 426	334 429
CLASS	116	SIGNALS AND INDICATORS	ALL	
CLASS	277	JOINT PACKING	ALL	
CLASS	353	OPTICS, IMAGE PROJECTORS	ALL	
CLASS	374	THERMAL MEASURING AND TESTING	ALL	
ART UNIT 247				
CLASS	2	APPAREL	ALL	
CLASS	19	TEXTILES, FIBER PREPARATION	ALL	
CLASS	26	TEXTILES, CLOTH FINISHING	ALL	
CLASS	28	TEXTILES, MANUFACTURING	ALL	
CLASS	38	TEXTILES, IRONING OR SMOOTHING	ALL	
CLASS	66	TEXTILES, KNITTING	ALL	
CLASS	69	LEATHER MANUFACTURES	ALL	
CLASS	112	SEWING	ALL	
CLASS	139	TEXTILES, WEAVING	ALL	
CLASS	223	APPAREL APPARATUS	ALL	
CLASS	289	KNOTS AND KNOT TYING	ALL	
CLASS	450	FOUNDATION GARMENTS	ALL	
ART UNIT 251				
CLASS	307	ELECTRICAL TRANSMISSION OR INTERCONNECTION SYSTEMS	425	430
CLASS	350	OPTICS, SYSTEMS AND ELEMENTS	96.1	96.34
CLASS	372	COHERENT LIGHT GENERATORS	ALL	
ART UNIT 252				
CLASS	307	ELECTRICAL TRANSMISSION OR INTERCONNECTION SYSTEMS	424	
CLASS	315	ELECTRIC LAMP AND DISCHARGE DEVICES, SYSTEMS	1 32 DIG. 1	9 363 DIG. 7
CLASS	329	DEMODULATORS	ALL	

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	330	AMPLIFIERS	1A	3
			4.5	311
CLASS	331	OSCILLATORS	ALL	
CLASS	332	MODULATORS	ALL	
CLASS	333	WAVE TRANSMISSION LINES AND NETWORKS	ALL	
CLASS	334	TUNERS	ALL	
CLASS	350	OPTICS, SYSTEMS AND ELEMENTS	353	363

ART UNIT 254

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	307	ELECTRICAL TRANSMISSION OR INTERCONNECTION SYSTEMS	200.1	325
			350	364
			440	648
CLASS	328	MISCELLANEOUS ELECTRON SPACE DISCHARGE DEVICE SYSTEMS	1	226
			239	271
CLASS	350	OPTICS, SYSTEMS AND ELEMENTS	330	352
CLASS	377	ELECTRICAL PULSE COUNTERS, PULSE DIVIDERS OR SHIFT REGISTERS CIRCUITS AND SYSTEMS	ALL	

ART UNIT 255

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	250	RADIANT ENERGY	200	239
			548	908
CLASS	356	OPTICS, MEASURING AND TESTING	2	3
			4.5	
			6	27
			30	140
			142	151
			153	448

ART UNIT 256

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	250	RADIANT ENERGY	250	526
CLASS	358	PICTORIAL COMMUNICATION; TELEVISION	111	
CLASS	378	X-RAY OR GAMMA RAY SYSTEMS OR DEVICES	ALL	

ART UNIT 257

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	350	OPTICS, SYSTEMS AND ELEMENTS	1.1	3.86
			6.1	6.91
			97	116
			130	257
			266	322

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	350	OPTICS, SYSTEMS AND ELEMENTS	370	642
			DIG. 3	
CLASS	351	OPTICS, EYE EXAMINING, VISION TESTING AND CORRECTING	ALL	
ART UNIT 258				
CLASS	343	COMMUNICATIONS, RADIO WAVE ANTENNAS	ALL	
CLASS	357	ACTIVE SOLID STATE DEVICES, E.G., TRANSISTORS, SOLID STATE DIODES	ALL	
ART UNIT 261				
CLASS	178	TELEGRAPHY	1	36
			38	98
			100	120
CLASS	358	PICTORIAL COMMUNICATION; TELEVISION	85	
CLASS	379	TELEPHONIC COMMUNICATIONS	1	67
			88	457
CLASS	381	ELECTRICAL AUDIO SIGNAL PROCESSING SYSTEMS, AND DEVICES	1	28
			54	205
ART UNIT 262				
CLASS	358	PICTORIAL COMMUNICATION; TELEVISION	1	83
			87	110
			112	243
			305	
			901	905
			909	
ART UNIT 263				
CLASS	370	MULTIPLEX COMMUNICATIONS	5	125
CLASS	375	PULSE OR DIGITAL COMMUNICATIONS	3	122
ART UNIT 264				
CLASS	313	ELECTRIC LAMP AND DISCHARGE DEVICES	ALL	
CLASS	328	MISCELLANEOUS ELECTRON SPACE DISCHARGE DEVICE SYSTEMS	227	238
CLASS	340	COMMUNICATIONS, ELECTRICAL	825	827
			870.01	870.44
CLASS	341	CODED DATA GENERATION OR CONVERSION	20	35
			173	175
			177	192

CLASSES ARRANGED BY ART UNIT

				SUBCLASSES	
			CLASS TITLE	FROM	TO
	CLASS	367	COMMUNICATIONS, ELECTRICAL ACOUSTIC WAVE SYSTEM AND DEVICES	197	199
ART UNIT 265					
	CLASS	73	MEASURING AND TESTING	1DC	10
				19.01	64.4
				66	
				78	132
				148	149
				151	157
				335	338.6
				382G	383
				430	672
				760	860
				863	901
				DIG. 1	DIG. 11
	CLASS	324	ELECTRICITY, MEASURING AND TESTING	76A	91
				300	322
ART UNIT 266					
	CLASS	382	IMAGE ANALYSIS	ALL	
ART UNIT 267					
	CLASS	73	MEASURING AND TESTING	11	14
				65	
				146	147
				170A	171
				178H	281
				379	381
				384	387
				700	756
				861	862.69
	CLASS	324	ELECTRICITY, MEASURING AND TESTING	66	75
				92	263
				323	800
	CLASS	358	PICTORIAL COMMUNICATION; TELEVISION	84	
				86	
	CLASS	370	MULTIPLEX COMMUNICATIONS	1	4
	CLASS	455	TELECOMMUNICATIONS	1	25
				31	620
ART UNIT 268					
	CLASS	340	COMMUNICATIONS, ELECTRICAL	286.01	693
				901	996
	CLASS	341	CODED DATA GENERATION OR CONVERSION	176	

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	358	PICTORIAL COMMUNICATION; TELEVISION	245	262.1
			400	498
CLASS	367	COMMUNICATIONS, ELECTRICAL: ACOUSTIC WAVE SYSTEM AND DEVICES	93	94
ART UNIT 269				
CLASS	340	COMMUNICATIONS, ELECTRICAL	700	815.33
ART UNIT 291				
CLASS	D 4	BRUSHWARE (1)	ALL	
CLASS	D 6	FURNISHINGS	354	
			512	574
			595	625
CLASS	D 8	TOOLS AND HARDWARE	1	13
			330	349
			354	381
			DIG. 1	DIG. 10
CLASS	D10	MEASURING, TESTING OR SIGNALLING INSTRUMENTS (1) (2)	104	121
CLASS	D11	JEWELRY, SYMBOLIC INSIGNIA AND ORNAMENTS	130.1	
			143	156
CLASS	D12	TRANSPORTATION (1)	ALL	
CLASS	D13	EQUIPMENT FOR PRODUCTION, DISTRIBUTION OR TRANSFORMATION OF ENERGY (1)	ALL	
CLASS	D14	RECORDING, COMMUNICATION OR INFORMATION RETRIEVAL EQUIPMENT	100	117
			138	153
			240	256
CLASS	D16	PHOTOGRAPHY AND OPTICAL EQUIPMENT	130	137
CLASS	D19	OFFICE SUPPLIES,ARTISTS' AND TEACHERS' MATERIALS	1	34.5
			59	64
CLASS	D20	SALES AND ADVERTISING EQUIPMENT	10	
			12	21
			29	99
CLASS	D21	GAMES, TOYS, AND SPORTS GOODS	228	231
			236	239
CLASS	D22	ARMS, PYROTECHNICS, HUNTING, FISHING, AND TRAPPING EQUIPMENT	ALL	

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	D23	ENVIRONMENTAL HEATING AND COOLING, FLUID HANDLING AND SANITARY EQUIPMENT	200	232
			314	499
CLASS	D24	MEDICAL AND LABORATORY EQUIPMENT	4	5
			10	16
			68	
CLASS	D25	BUILDING UNITS AND CONSTRUCTION ELEMENTS	ALL	
CLASS	D26	LIGHTING (1)	ALL	
CLASS	D27	TOBACCO AND SMOKERS' SUPPLIES	ALL	
CLASS	D28	PHARMACEUTICAL, COSMETIC PRODUCTS, AND TOILET ARTICLES	1	3
			63	64
CLASS	D32	WASHING, CLEANING, OR DRYING MACHINE	35	75
CLASS	D34	MATERIAL OR ARTICLE HANDLING EQUIPMENT (1)	1	38

ART UNIT 292

CLASS	D 2	APPAREL AND HABERDASHERY	1	229
			264	328
CLASS	D 6	FURNISHINGS	300	328
			403	405
CLASS	D 7	EQUIPMENT FOR PREPARING OR SERVING FOOD OR DRINK NOT ELSEWHERE SPECIFIED	300.1	300.2
			392.1	
			396.1	396.6
			401.1	401.2
			500	700
CLASS	D 8	TOOLS AND HARDWARE	18	
			33	43
			48	50
			57	
			102	104
			300	329
			350	353
			382	499
CLASS	D 9	PACKAGES AND CONTAINERS FOR GOODS (1)	ALL	
CLASS	D10	MEASURING, TESTING OR SIGNALLING INSTRUMENTS (1) (2)	46.1	46.3
CLASS	D11	JEWELRY, SYMBOLIC INSIGNIA AND ORNAMENTS	1	130
			131	142
			157	241

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	D14	RECORDING, COMMUNICATION OR INFORMATION RETRIEVAL EQUIPMENT	118	137
			154	239
			257	299
CLASS	D15	MACHINES, NOT ELSEWHERE SPECIFIED	10	91
CLASS	D16	PHOTOGRAPHY AND OPTICAL EQUIPMENT	200	236
CLASS	D17	MUSICAL INSTRUMENTS	ALL	
CLASS	D20	SALES AND ADVERTISING EQUIPMENT	11	
			22	28
CLASS	D21	GAMES, TOYS, AND SPORTS GOODS	1	227
			232	235
			240	255
CLASS	D28	PHARMACEUTICAL, COSMETIC PRODUCTS, AND TOILET ARTICLES	4	62
			64.1	99
CLASS	D34	MATERIAL OR ARTICLE HANDLING EQUIPMENT (1)	39	46
ART UNIT 293				
CLASS	D 1	EDIBLE PRODUCTS	ALL	
CLASS	D 2	APPAREL AND HABERDASHERY	244	263
			329	699
CLASS	D 3	TRAVEL GOODS AND PERSONAL BELONGINGS	ALL	
CLASS	D 5	TEXTILE, OR PAPER YARD GOODS; SHEET MATERIAL (1)	ALL	
CLASS	D 6	FURNISHINGS	329	353
			355	402
			406	511
			575	594
CLASS	D 7	EQUIPMENT FOR PREPARING OR SERVING FOOD OR DRINK NOT ELSEWHERE SPECIFIED	213	300
			301	322
			325	330
			352	361
			376	392
			393	396
			397	401
			409	417
CLASS	D 8	TOOLS AND HARDWARE	14	17
			19	32
			44	47
			51	56
			58	101
			105	107

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	D10	MEASURING, TESTING OR SIGNALLING INSTRUMENTS (1) (2)	1	46
			47	103
			122	132
CLASS	D15	MACHINES, NOT ELSEWHERE SPECIFIED	122	199
CLASS	D16	PHOTOGRAPHY AND OPTICAL EQUIPMENT	100	129
			237	250
CLASS	D18	PRINTING AND OFFICE MACHINERY	1	12
			36	45
CLASS	D19	OFFICE SUPPLIES,ARTISTS' AND TEACHERS' MATERIALS	35	58
			65	100
CLASS	D20	SALES AND ADVERTISING EQUIPMENT	1	9
CLASS	D23	ENVIRONMENTAL HEATING AND COOLING, FLUID HANDLING AND SANITARY EQUIPMENT	233	313
CLASS	D29	DEVICES AND EQUIPMENT AGAINST FIRE HAZARDS, FOR ACCIDENT PREVENTION AND FOR RESCUE	ALL	
CLASS	D30	ANIMAL HUSBANDRY	ALL	
CLASS	D32	WASHING, CLEANING, OR DRYING MACHINE	1	34
CLASS	D99	MISCELLANEOUS	1	16
			25	99

ART UNIT 294

CLASS	D 7	EQUIPMENT FOR PREPARING OR SERVING FOOD OR DRINK NOT ELSEWHERE SPECIFIED	323	324
			331	351
			362	375
			402	408
CLASS	D15	MACHINES, NOT ELSEWHERE SPECIFIED	1	9.3
CLASS	D18	PRINTING AND OFFICE MACHINERY	13	35
			99	
CLASS	D24	MEDICAL AND LABORATORY EQUIPMENT	1.1	3
			6	9
			17	67
			99	
CLASS	D99	MISCELLANEOUS	17	24

ART UNIT 311

CLASS	187	ELEVATORS	1A	2
			4	28
			30	98

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	187	ELEVATORS	DIG. 1	
CLASS	193	CONVEYERS, CHUTES, SKIDS, GUIDES AND WAYS	ALL	
CLASS	198	CONVEYERS, POWER-DRIVEN	ALL	
CLASS	221	ARTICLE DISPENSING	ALL	
CLASS	258	RAILWAY MAIL DELIVERY	ALL	
CLASS	271	SHEET FEEDING OR DELIVERING	ALL	
CLASS	278	LAND VEHICLES, ANIMAL DRAFT APPLIANCES	ALL	

ART UNIT 312

CLASS	152	RESILIENT TIRES AND WHEELS	1	112
			323	329
			375	414
			DIG. 8	
			DIG. 10	
			DIG. 17	
			DIG. 20	
CLASS	209	CLASSIFYING, SEPARATING AND ASSORTING SOLIDS	1	161
			171	942
CLASS	293	VEHICLE FENDERS	ALL	
CLASS	294	HANDLING, HAND AND HOIST-LINE IMPLEMENTS	ALL	
CLASS	295	RAILWAY WHEELS AND AXLES	ALL	
CLASS	296	LAND VEHICLES, BODIES AND TOPS	ALL	
CLASS	301	LAND VEHICLES, WHEELS AND AXLES	ALL	
CLASS	305	WHEEL SUBSTITUTES FOR LAND VEHICLES	ALL	

ART UNIT 313

CLASS	104	RAILWAYS	ALL	
CLASS	105	RAILWAY ROLLING STOCK	ALL	
CLASS	188	BRAKES	ALL	
CLASS	213	RAILWAY DRAFT APPLIANCES	ALL	
CLASS	267	SPRING DEVICES	ALL	
CLASS	303	FLUID-PRESSURE BRAKE AND ANALOGOUS SYSTEMS	ALL	

CLASSES ARRANGED BY ART UNIT

			SUBCLASSES	
		CLASS TITLE	FROM	TO
ART UNIT 314				
CLASS	222	DISPENSING	1	589
			608	628
			630	652
			DIG. 1	
CLASS	239	FLUID SPRINKLING, SPRAYING AND DIFFUSING	ALL	
ART UNIT 315				
CLASS	114	SHIPS	1	19
			26	381
CLASS	169	FIRE EXTINGUISHERS	ALL	
CLASS	212	TRAVERSING HOISTS	ALL	
CLASS	244	AERONAUTICS	1TD	3
			4A	13
			15	905
CLASS	406	CONVEYORS, FLUID CURRENT	ALL	
CLASS	440	MARINE PROPULSION	ALL	
CLASS	441	BUOYS,RAFTS, AND AQUATIC DEVICES	ALL	
ART UNIT 316				
CLASS	180	MOTOR VEHICLES	ALL	
CLASS	280	LAND VEHICLES	ALL	
ART UNIT 317				
CLASS	186	MERCHANDISING	ALL	
CLASS	191	ELECTRICITY, TRANSMISSION TO VEHICLES	ALL	
CLASS	194	CHECK-ACTUATED CONTROL MECHANISMS	ALL	
CLASS	238	RAILWAYS, SURFACE TRACK	ALL	
CLASS	246	RAILWAY SWITCHES AND SIGNALS	ALL	
CLASS	291	TRACK SANDERS	ALL	
CLASS	298	LAND VEHICLES, DUMPING	ALL	
CLASS	410	FREIGHT ACCOMMODATION ON FREIGHT CARRIER	ALL	

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	414	MATERIAL OR ARTICLE HANDLING	ALL	
CLASS	453	COIN HANDLING	ALL	
CLASS	901	ROBOTS	ALL	

ART UNIT 321

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	10	BOLT, NAIL, NUT, RIVET AND SCREW MAKING	ALL	
CLASS	53	PACKAGE MAKING	ALL	
CLASS	59	CHAIN, STAPLE AND HORSESHOE MAKING	ALL	
CLASS	72	METAL DEFORMING	ALL	
CLASS	140	WIREWORKING	ALL	
CLASS	144	WOODWORKING	ALL	

ART UNIT 322

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	29	METAL WORKING	560	568
			650	
CLASS	279	CHUCKS OR SOCKETS	ALL	
CLASS	408	CUTTING BY USE OF ROTATING AXIALLY MOVING TOOL	ALL	
CLASS	409	GEAR CUTTING, MILLING, OR PLANING	ALL	
CLASS	439	ELECTRICAL CONNECTORS	ALL	

ART UNIT 323

		CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO
CLASS	7	COMPOUND TOOLS	ALL	
CLASS	29	METAL WORKING	78	80
			90.01	90.7
			213.1	243.51
			243.53	283.5
CLASS	30	CUTLERY	167	167.2
			308.1	308.3
			451	495
			501	525
CLASS	51	ABRADING	1	292
			310	439
			DIG. 1	DIG. 34
CLASS	76	METAL TOOLS AND IMPLEMENTS, MAKING	ALL	
CLASS	81	TOOLS	ALL	

			SUBCLASSES	
		CLASS TITLE	FROM	TO
CLASS	82	TURNING	ALL	
CLASS	125	STONE WORKING	ALL	
CLASS	142	WOOD TURNING	ALL	
CLASS	157	WHEELWRIGHT MACHINES	ALL	
CLASS	254	IMPLEMENTS OR APPARATUS FOR APPLYING PUSHING OR PULLING FORCE	1	134.7
			418	427
			DIG. 1	DIG. 10
			DIG. 16	
CLASS	269	WORK HOLDERS	ALL	
CLASS	407	CUTTERS, FOR SHAPING	ALL	
CLASS	413	SHEET METAL CONTAINER MAKING	ALL	
CLASS	452	BUTCHERING	ALL	
CLASS	493	MANUFACTURING CONTAINER OR TUBE FROM PAPER; OR OTHER MANUFACTURING FROM A SHEET OR WEB	ALL	

ART UNIT 324

CLASS	30	CUTLERY	1	166.3
			168	308
			309	450
			500	
			DIG. 1	DIG. 8
CLASS	83	CUTTING	ALL	
CLASS	173	TOOL DRIVING OR IMPACTING	ALL	
CLASS	225	SEVERING BY TEARING OR BREAKING	ALL	
CLASS	227	ELONGATED-MEMBER-DRIVING APPARATUS	ALL	
CLASS	234	SELECTIVE CUTTING (E.G., PUNCHING)	ALL	
CLASS	281	BOOKS, STRIPS AND LEAVES	ALL	
CLASS	282	MANIFOLDING	ALL	
CLASS	283	PRINTED MATTER	ALL	
CLASS	402	BINDER DEVICE RELEASABLY ENGAGING APERTURE OR NOTCH OF SHEET	ALL	
CLASS	412	BOOKBINDING: PROCESS AND APPARATUS	ALL	

CLASSES ARRANGED BY ART UNIT

		CLASS TITLE	SUBCLASSES FROM	 TO
ART UNIT 325				
CLASS	16	MISCELLANEOUS HARDWARE	ALL	
CLASS	43	FISHING, TRAPPING AND VERMIN DESTROYING	ALL	
CLASS	164	METAL FOUNDING	ALL	
CLASS	228	METAL FUSION BONDING	ALL	
CLASS	445	ELECTRIC LAMP OR SPACE DISCHARGE COMPONENT OR DEVICE MANUFACTURING	ALL	
ART UNIT 326				
CLASS	29	METAL WORKING	1.01	1.32
			2.1	25
			25.35	77
			81.01	89.5
			91	179
			243.517	243.529
			400.1	559
			592.1	623
			631	631.1
			700	729
			732	906
			DIG. 1	DIG.105
CLASS	79	BUTTON MAKING	ALL	
CLASS	147	COOPERING	ALL	
CLASS	163	NEEDLE AND PIN MAKING	ALL	
CLASS	241	SOLID MATERIAL COMMINUTION OR DISINTEGRATION	ALL	
CLASS	245	WIRE FABRICS AND STRUCTURE	ALL	
CLASS	300	BRUSH, BROOM AND MOP MAKING	ALL	
ART UNIT 331				
CLASS	128	SURGERY	32	67
			82	126.1
			830	894
CLASS	401	COATING IMPLEMENTS WITH MATERIAL SUPPLY	ALL	
CLASS	446	AMUSEMENT DEVICES, TOYS	ALL	
CLASS	604	SURGERY	403	416

CLASSES ARRANGED BY ART UNIT

ART UNIT 332

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	128	SURGERY	24A	31
			68	78
			80DB	81R
			581	623
CLASS	131	TOBACCO	ALL	
CLASS	272	AMUSEMENT AND EXERCISING DEVICES	61	78
			93	903
			DIG. 1	DIG. 9
CLASS	434	EDUCATION AND DEMONSTRATION	11	433

ART UNIT 333

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	54	HARNESS	ALL	
CLASS	119	ANIMAL HUSBANDRY	ALL	
CLASS	128	SURGERY	79	
CLASS	132	TOILET	ALL	
CLASS	168	FARRIERY	ALL	
CLASS	231	WHIPS AND WHIP APPARATUS	ALL	
CLASS	433	DENTISTRY	ALL	
CLASS	449	BEE CULTURE	ALL	

ART UNIT 334

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	128	SURGERY	362	403
CLASS	273	AMUSEMENT DEVICES, GAMES	ALL	

ART UNIT 335

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	128	SURGERY	1.6	
			24AA	24EL
			419PG	424
			630	641
			653AF	730
			783	804
			897	908
			915	919
			DIG. 1	DIG. 19
			DIG. 21	DIG. 22
			DIG. 24	DIG. 25
			DIG. 27	
CLASS	600	SURGERY	1	28

CLASSES ARRANGED BY ART UNIT

ART UNIT 336

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	604	SURGERY	27	56
			80	284
			890.1	906
CLASS	606	SURGERY	159	211

ART UNIT 337

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	101	PRINTING	ALL	
CLASS	128	SURGERY	200.11	207.29
			909	914
			DIG. 20	
			DIG. 23	
			DIG. 26	
CLASS	199	TYPE CASTING	ALL	
CLASS	276	TYPE SETTING	ALL	
CLASS	400	TYPEWRITING MACHINES	ALL	

ART UNIT 338

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	128	SURGERY	155	171
			645	652
CLASS	600	SURGERY	29	37
CLASS	604	SURGERY	1	18
			304	402
CLASS	623	PROSTHESIS (I.E., ARTIFICIAL BODY MEMBERS), PARTS THEREOF OR AIDS AND ACCESSORIES THEREFOR	ALL	

ART UNIT 339

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	128	SURGERY	3	23
			731	782
CLASS	604	SURGERY	19	26
			57	79
			285	303
CLASS	606	SURGERY	1	158
			212	236

ART UNIT 341

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	60	POWER PLANTS	325	494
			532	594
CLASS	91	MOTORS, EXPANSIBLE CHAMBER TYPE	1	471
			508	536

			SUBCLASSES	
		CLASS TITLE	FROM	TO
CLASS	91	MOTORS, EXPANSIBLE CHAMBER TYPE	DIG. 1	DIG. 4
CLASS	92	EXPANSIBLE CHAMBER DEVICES	ALL	
CLASS	270	SHEET-MATERIAL ASSOCIATING	ALL	
CLASS	415	ROTARY KINETIC FLUID MOTORS OR PUMPS	ALL	
CLASS	416	FLUID REACTION SURFACES (I.E., IMPELLERS)	ALL	
ART UNIT 342				
CLASS	60	POWER PLANTS	632	638
CLASS	123	INTERNAL-COMBUSTION ENGINES	1A	3
			19	42
			46SC	198R
			250	558
			567	671
			DIG. 1	DIG. 13
ART UNIT 343				
CLASS	60	POWER PLANTS	39.01	204
			221	271
			597	624
			722	917
CLASS	91	MOTORS, EXPANSIBLE CHAMBER TYPE	472	507
CLASS	123	INTERNAL-COMBUSTION ENGINES	18A	18R
			43AA	44R
			200	249
			559.1	566
CLASS	417	PUMPS	ALL	
CLASS	418	ROTARY EXPANSIBLE CHAMBER DEVICES	ALL	
ART UNIT 344				
CLASS	34	DRYING AND GAS OR VAPOR CONTACT WITH SOLIDS	ALL	
CLASS	62	REFRIGERATION	ALL	
CLASS	98	VENTILATION	ALL	
CLASS	110	FURNACES	ALL	
CLASS	122	LIQUID HEATERS AND VAPORIZERS	ALL	
CLASS	236	AUTOMATIC TEMPERATURE AND HUMIDITY REGULATION	ALL	
CLASS	237	HEATING SYSTEMS	ALL	

			SUBCLASSES	
		CLASS TITLE	FROM	TO
CLASS	432	HEATING	ALL	
ART UNIT 346				
CLASS	60	POWER PLANTS	272	324
			495	531
			595	596
			625	631
			639	721
CLASS	123	INTERNAL-COMBUSTION ENGINES	45A	45R
CLASS	126	STOVES AND FURNACES	ALL	
CLASS	184	LUBRICATION	ALL	
CLASS	362	ILLUMINATION	ALL	
CLASS	431	COMBUSTION	ALL	
ART UNIT 347				
CLASS	137	FLUID HANDLING	ALL	
CLASS	165	HEAT EXCHANGE	ALL	
CLASS	251	VALVES AND VALVE ACTUATION	ALL	
ART UNIT 351				
CLASS	37	EXCAVATING	ALL	
CLASS	111	PLANTING	ALL	
CLASS	124	MECHANICAL GUNS AND PROJECTORS	ALL	
CLASS	171	UNEARTHING PLANTS OR BURIED OBJECTS	ALL	
CLASS	172	EARTH WORKING	ALL	
CLASS	256	FENCES	ALL	
CLASS	285	PIPE JOINTS OR COUPLINGS	ALL	
CLASS	403	JOINTS AND CONNECTIONS	ALL	
CLASS	405	HYDRAULIC AND EARTH ENGINEERING	ALL	
ART UNIT 352				
CLASS	74	MACHINE ELEMENTS AND MECHANISMS	ALL	
CLASS	185	MOTORS, SPRING, WEIGHT AND ANIMAL POWERED	ALL	
CLASS	192	CLUTCHES AND POWER-STOP CONTROL	ALL	

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	475	PLANETARY GEAR TRANSMISSION SYSTEMS AND COMPONENTS	ALL	
ART UNIT 354				
CLASS	27	UNDERTAKING	ALL	
CLASS	47	PLANT HUSBANDRY	1.01 1.41 66 DIG. 3 DIG. 10	 57.5 901 DIG. 6 DIG. 12
CLASS	52	STATIC STRUCTURES, E.G., BUILDINGS	ALL	
CLASS	135	TENTS, CANOPIES, UMBRELLAS AND CANES	ALL	
CLASS	272	AMUSEMENT AND EXERCISING DEVICES	1A 85	56.5R 92
ART UNIT 355				
CLASS	160	CLOSURES, PARTITIONS AND PANELS, FLEXIBLE AND PORTABLE	ALL	
CLASS	182	FIRE ESCAPES, LADDERS, SCAFFOLDS	ALL	
CLASS	211	SUPPORTS, RACKS	ALL	
CLASS	232	DEPOSIT AND COLLECTION RECEPTACLES	ALL	
CLASS	248	SUPPORTS	ALL	
ART UNIT 356				
CLASS	14	BRIDGES	ALL	
CLASS	56	HARVESTERS	ALL	
CLASS	166	WELLS	ALL	
CLASS	175	BORING OR PENETRATING THE EARTH	ALL	
CLASS	299	MINING OR IN SITU DISINTEGRATION OF HARD MATERIAL	ALL	
CLASS	404	ROAD STRUCTURE, PROCESS AND APPARATUS	ALL	
CLASS	460	CROP THRESHING OR SEPARATING	ALL	
CLASS	474	ENDLESS BELT POWER TRANSMISSION SYSTEMS AND COMPONENTS	ALL	
ART UNIT 357				
CLASS	24	BUCKLES, BUTTONS, CLASPS, ETC.	ALL	

CLASSES ARRANGED BY ART UNIT

		CLASS TITLE	SUBCLASSES FROM	TO
CLASS	40	CARD, PICTURE AND SIGN EXHIBITING	ALL	
CLASS	63	JEWELRY	ALL	
CLASS	108	HORIZONTALLY SUPPORTED PLANAR SURFACES	ALL	
CLASS	297	CHAIRS AND SEATS	ALL	
CLASS	312	SUPPORTS, CABINET STRUCTURES	ALL	

ART UNIT 358

CLASS	5	BEDS	ALL	
CLASS	49	MOVABLE OR REMOVABLE CLOSURES	ALL	
CLASS	70	LOCKS	ALL	
CLASS	109	SAFES, BANK PROTECTION AND RELATED DEVICES	ALL	
CLASS	292	CLOSURE FASTENERS	ALL	
CLASS	411	EXPANDED, THREADED, DRIVEN, HEADED, TOOL-DEFORMED, OR LOCKED-THREADED FASTENER	ALL	

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
D 1	EDIBLE PRODUCTS	ALL		293	6-11E03
D 2	APPAREL AND HABERDASHERY	1	229	292	6-11E03
		244	263	293	6-11E03
		264	328	292	6-11E03
		329	699	293	6-11E03
D 3	TRAVEL GOODS AND PERSONAL BELONGINGS	ALL		293	6-11E03
D 4	BRUSHWARE (1)	ALL		291	6-11E03
D 5	TEXTILE, OR PAPER YARD GOODS; SHEET MATERIAL (1)	ALL		293	6-11E03
D 6	FURNISHINGS	300	328	292	6-11E03
		329	353	293	6-11E03
		354		291	6-11E03
		355	402	293	6-11E03
		403	405	292	6-11E03
		406	511	293	6-11E03
		512	574	291	6-11E03
		575	594	293	6-11E03
		595	625	291	6-11E03
D 7	EQUIPMENT FOR PREPARING OR SERVING FOOD OR DRINK NOT ELSEWHERE SPECIFIED	213	300	293	6-11E03
		300.1	300.2	292	6-11E03
		301	322	293	6-11E03
		323	324	294	6-11E03
		325	330	293	6-11E03
		331	351	294	6-11E03
		352	361	293	6-11E03
		362	375	294	6-11E03
		376	392	293	6-11E03
		392.1		292	6-11E03
		393	396	293	6-11E03
		396.1	396.6	292	6-11E03
		397	401	293	6-11E03
		401.1	401.2	292	6-11E03
		402	408	294	6-11E03
		409	417	293	6-11E03
		500	700	292	6-11E03
D 8	TOOLS AND HARDWARE	1	13	291	6-11E03
		14	17	293	6-11E03
		18		292	6-11E03
		19	32	293	6-11E03
		33	43	292	6-11E03
		44	47	293	6-11E03
		48	50	292	6-11E03
		51	56	293	6-11E03
		57		292	6-11E03
		58	101	293	6-11E03
		102	104	292	6-11E03
		105	107	293	6-11E03
		300	329	292	6-11E03
		330	349	291	6-11E03
		350	353	292	6-11E03

Note: Groups 120, 150, 180, 310, and portions of 240 have currently been relocated.

New locations will be indicated on this report as soon as they become available.

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
D 8	TOOLS AND HARDWARE	354	381	291	6-11E03
		382	499	292	6-11E03
		DIG. 1	DIG. 10	291	6-11E03
D 9	PACKAGES AND CONTAINERS FOR GOODS (1)	ALL		292	6-11E03
D10	MEASURING, TESTING OR SIGNALLING INSTRUMENTS (1) (2)	1	46	293	6-11E03
		46.1	46.3	292	6-11E03
		47	103	293	6-11E03
		104	121	291	6-11E03
		122	132	293	6-11E03
D11	JEWELRY, SYMBOLIC INSIGNIA AND ORNAMENTS	1	130	292	6-11E03
		130.1		291	6-11E03
		131	142	292	6-11E03
		143	156	291	6-11E03
		157	241	292	6-11E03
D12	TRANSPORTATION (1)	ALL		291	6-11E03
D13	EQUIPMENT FOR PRODUCTION, DISTRIBUTION OR TRANSFORMATION OF ENERGY (1)	ALL		291	6-11E03
D14	RECORDING, COMMUNICATION OR INFORMATION RETRIEVAL EQUIPMENT	100	117	291	6-11E03
		118	137	292	6-11E03
		138	153	291	6-11E03
		154	239	292	6-11E03
		240	256	291	6-11E03
		257	299	292	6-11E03
D15	MACHINES, NOT ELSEWHERE SPECIFIED	1	9.3	294	6-11E03
		10	91	292	6-11E03
		122	199	293	6-11E03
D16	PHOTOGRAPHY AND OPTICAL EQUIPMENT	100	129	293	6-11E03
		130	137	291	6-11E03
		200	236	292	6-11E03
		237	250	293	6-11E03
D17	MUSICAL INSTRUMENTS	ALL		292	6-11E03
D18	PRINTING AND OFFICE MACHINERY	1	12	293	6-11E03
		13	35	294	6-11E03
		36	45	293	6-11E03
		99		294	6-11E03
D19	OFFICE SUPPLIES, ARTISTS' AND TEACHERS' MATERIALS	1	34.5	291	6-11E03
		35	58	293	6-11E03
		59	64	291	6-11E03
		65	100	293	6-11E03
D20	SALES AND ADVERTISING EQUIPMENT	1	9	293	6-11E03
		10		291	6-11E03
		11		292	6-11E03
		12	21	291	6-11E03
		22	28	292	6-11E03

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
D20	SALES AND ADVERTISING EQUIPMENT	29	99	291	6-11E03
D21	GAMES, TOYS, AND SPORTS GOODS	1	227	292	6-11E03
		228	231	291	6-11E03
		232	235	292	6-11E03
		236	239	291	6-11E03
		240	255	292	6-11E03
D22	ARMS, PYROTECHNICS, HUNTING, FISHING, AND TRAPPING EQUIPMENT	ALL		291	6-11E03
D23	ENVIRONMENTAL HEATING AND COOLING, FLUID HANDLING AND SANITARY EQUIPMENT	200	232	291	6-11E03
		233	313	293	6-11E03
		314	499	291	6-11E03
D24	MEDICAL AND LABORATORY EQUIPMENT	1.1	3	294	6-11E03
		4	5	291	6-11E03
		6	9	294	6-11E03
		10	16	291	6-11E03
		17	67	294	6-11E03
		68		291	6-11E03
		99		294	6-11E03
D25	BUILDING UNITS AND CONSTRUCTION ELEMENTS	ALL		291	6-11E03
D26	LIGHTING (1)	ALL		291	6-11E03
D27	TOBACCO AND SMOKERS' SUPPLIES	ALL		291	6-11E03
D28	PHARMACEUTICAL, COSMETIC PRODUCTS, AND TOILET ARTICLES	1	3	291	6-11E03
		4	62	292	6-11E03
		63	64	291	6-11E03
		64.1	99	292	6-11E03
D29	DEVICES AND EQUIPMENT AGAINST FIRE HAZARDS, FOR ACCIDENT PREVENTION AND FOR RESCUE	ALL		293	6-11E03
D30	ANIMAL HUSBANDRY	ALL		293	6-11E03
D32	WASHING, CLEANING, OR DRYING MACHINE	1	34	293	6-11E03
		35	75	291	6-11E03
D34	MATERIAL OR ARTICLE HANDLING EQUIPMENT (1)	1	38	291	6-11E03
		39	46	292	6-11E03
D99	MISCELLANEOUS	1	16	293	6-11E03
		17	24	294	6-11E03
		25	99	293	6-11E03
PLT	PLANTS	ALL		184	2-10C13
2	APPAREL	ALL		247	4- 6D14
4	BATHS, CLOSETS, SINKS AND SPITTOONS	ALL		243	4- 7D36

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	TO	ART UNIT	SEARCH ROOM
5	BEDS	ALL		358	34- 3D70
7	COMPOUND TOOLS	ALL		323	3- 7C17
8	BLEACHING AND DYEING; FLUID TREATMENT AND CHEMICAL MODIFICATION OF TEXTILES AND FIBERS	94 10	94 1P	119	3-10C19
		94 1R		115	3-10C19
		94 11	127 6	119	3-10C19
		128 1	128 3	115	3-10C19
		129	142	119	3-10C19
		147	159	242	4- 7D14
		160	939	115	3-10C19
		DIG 1	DIG 21	115	3-10C19
10	BOLT, NAIL, NUT, RIVET AND SCREW MAKING	ALL		321	3- 7C17
12	BOOT AND SHOE MAKING	ALL		244	4- 7C17
14	BRIDGES	ALL		356	3- 3C06
15	BRUSHING, SCRUBBING AND GENERAL CLEANING	ALL		242	4- 7D14
16	MISCELLANEOUS HARDWARE	ALL		325	3- 7C30
19	TEXTILES, FIBER PREPARATION	ALL		247	4- 6D14
23	CHEMISTRY, PHYSICAL PROCESSES	ALL		113	3- 9D24
24	BUCKLES, BUTTONS, CLASPS, ETC	1	572	357	34- 3D68
		573 1	573 7	357	34- 3D70
		575	578	357	34- 3D68
		579 1		357	34- 3D70
		580	597	357	34- 3D68
		598 1	601 9	357	34- 3D70
		602	696	357	34- 3D68
		697 1	698 3	357	34- 3D70
		700	715 7	357	34- 3D68
		716		357	34- 3D70
		900	904	357	34- 3D68
		905	908	357	34- 3D70
		DIG 8	DIG 29	357	34- 3D68
26	TEXTILES, CLOTH FINISHING	ALL		247	4- 6D14
27	UNDERTAKING	ALL		354	3- 2C33
28	TEXTILES, MANUFACTURING	ALL		247	4- 6D14
29	METAL WORKING	1 01	1 32	326	3- 7C23
		2		114	3-10D22
		2 1	25	326	3- 7C23
		25 01		117	3- 7C23
		25 02	25 03	117	3- 7D30
		25 35	77	326	3- 7C23
		78	80	323	3- 7C23
		81 01	89 5	326	3- 7C23
		90 01	90 7	323	3- 7C23

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
29	METAL WORKING	91	179	326	3- 7C23
		213.1	243.51	323	3- 7C23
		243.517	243.529	326	3- 7D24
		243.53	283.5	323	3- 7C23
		400.1	559	326	3- 7C23
		560	568	322	3- 7C23
		592.1	623	326	3- 7C23
		623.1	623.5	114	3-10C17
		631	631.1	326	3- 7C23
		650		322	3- 7C23
		700	729	326	3- 7C23
		730	731	114	3-10D22
		732	810	326	3- 7C23
		811.2		326	3- 7D24
		812		326	3- 7C23
		812.5		326	3- 7D24
		813	906	326	3- 7C23
		DIG. 1	DIG. 105	326	3- 7C23
30	CUTLERY	1	166.3	324	3- 6C04
		167	167.2	323	3- 6C04
		168	308	324	3- 6C04
		308.1	308.3	323	3- 6C04
		309	450	324	3- 6C04
		451	495	323	3- 7C30
		500		324	3- 6C04
		501	525	323	3- 7C30
		DIG. 1	DIG. 8	324	3- 6C04
33	GEOMETRICAL INSTRUMENTS	ALL		246	4- 7C23
34	DRYING AND GAS OR VAPOR CONTACT WITH SOLIDS	ALL		344	4- 3C33
36	BOOTS, SHOES AND LEGGINGS	ALL		244	4- 7C17
37	EXCAVATING	ALL		351	3- 3C06
38	TEXTILES, IRONING OR SMOOTHING	ALL		247	4- 6D14
40	CARD, PICTURE AND SIGN EXHIBITING	ALL		357	34- 3D68
42	FIREARMS	ALL		221	3-11B29
43	FISHING, TRAPPING AND VERMIN DESTROYING	ALL		325	3- 6D04
44	FUEL AND RELATED COMPOSITIONS	ALL		119	3-10B15
47	PLANT HUSBANDRY	1.01		354	3- 2C33
		1.1	1.4	184	2-10C13
		1.41	57.5	354	3- 2C33
		57.6	58	184	2-10C13
		59	65	184	3- 2C33
		66	901	354	3- 2C33
		DIG. 1		184	2-10C13
		DIG. 3	DIG. 6	354	3- 2C33
		DIG. 8	DIG. 9	184	2-10C13

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
47	PLANT HUSBANDRY	DIG. 10	DIG. 12	354	3- 2C33
48	GAS, HEATING AND ILLUMINATING	ALL		133	3- 9C04
49	MOVABLE OR REMOVABLE CLOSURES	ALL		358	3- 4C10
51	ABRADING	1	292	323	3- 7C30
		293	309	118	3-10C17
		310	439	323	3- 7C30
		DIG. 1	DIG. 34	323	3- 7C30
52	STATIC STRUCTURES, E.G., BUILDINGS	ALL		354	3- 2C33
53	PACKAGE MAKING	ALL		321	3- 7C14
54	HARNESS	ALL		333	34- 3D68
55	GAS SEPARATION	ALL		135	3- 8B19
56	HARVESTERS	ALL		356	3- 3C06
57	TEXTILES, SPINNING, TWISTING AND TWINING	ALL		245	4- 7B31
59	CHAIN, STAPLE AND HORSESHOE MAKING	ALL		321	3- 7E09
60	POWER PLANTS	39.01	39.59	343	4- 3C10
		39.6	39.63	343	4- 3C18
		39.64	204	343	4- 3C10
		205	220	224	3-11C28
		221	271	343	4- 3C10
		272	324	346	4- 2C08
		325	494	341	4- 3D08
		495	531	346	4- 2C08
		532	594	341	4- 3D08
		595	596	346	4- 2C08
		597	624	343	4- 2C08
		625	631	346	4- 2C08
		632	638	342	4- 2C08
		639	721	346	4- 2C08
		722	902	343	4- 3C10
		903	917	343	4- 3D08
62	REFRIGERATION	ALL		344	4- 3C33
63	JEWELRY	ALL		357	34- 3D68
65	GLASS MANUFACTURING	ALL		133	3- 9C32
66	TEXTILES, KNITTING	ALL		247	4- 6D14
68	TEXTILES, FLUID TREATING APPARATUS	ALL		242	4- 7D14
69	LEATHER MANUFACTURES	1	17	247	4- 6D14
		19	22	247	4- 6C17
		23	48	247	4- 6D14
70	LOCKS	ALL		358	3- 4D10

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
71	CHEMISTRY, FERTILIZERS	1		113	3-10C04
		3	4	129	2- 7C13
		5	64.13	113	3-10C04
		65	128	129	2- 7C13
		900	904	113	3-10C04
		DIG. 1		129	2- 7C13
		DIG. 2	DIG. 4	113	3-10C04
72	METAL DEFORMING	ALL		321	3- 7C14
73	MEASURING AND TESTING	1DC	10	265	4- 5C10
		11	14	267	4- 5C10
		19.01	64.4	265	4- 5C10
		65		267	4- 5C10
		66		265	4- 5C10
		73	77	246	4- 7C23
		78	132	265	4- 5C10
		146	147	267	4- 5C10
		148	149	265	4- 5C10
		150A	150R	246	4- 7C23
		151	157	265	4- 5C10
		158	169	246	4- 7C23
		170A	171	267	4- 5C10
		172		246	4- 7C23
		178H	281	267	4- 5C10
		290B	334	246	4- 7C23
		335	338.6	265	4- 5C10
		379	381	267	4- 5C10
		382G	383	265	4- 5C10
		384	387	267	4- 5C10
		426	429	246	4- 7C23
		430	672	265	4- 5C10
		700	756	267	4- 5C10
		760	860	265	4- 5C10
		861	862.69	267	4- 5C10
		863	901	265	4- 5C10
		DIG. 1	DIG. 11	265	4- 5C10
74	MACHINE ELEMENTS AND MECHANISMS	1SS	500	352	3- 2C32
		500.5		352	3- 2C20
		501.5H	501.5R	352	3- 2C28
		501.6		352	3- 2C20
		502		352	3- 2C28
		502.1	502.6	352	3- 2C20
		503	617	352	3- 2C28
		625	724	352	3- 2C32
		730.1	733.1	352	3- 2C20
		745		352	3- 2C32
		810.1	810.2	352	3- 2C20
		813C	879	352	3- 2C28
		880	892	352	3- 2C20
		DIG. 1	DIG. 12	352	3- 2C28
75	SPECIALIZED METALLURGICAL PROCESSES, COMPOSITIONS FOR USE THEREIN, CONSOLIDATED METAL POWDER COMPOSITIONS, ETC.	10.1	10.67	111	3-10C24
		228	255	224	3-10C24
		300	609	111	3-10C24
		610	623	224	3-10C24
		624	962	111	3-10C24

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
76	METAL TOOLS AND IMPLEMENTS, MAKING	ALL		323	3- 6D04
79	BUTTON MAKING	ALL		326	3- 7C14
81	TOOLS	ALL		323	3- 7C30
82	TURNING	ALL		323	3- 6D06
83	CUTTING	13	767	324	3- 6B13
		768	955	324	3- 6C04
		DIG 1	DIG 3	324	3- 6C04
84	MUSIC	1	521	211	4-10D08
		600	746	217	4-10D08
		DIG 1	DIG 30	217	4-10D08
86	AMMUNITION AND EXPLOSIVE-CHARGE MAKING	ALL		221	3-11B29
87	TEXTILES, BRAIDING, NETTING AND LACE MAKING	ALL		245	4- 7B31
89	ORDNANCE	ALL		221	3-11B29
91	MOTORS, EXPANSIBLE CHAMBER TYPE	1	471	341	4- 3D08
		472	507	343	4- 3D08
		508	536	341	4- 3D08
		DIG 1	DIG 4	341	4- 3D08
92	EXPANSIBLE CHAMBER DEVICES	ALL		341	4- 3C10
98	VENTILATION	ALL		344	4- 3C33
99	FOODS AND BEVERAGES: APPARATUS	ALL		242	4- 7D14
100	PRESSES	ALL		242	4- 7D14
101	PRINTING	ALL		337	34- 3D48
102	AMMUNITION AND EXPLOSIVES	200	282	221	3-11B29
		283	292	224	3-11B29
		293		221	3-11B29
		301	361	224	3-11B29
		362	705	221	3-11B29
104	RAILWAYS	ALL		313	3- 4C24
105	RAILWAY ROLLING STOCK	ALL		313	3- 4C24
106	COMPOSITIONS, COATING OR PLASTIC	1.05	38.9	118	3-10C19
		122	287.35	119	3-10C19
		310	311	118	3-10C19
		312	313	118	3-10B15
		316	506	118	3-10C19
		600	823	118	3-10B15
		900	904	118	3-10C19
		DIG 1	DIG 4	118	3-10B15
		DIG 7		118	3-10C19

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
108	HORIZONTALLY SUPPORTED PLANAR SURFACES	ALL		357	34- 3D68
109	SAFES, BANK PROTECTION AND RELATED DEVICES	ALL		358	3- 4D10
110	FURNACES	ALL		344	4- 3C33
111	PLANTING	ALL		351	34- 3D68
112	SEWING	ALL		247	4- 6D14
114	SHIPS	1	19	315	3- 5C32
		20 1	25	221	3-11E29
		26	381	315	3- 5C32
116	SIGNALS AND INDICATORS	ALL		246	4- 7C23
118	COATING APPARATUS	13	47	133	3- 9C04
		50	50 1	134	3- 9C04
		52	506	133	3- 9C04
		600	612	134	3- 9C04
		620	643	133	3- 9C04
		644	662	215	4- 9C35
		663	714	133	3- 9C04
		715	900	134	3- 9C04
		DIG 1	DIG 22	133	3- 9C04
119	ANIMAL HUSBANDRY	ALL		333	34- 3D68
122	LIQUID HEATERS AND VAPORIZERS	1A	235 35	344	34- 3D48
		236	237	344	4- 3C38
		238	239	344	34- 3D48
		240 1	240 3	344	4- 3C33
		241	351	344	34- 3D48
		352	512	344	4- 3C33
		DIG 1	DIG 16	344	4- 3C33
123	INTERNAL-COMBUSTION ENGINES	1A	3	342	4- 2C08
		18A	18R	343	4- 2C08
		19	42	342	4- 2C08
		43AA	44R	343	4- 2C08
		45A	45R	346	4- 2C08
		46SC	198R	342	4- 2C08
		200	249	343	4- 2C08
		250	558	342	4- 2C08
		559 1	566	343	4- 2C08
		567	671	342	4- 2C08
		DIG 1	DIG 13	342	4- 2C08
124	MECHANICAL GUNS AND PROJECTORS	1	19	351	34- 3D68
		20 1	20 3	351	3- 4C02
		21	22	351	34- 3D68
		23 1	24 1	351	3- 4C02
		25		351	34- 3D68
		25 5	25 7	351	3- 4C02
		26	34	351	34- 3D68
		35 1	35 2	351	3- 4C02

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
124	MECHANICAL GUNS AND PROJECTORS	36	40	351	34- 3D68
		41.1		351	3- 4C02
		42	44	351	34- 3D68
		44.5	44.7	351	3- 4C02
		45	50	351	34- 3D68
		51.1		351	3- 4C02
		52	53	351	34- 3D68
		53.5		351	3- 4C02
		54	92	351	34- 3D68
		900		351	3- 4C02
125	STONE WORKING	ALL		323	3- 6C04
126	STOVES AND FURNACES	ALL		346	34- 3D48
127	SUGAR, STARCH AND CARBOHYDRATES	ALL		119	3- 9D24
128	SURGERY	1.6		335	4- 4D04
		3	23	339	4- 4D04
		24AA	24EL	335	4- 4D04
		24A	31	332	4- 4D04
		32	67	331	34- 3D48
		68	78	332	4- 4D04
		79		333	3- 3B28
		80DB	81R	332	4- 4D04
		82	126.1	331	34- 3D48
		155	171	338	4- 4D04
		200.11	207.29	337	34- 3D48
		362	403	334	4- 4D04
		419PG	424	335	4- 4D04
		581	623	332	4- 4D04
		630	641	335	4- 4D04
		642	644	135	4- 4D04
		645	652	338	4- 4D04
		653AF	730	335	4- 4D04
		731	782	339	4- 4D04
		783	804	335	4- 4D04
		830	894	331	34- 3D48
		897	908	335	4- 4D04
		909	914	337	34- 3D48
		915	919	335	4- 4D04
		DIG. 1	DIG. 19	335	4- 4D04
		DIG. 20		337	34- 3D48
		DIG. 21	DIG. 22	335	4- 4D04
		DIG. 23		337	34- 3D48
		DIG. 24	DIG. 25	335	4- 4D04
		DIG. 26		337	34- 3D48
		DIG. 27		335	4- 4D04
131	TOBACCO	ALL		332	4- 4D38
132	TOILET	ALL		333	34- 3D68
134	CLEANING AND LIQUID CONTACT WITH SOLIDS	1	42	119	3- 9D24
		43	201	242	4- 7D14
		900	902	242	4- 6C18

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
135	TENTS, CANOPIES, UMBRELLAS AND CANES	ALL		354	3- 2C33
136	BATTERIES, THERMOELECTRIC AND PHOTOELECTRIC	200	242	224	3-11C28
		243	293	119	3-10B16
137	FLUID HANDLING	ALL		347	4- 2C28
138	PIPES AND TUBULAR CONDUITS	ALL		242	4- 7D36
139	TEXTILES, WEAVING	ALL		247	4- 6D14
140	WIREWORKING	ALL		321	3- 7C30
141	FLUENT MATERIAL HANDLING, WITH RECEIVER OR RECEIVER COACTING MEANS	ALL		243	4- 7D36
142	WOOD TURNING	ALL		323	3- 7C23
144	WOODWORKING	ALL		321	3- 7C14
147	COOPERING	ALL		326	3- 7C14
148	METAL TREATMENT	1	30	111	3-10C24
		33	33.6	114	3-10D22
		100	125	111	3-10C24
		126.1		224	3-11B29
		127	131	111	3-10C24
		132		224	3-11B29
		133	162	111	3-10C24
		240	287	134	3- 9C04
		300	910	111	3-10C24
		DIG. 1	DIG. 174	114	3-10D22
149	EXPLOSIVE AND THERMIC COMPOSITIONS OR CHARGES	ALL		224	3-10C32
150	PURSES, WALLETS, AND PROTECTIVE COVERS	ALL		241	4- 6C10
152	RESILIENT TIRES AND WHEELS	1	112	312	3- 4C23
		151	322	131	3- 9E09
		323	329	312	3- 4C23
		331.1	373	131	3- 9E09
		375	414	312	3- 4C23
		415	565	131	3- 9E09
		DIG. 1	DIG. 7	131	3- 9E09
		DIG. 8		312	3- 4C23
		DIG. 9		131	3- 9E09
		DIG. 10		312	3- 4C23
		DIG. 11	DIG. 16	131	3- 9E09
		DIG. 17		312	3- 4C23
		DIG. 18	DIG. 19	131	3- 9E09
		DIG. 20		312	3- 4C23
156	ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL MANUFACTURE	1	63	131	3- 9C03
		64	65	134	3- 9C03

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
156	ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL MANUFACTURE	66	72	131	3- 9C03
		73.1	73.6	134	3- 9C03
		74	81	131	3- 9C03
		82		134	3- 9C03
		83	88	131	3- 9C03
		89		134	3- 9C03
		90	94	131	3- 9C03
		95	97	131	3- 9D10
		98	109	131	3- 9C03
		110.1	136	131	3- 9D10
		137	156	131	3- 9C03
		157	159	134	3- 9C03
		160	161	131	3- 9C03
		162		134	3- 9C03
		163	164	131	3- 9C03
		165		134	3- 9C03
		166	181	131	3- 9C03
		182	195	134	3- 9C03
		196	228	131	3- 9C03
		229	241	134	3- 9C03
		242	246	131	3- 9C03
		247	282	134	3- 9C03
		283	287	131	3- 9C03
		288	289	134	3- 9C03
		290	303.1	131	3- 9C03
		304.1	304.7	134	3- 9C03
		305	344	131	3- 9C03
		345		134	3- 9C03
		346	348	131	3- 9C03
		349	392	134	3- 9C03
		393		131	3- 9C03
		394.1	422	131	3- 9D10
		423	441	131	3- 9C03*
		441.5	458	134	3- 9C03
		459	474	131	3- 9C03
		475	499	134	3- 9C03
		500	501	131	3- 9C03
		502	580.1	134	3- 9C03
		580.2	583.91	134	3- 9D10
		584		131	3- 9C03
		598		134	3- 9D10
		600	624	117	3- 9D24
		625	905	134	3- 9D10
		906	910	131	3- 9D10
		911		117	3- 9D10
		DIG. 1	DIG. 51	134	3- 9D10
		DIG. 61	DIG. 114	117	3- 9D24
		DIG. 115		117	3- 9C04
157	WHEELWRIGHT MACHINES	ALL		323	3- 7C30
159	CONCENTRATING EVAPORATORS	ALL		138	3- 8B17
160	CLOSURES, PARTITIONS AND PANELS, FLEXIBLE AND PORTABLE	ALL		355	34- 3D70
162	PAPER MAKING AND FIBER LIBERATION	ALL		133	3- 9C32

* See Attachment A for breakdown of subject matter assignments which overlap.

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
163	NEEDLE AND PIN MAKING	ALL		326	3- 7C14
164	METAL FOUNDING	ALL		325	3- 6D06
165	HEAT EXCHANGE	ALL		347	4- 2C08
166	WELLS	ALL		356	3- 3C06
168	FARRIERY	ALL		333	34- 3D68
169	FIRE EXTINGUISHERS	ALL		315	3- 4C24
171	UNEARTHING PLANTS OR BURIED OBJECTS	ALL		351	34- 3D68
172	EARTH WORKING	ALL		351	34- 3D68
173	TOOL DRIVING OR IMPACTING	ALL		324	3- 7C30
174	ELECTRICITY, CONDUCTORS AND INSULATORS	ALL		213	4- 9D04
175	BORING OR PENETRATING THE EARTH	ALL		356	3- 3C06
177	WEIGHING SCALES	ALL		218	4-10C23
178	TELEGRAPHY	1	36	261	4- 5D34
		37		222	3-11B29
		38	98	261	4- 5D34
		99.1		222	3-11C28
		100	120	261	4- 5D34
180	MOTOR VEHICLES	ALL		316	3- 5C12
181	ACOUSTICS	0.5		221	3-11B29
		18	30	213	4-10C24
		101	125	221	3-11B29
		126	138	213	4-10C24
		139	142	221	3-11B29
		143	296	213	4-10C24
		400	402	221	3-11B29
		403	404	213	4-10C24
182	FIRE ESCAPES, LADDERS, SCAFFOLDS	ALL		355	34- 3D70
184	LUBRICATION	ALL		346	34- 3D48
185	MOTORS, SPRING, WEIGHT AND ANIMAL POWERED	ALL		352	3- 2C28
186	MERCHANDISING	ALL		317	3- 4C07
187	ELEVATORS	1A	2	311	3- 4B15
		3	3.1	214	4-10D14
		4	28	311	3- 4B15
		29.1	29.2	214	4-10D14
		30	98	311	3- 4B15
		100	140	214	4-10D14
		DIG. 1		311	3- 4B15

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
188	BRAKES	ALL		313	3- 5D10
190	TRUNKS AND HAND CARRIED LUGGAGE	ALL		241	4- 6C10
191	ELECTRICITY: TRANSMISSION TO VEHICLES	ALL		317	3- 4C24
192	CLUTCHES AND POWER-STOP CONTROL	ALL		352	3- 2C28
193	CONVEYERS, CHUTES, SKIDS, GUIDES AND WAYS	ALL		311	3- 4C17
194	CHECK-ACTUATED CONTROL MECHANISMS	ALL		317	3- 4B15
196	MINERAL OILS: APPARATUS	ALL		133	3- 9D10
198	CONVEYERS, POWER-DRIVEN	ALL		311	3- 4C34
199	TYPE CASTING	ALL		337	4- 4D04
200	ELECTRICITY: CIRCUIT MAKERS AND BREAKERS	1TK	41	214	4-10C17
		42.01	49	243	4- 7D36
		50AA	50R	214	4-10C17
		51LM	51.17	243	4- 7D36
		52A	61.93	214	4-10C17
		79		243	4- 7D36
		80A	86.5	213	4-10C17
		144AP	180	214	4-10C17
		181	574	243	4- 7D36
		600		214	4-10C17
		DIG. 2	DIG. 47	214	4-10C17
201	DISTILLATION: PROCESSES, THERMOLYTIC	ALL		133	3- 9B07
202	DISTILLATION: APPARATUS	81	206	138	3- 9B07
		207	230	133	3- 9B07
		232	270	138	3- 9B07
		DIG. 1		133	3- 9B07
203	DISTILLATION: PROCESSES, SEPARATORY	ALL		138	3- 9B07
204	CHEMISTRY, ELECTRICAL AND WAVE ENERGY	1.11		112	3-10C04
		1.5		224	3-10C30
		2	157.15	112	3-10C04
		157.2	157.22	224	3-10C24
		157.3	191	112	3-10C04
		192.1	192.38	119	3-10C04
		193	297W	112	3-10C04
		298.01	298.41	119	3-10C04
		299EC	914	112	3-10C04
		DIG. 1	DIG. 13	112	3-10C04
206	SPECIAL RECEPTACLE OR PACKAGE	0.5	37	244	4- 6C18
		37.1	831	244	4- 6C10

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
208	MINERAL OILS: PROCESSES AND PRODUCTS	ALL		119	3- 9D24
209	CLASSIFYING, SEPARATING AND ASSORTING SOLIDS	1	161	312	3- 4C23
		162	170	138	3- 9C30
		171	942	312	3- 4C23
210	LIQUID PURIFICATION OR SEPARATION	85	149	136	3- 7C06
		150	193	138	3- 7C06
		194	198.1	138	3- 7D08
		198.2	198.3	136	3- 7D08
		199	221.2	138	3- 7D08
		222	231	136	3- 7D08
		232	320	138	3- 7D08
		321.6	331	136	3- 7D08
		332	347	136	3- 7C06
		348	416.5	138	3- 7C06
		417	500.1	136	3- 7C06
		500.21	500.43	135	3- 7C06
		501	510.1	136	3- 7C06
		511	512.3	135	3- 7C06
		513	633	138	3- 7C06
		634	659	136	3- 7C06
		660	694	138	3- 7C06
		695		136	3- 7C06
		696	766	138	3- 7C06
		767	930	136	3- 7C06
		DIG. 3	DIG. 17	136	3- 7C06
211	SUPPORTS, RACKS	ALL		355	34- 3D70
212	TRAVERSING HOISTS	ALL		315	3- 5E09
213	RAILWAY DRAFT APPLIANCES	ALL		313	3- 4C24
215	BOTTLES AND JARS	ALL		241	4- 6C10
217	WOODEN RECEPTACLES	ALL		241	4- 6C10
219	ELECTRIC HEATING	ALL		216	4-10D14
220	RECEPTACLES	ALL		241	4- 6C10
221	ARTICLE DISPENSING	1	5	311	3- 4B15
		6	312R	311	3- 4C03
		DIG. 1		311	3- 4B15
222	DISPENSING	1	589	314	3- 5C12
		590	607	111	3-10C24
		608	628	314	3- 5C12
		629		111	3-10C24
		630	652	314	3- 5C12
		DIG. 1		314	3- 5C12
223	APPAREL APPARATUS	ALL		247	4- 6D14
224	PACKAGE AND ARTICLE CARRIERS	ALL		243	4- 7C23

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
225	SEVERING BY TEARING OR BREAKING	ALL		324	3- 6C04
226	ADVANCING MATERIAL OF INDETERMINATE-LENGTH	ALL		245	4- 6C18
227	ELONGATED-MEMBER-DRIVING APPARATUS	ALL		324	3- 6D04
228	METAL FUSION BONDING	ALL		325	3- 6D06
229	ENVELOPES, WRAPPERS AND PAPERBOARD BOXES	ALL		241	4- 6C10
231	WHIPS AND WHIP APPARATUS	ALL		333	34- 3D68
232	DEPOSIT AND COLLECTION RECEPTACLES	ALL		355	34- 3D68
234	SELECTIVE CUTTING (E.G., PUNCHING)	ALL		324	3- 6C04
235	REGISTERS	1A	201R	213	4-10C24
		375	386	239	4-11C32
		400	418	234	4-11C32
		419	495	239	4-11C32
236	AUTOMATIC TEMPERATURE AND HUMIDITY REGULATION	ALL		344	4- 3C33
237	HEATING SYSTEMS	ALL		344	4- 3C33
238	RAILWAYS, SURFACE TRACK	ALL		317	3- 4C24
239	FLUID SPRINKLING, SPRAYING AND DIFFUSING	ALL		314	3- 5D10
241	SOLID MATERIAL COMMINUTION OR DISINTEGRATION	ALL		326	3- 7D30
242	WINDING AND REELING	ALL		245	4- 6D34
244	AERONAUTICS	1TD	3	315	3- 5C32
		3.1	3.3	221	3-11B29
		4A	13	315	3- 5C32
		14		221	3-11B29
		15	905	315	3- 5C32
245	WIRE FABRICS AND STRUCTURE	ALL		326	3- 7C14
246	RAILWAY SWITCHES AND SIGNALS	ALL		317	3- 4C23
248	SUPPORTS	ALL		355	34- 3D70
249	STATIC MOLDS	ALL		135	3- 9C04
250	RADIANT ENERGY	200	239	255	4- 8D04
		250	526	256	4- 8D04
		548	908	255	4- 8D04
251	VALVES AND VALVE ACTUATION	ALL		347	4- 2C28

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
252	COMPOSITIONS	1	8.555	223	3-10C30
		8.57	8.9	115	3-10C19
		9	58	119	3-10C19
		60	62	115	3-10C19
		62.2	62.9	117	3- 9D24
		67	79	115	3-10C19
		79.1	79.5	134	3- 9D10
		80	88	119	3-10D34
		89.1	175	115	3-10D34
		176	181	119	3-10D34
		181.1	181.7	223	3-10C30
		182.1	183.16	224	3-10C30
		184	299.7	223	3-10C30
		301.16	301.65	119	3- 9D24
		302	363.5	223	3-10C30
		364	366	224	3-10C30
		367	370	119	3-10C19
		372	377	126	2- 7A04
		378P	378R	113	3- 9D24
		380	478	223	3-10C30
		492		119	3- 9D24
		500	521	115	3-10C19
		523	559	115	3-10D34
		567	581	115	3-10C19
		582	611	223	3-10C30
		625	647	224	3-10C30
		700		223	3-10C30
		950	951	113	3- 9D24
		960	965	223	3-10C30
		DIG. 1	DIG. 17	115	3-10C19
		DIG. 18		117	3- 9D24
		DIG. 19		115	3-10C19
254	IMPLEMENTS OR APPARATUS FOR APPLYING PUSHING OR PULLING FORCE	1	134.7	323	3- 7C34
		199	417	245	4- 6C18
		418	427	323	3- 7C34
		900	903	245	4- 6C18
		DIG. 1	DIG. 10	323	3- 7C34
		DIG. 11	DIG. 15	245	4- 6C18
		DIG. 16		323	3- 7C34
256	FENCES	ALL		351	3- 4C10
258	RAILWAY MAIL DELIVERY	ALL		311	3- 4C03
260	CHEMISTRY, CARBON COMPOUNDS	1	665R	124	2- 7A04
		998.11	998.22	151	2-10C15
		DIG. 14	DIG. 41	155	2-11D--
		DIG. 42		116	3- 9D24
		DIG. 43		155	2-11D--
		DIG. 44		126	2-11D--
		DIG. 45	DIG. 47	155	2-11D--
261	GAS AND LIQUID CONTACT APPARATUS	ALL		135	3- 8D34
264	PLASTIC AND NONMETALLIC ARTICLE SHAPING OR TREATING: PROCESSES	0.5		221	3-10C30
		1.1	2.7	137	3- 8D06
		3.1	3.6	224	3-10C30

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
264	PLASTIC AND NONMETALLIC ARTICLE SHAPING OR TREATING: PROCESSES	4		137	3- 8D06
		4.1	4.7	223	3-10C30
		5	15	136	3- 8D06
		16	44	137	3- 8D06
		45.1	55	136	3- 8D06
		56	108	137	3- 8D06
		109	128	136	3- 8D06
		129	163	135	3- 8D06
		164	218	137	3- 8D06
		219	227	135	3- 8D06
		228	256	137	3- 8D06
		257	258	135	3- 8D06
		259	320	137	3- 8D06
		321		136	3- 8D06
		322	516	137	3- 8D06
		517	518	136	3- 8D06
		519	574	137	3- 8D06
		DIG. 1	DIG. 84	137	3- 8D06
266	METALLURGICAL APPARATUS	ALL		111	3-10C24
267	SPRING DEVICES	ALL		313	3- 5D10
269	WORK HOLDERS	ALL		323	3- 7C34
270	SHEET-MATERIAL ASSOCIATING	ALL		341	34- 3D48
271	SHEET FEEDING OR DELIVERING	ALL		311	3- 4C03
272	AMUSEMENT AND EXERCISING DEVICES	1A	56.5R	354	3- 2C33
		61	78	332	4- 4D38
		85	92	354	3- 2C33
		93	903	332	4- 4D38
		DIG. 1	DIG. 9	332	4- 4D38
273	AMUSEMENT DEVICES. GAMES	ALL		334	34- 3D48
276	TYPE SETTING	ALL		337	4- 4D04
277	JOINT PACKING	ALL		246	4- 7C23
278	LAND VEHICLES, ANIMAL DRAFT APPLIANCES	ALL		311	3- 4C03
279	CHUCKS OR SOCKETS	ALL		322	3- 6D34
280	LAND VEHICLES	ALL		316	3- 5C12
281	BOOKS, STRIPS AND LEAVES	ALL		324	3- 6B07
282	MANIFOLDING	ALL		324	3- 6B07
283	PRINTED MATTER	ALL		324	3- 6B07
285	PIPE JOINTS OR COUPLINGS	ALL		351	3- 4C10
289	KNOTS AND KNOT TYING	ALL		247	4- 6D14

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
290	PRIME-MOVER DYNAMO PLANTS	ALL		214	4-10D14
291	TRACK SANDERS	ALL		317	3- 4C24
292	CLOSURE FASTENERS	ALL		358	3- 4D10
293	VEHICLE FENDERS	ALL		312	3- 4C23
294	HANDLING, HAND AND HOIST-LINE IMPLEMENTS	ALL		312	3- 4C23
295	RAILWAY WHEELS AND AXLES	ALL		312	3- 4C23
296	LAND VEHICLES, BODIES AND TOPS	ALL		312	3- 4C23
297	CHAIRS AND SEATS	ALL		357	34- 3D68
298	LAND VEHICLES, DUMPING	ALL		317	3- 4C30
299	MINING OR IN SITU DISINTEGRATION OF HARD MATERIAL	ALL		356	3- 3C06
300	BRUSH, BROOM AND MOP MAKING	ALL		326	3- 7C14
301	LAND VEHICLES, WHEELS AND AXLES	ALL		312	3- 4C23
303	FLUID-PRESSURE BRAKE AND ANALOGOUS SYSTEMS	ALL		313	3- 5D10
305	WHEEL SUBSTITUTES FOR LAND VEHICLES	ALL		312	3- 4C23
307	ELECTRICAL TRANSMISSION OR INTER-CONNECTION SYSTEMS	1	157	214	4-10C23
		200 1	325	254	4- 7C24
		326	328	214	4-10C23
		350	364	254	4- 7C24
		400	423	214	4-10C23
		424		252	4- 7C24
		425	430	251	4- 7C24
		440	648	254	4- 7C24
310	ELECTRICAL GENERATOR OR MOTOR STRUCTURE	1	300	212	4- 8B03
		301	305	222	3-11B29
		306	800	212	4- 8B03
		DIG 2	DIG 6	212	4- 8B03
312	SUPPORTS, CABINET STRUCTURES	ALL		357	3- 3C34
313	ELECTRIC LAMP AND DISCHARGE DEVICES	1	350	264	4- 6C34
		351	643	264	4- 6C36
		DIG 7		264	4- 6C36
314	ELECTRIC LAMP AND DISCHARGE DEVICES, CONSUMABLE ELECTRODES	ALL		214	4-10C24
315	ELECTRIC LAMP AND DISCHARGE DEVICES, SYSTEMS	1	9	252	4- 8D10
		10	30	222	3-11B29
		32	363	252	4- 8D10
		364	411	222	3-11B29

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
315	ELECTRIC LAMP AND DISCHARGE DEVICES, SYSTEMS	DIG. 1	DIG. 7	252	4- 8D10
318	ELECTRICITY, MOTIVE POWER SYSTEMS	1	34	217	4-10D14
		35	38	212	4-10D14
		39	113	217	4-10D14
		114	135	212	4-10D14
		136	832	217	4-10D14
		DIG. 2		217	4-10D14
320	ELECTRICITY, BATTERY AND CONDENSER CHARGING AND DISCHARGING	ALL		212	4- 8B03
322	ELECTRICITY, SINGLE GENERATOR SYSTEMS	ALL		212	4- 8B03
323	ELECTRICITY,POWER SUPPLY, OR REGULATION SYSTEMS	ALL		212	4- 8B03
324	ELECTRICITY, MEASURING AND TESTING	66	75	267	4- 5D10
		76A	91	265	4- 5D10
		92	263	267	4- 5D10
		300	322	265	4- 5C10
		323	377	267	4- 5C10
		378	402	267	4- 5D06
		403	470	267	4- 5D10
		500	727	267	4- 5D06
		800		267	4- 5D23
328	MISCELLANEOUS ELECTRON SPACE DISCHARGE DEVICE SYSTEMS	1	226	254	4- 7C24
		227	238	264	4- 6C36
		239	271	254	4- 7C24
329	DEMODULATORS	ALL		252	4- 7B15
330	AMPLIFIERS	1A	3	252	4- 7B15
		4	4 3	222	3-11B29
		4 5	311	252	4- 7B15
331	OSCILLATORS	ALL		252	4- 8B11
332	MODULATORS	ALL		252	4- 7B15
333	WAVE TRANSMISSION LINES AND NETWORKS	ALL		252	4- 8E05
334	TUNERS	ALL		252	4- 8B13
335	ELECTRICITY, MAGNETICALLY OPERATED SWITCHES, MAGNETS AND ELECTRO-MAGNETS	ALL		213	4-10D14
336	INDUCTOR DEVICES	ALL		213	4- 9D04
337	ELECTRICITY, ELECTROTHERMALLY OR THERMALLY ACTUATED SWITCHES	ALL		213	4-10C23
338	ELECTRICAL RESISTORS	ALL		216	4- 9D04

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES		ART UNIT	SEARCH ROOM
		FROM	TO		
340	COMMUNICATIONS, ELECTRICAL	146.2		231	4-10D36
		286.01	407	268	4- 5D06
		425		268	4- 6B37
		425.5	490	268	4- 5D10
		500	693	268	4- 5D34
		700	815.33	269	4- 5D34
		825	827	264	4- 6B37
		850	861	221	3-11C28
		870.01	870.44	264	4- 6B37
		901	996	268	4- 5D06
341	CODED DATA GENERATION OR CONVERSION	1	13	214	4-10D14
		14	17	214	4- 9D04
		20	35	264	4- 6B37
		50	172	214	4- 9D04
		173	175	264	4- 6B37
		176		268	4- 6B37
		177	192	264	4- 6B37
		200	899	214	4- 9D04*
342	COMMUNICATIONS, DIRECTIVE RADIO WAVE SYSTEMS AND DEVICES (E.G., RADAR, RADIO NAVIGATION)	1	205	222	3-10C32
		350	465	222	3-10C30
343	COMMUNICATIONS, RADIO WAVE ANTENNAS	ALL		258	4- 8B09
346	RECORDERS	ALL		218	4-10C23
350	OPTICS, SYSTEMS AND ELEMENTS	1.1	3.86	257	4- 8D32
		4.1	4.2	211	4- 9B31
		6.1	6.91	257	4- 8D32
		96.1	96.34	251	4- 8D32
		97	116	257	4- 8D32
		117	129	211	4- 9B31
		130	257	257	4- 8D32
		258	265	211	4- 9B31
		266	322	257	4- 8D32
		330	352	254	4- 7C24
		353	363	252	4- 7C24
		370	642	257	4- 8D32
		DIG. 3		257	4- 8D32
351	OPTICS, EYE EXAMINING, VISION TESTING AND CORRECTING	ALL		257	4- 8D32
352	OPTICS, MOTION PICTURES	ALL		211	4-10C24
353	OPTICS, IMAGE PROJECTORS	ALL		246	4- 7C23
354	PHOTOGRAPHY	ALL		211	4- 9B31
355	PHOTOCOPYING	1	133	211	4- 9B31
		200	328	215	4- 9E03
356	OPTICS, MEASURING AND TESTING	1		222	3-10C32
		2	3	255	4- 8D04
		4		222	3-10C32

* There are no subclasses between 200-899.

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
356	OPTICS, MEASURING AND TESTING	4.5		255	4- 8D04
		5		222	3-10C32
		6	27	255	4- 8D04
		28	29	222	3-10C32
		30	140	255	4- 8D04
		141		222	3-10C32
		142	151	255	4- 8D04
		152		222	3-10C32
		153	448	255	4- 8D04
357	ACTIVE SOLID STATE DEVICES, E.G., TRANSISTORS, SOLID STATE DIODES	ALL		258	4- 7B15*
358	PICTORIAL COMMUNICATION; TELEVISION	1	83	262	4- 4C08
		84		267	4- 4C08
		85		261	4- 4C08
		86		267	4- 4C08
		87	110	262	4- 4C08
		111		256	4- 8B13
		112	229	262	4- 4C08
		230	243	262	4- 4B09
		244	244.2	235	4-11D06
		245	262.1	268	4- 4B09
		296	304	218	4-10D14
		305		262	4- 4B09
		310	348	235	4-11D06
		349		222	3-11B29
		400	498	268	4- 4B09
		901	905	262	4- 4B09
		906	908	235	4-11D06
		909		262	4- 4B09
360	DYNAMIC MAGNETIC INFORMATION STORAGE OR RETRIEVAL	ALL		233	4-11D06
361	ELECTRICITY, ELECTRICAL SYSTEMS AND DEVICES	1	246	214	4-10C23
		247	266	211	4- 9C36
		267	270	214	4-10C23
		271	326	211	4- 9C36
		327	432	214	4-10C23
		434	436	211	4- 9C36
		437		214	4-10C23
		500	541	211	4- 9C36
362	ILLUMINATION	ALL		346	4- 2C28
363	ELECTRIC POWER CONVERSION SYSTEMS	1	101	212	4- 8B03
		102	122	212	4-10D14
		123	178	212	4- 8B03
364	ELECTRICAL COMPUTERS AND DATA PROCESSING SYSTEMS	130	194	236	4-11C32
		200		232	4-11C34*
		221	286.6	237	4-11C34**
		400	409	236	4-11C32
		410	412	238	4-11C32
		413.01	413.31	236	4-11C32
		419	422	238	4-11C32
		423	467	234	4-11C32

* 357/ALL also belongs to Art Unit 253.

* See Attachment A for breakdown of subject matter assignments which overlap.

** ELECTRONIC SEARCH ONLY (Subclasses 221-286.6)

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
364	ELECTRICAL COMPUTERS AND DATA PROCESSING SYSTEMS	468	479	236	4-11C32
		480	512	234	4-11C32
		513		238	4-11C32
		513.5		231	4-10D36
		514	517	234	4-11C32
		518	523	231	4-10D36
		524	582	234	4-11C32
		600	608	236	4-11C32
		700	788	231	4-10D36
		800	864	236	4-10D36
		900		232	4-11C34*
		916	978.3	237	4-11C34**
365	STATIC INFORMATION STORAGE AND RETRIEVAL	ALL		233	4-11D06
366	AGITATING	ALL		242	4- 7D14
367	COMMUNICATIONS, ELECTRICAL: ACOUSTIC WAVE SYSTEM AND DEVICES	1	92	222	3-11B29
		93	94	268	4- 5D34
		95	139	222	3-11B29
		140	191	221	3-11C28
		197	199	264	4- 6B37
		900	912	222	3-11B29
368	HOROLOGY: TIME MEASURING SYSTEMS OR DEVICES	ALL		217	4- 9D04
369	DYNAMIC INFORMATION STORAGE OR RETRIEVAL	1	29	239	4-11D06
		30	32	235	4-11D06
		33	42	239	4-10D36
		43	54	235	4-11D06
		55	57	239	4-10D36
		58	62	235	4-11D06
		63		239	4-10D36
		64		235	4-11D06
		65	68	239	4-10D36
		69	70	235	4-11D06
		71	75.2	239	4-10D36
		76		235	4-11D06
		77.1	82	239	4-10D36
		83	85	239	4-11D06
		86	95	235	4-11D06
		96		239	4-10D36
		97		235	4-11D06
		98	99	239	4-10D36
		100	125	235	4-11D06
		126		239	4-11D06
		127		239	4-10D36
		128	152	239	4-11D06
		153	173	239	4-10D36
		174	175	235	4-11D06
		176	274	239	4-10D36
		275.1	275.5	235	4-11D06
		276		239	4-11D06
		277	292	239	4-10D36
370	MULTIPLEX COMMUNICATIONS	1	4	267	4- 5D34

* See Attachment A for breakdown of subject matter assignments which overlap.

** ELECTRONIC SEARCH ONLY (Subclasses 916-978.3)

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
370	MULTIPLEX COMMUNICATIONS	5	125	263	4- 5D34
371	ERROR DETECTION/CORRECTION AND FAULT DETECTION/RECOVERY	ALL		236	4-11C32
372	COHERENT LIGHT GENERATORS	ALL		251	4- 8E05
373	INDUSTRIAL ELECTRIC HEATING FURNACES	ALL		216	4-10C24
374	THERMAL MEASURING AND TESTING	ALL		246	4- 7C23
375	PULSE OR DIGITAL COMMUNICATIONS	1		222	3-10C32
		3	122	263	4- 5D34
376	INDUCED NUCLEAR REACTIONS, SYSTEMS AND ELEMENTS	ALL		224	3-11B29
377	ELECTRICAL PULSE COUNTERS, PULSE DIVIDERS OR SHIFT REGISTERS: CIRCUITS AND SYSTEMS	ALL		254	4- 7C24
378	X-RAY OR GAMMA RAY SYSTEMS OR DEVICES	ALL		256	4- 8B13
379	TELEPHONIC COMMUNICATIONS	1	67	261	4- 4C04
		68	87	239	4-11D06
		88	457	261	4- 4C04
380	CRYPTOGRAPHY	ALL		222	3-11B29
381	ELECTRICAL AUDIO SIGNAL PROCESSING SYSTEMS, AND DEVICES	1	28	261	4- 4C04
		29	53	231	4-10D36
		54	205	261	4- 4C04
382	IMAGE ANALYSIS	ALL		266	4- 5C10
383	FLEXIBLE BAGS	ALL		241	4- 6C18
384	BEARINGS	ALL		245	4- 6D34
388	ELECTRICITY, MOTOR CONTROL SYSTEMS	ALL		217	4-10D14
392	ELECTRIC RESISTANCE HEATING DEVICES	ALL		216	4- 9D04
400	TYPEWRITING MACHINES	ALL		337	34- 3D48
401	COATING IMPLEMENTS WITH MATERIAL SUPPLY	ALL		331	3- 3A05
402	BINDER DEVICE RELEASABLY ENGAGING APERTURE OR NOTCH OF SHEET	ALL		324	3- 6B07
403	JOINTS AND CONNECTIONS	ALL		351	3- 4C10

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
404	ROAD STRUCTURE, PROCESS AND APPARATUS	ALL		356	3- 3C06
405	HYDRAULIC AND EARTH ENGINEERING	ALL		351	3- 4C10
406	CONVEYORS, FLUID CURRENT	ALL		315	3- 4C24
407	CUTTERS, FOR SHAPING	ALL		323	3- 6C04
408	CUTTING BY USE OF ROTATING AXIALLY MOVING TOOL	ALL		322	3- 7E09
409	GEAR CUTTING, MILLING, OR PLANING	ALL		322	3- 7C17
410	FREIGHT ACCOMMODATION ON FREIGHT CARRIER	ALL		317	3- 4C23
411	EXPANDED, THREADED, DRIVEN, HEADED, TOOL-DEFORMED, OR LOCKED-THREADED FASTENER	ALL		358	3- 4C10
412	BOOKBINDING: PROCESS AND APPARATUS	ALL		324	3- 6B07
413	SHEET METAL CONTAINER MAKING	ALL		323	3- 7C17
414	MATERIAL OR ARTICLE HANDLING	1	21	317	3- 4C30
		22.51	217	317	3- 5D32
		218	679	317	3- 5D34
		680	799	317	3- 5D32
		900	921	317	3- 4C30
		922	929	317	3- 5D32
		930	934	317	3- 4C30
415	ROTARY KINETIC FLUID MOTORS OR PUMPS	ALL		341	4- 3D08
416	FLUID REACTION SURFACES (I.E., IMPELLERS)	ALL		341	4- 3C10
417	PUMPS	ALL		343	4- 3C10
418	ROTARY EXPANSIBLE CHAMBER DEVICES	ALL		343	4- 3C10
419	POWDER METALLURGY - PROCESSES	ALL		224	3-11B29
420	ALLOYS OR METALLIC COMPOSITIONS	1	7	224	3-11B29
		8	903	111	3-10C24
422	PROCESS DISINFECTING, DEODORIZING, PRESERVING OR STERILIZING, AND CHEMICAL APPARATUS	1	185	181	2- 5C15
		186	186.3	224	3-10C30
		187	244	181	2- 5C15
		245	254	117	3- 9D06
		255	903	181	2- 5C15
		904	907	224	3-10C30

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

		SUBCLASSES			
CLASS	CLASS TITLE	FROM	TO	ART UNIT	SEARCH ROOM
423	CHEMISTRY, INORGANIC	1		119	3- 9D06
		2	20	224	3-11B29
		21.1	209	119	3- 9D06
		210	248	113	3- 9D06
		249	261	224	3-11B29
		262	323	113	3- 9D06
		324	325	117	3- 9D06
		326	334	116	3- 9D06
		335	350	117	3- 9D06
		351	659	113	3- 9D06
		DIG. 1	DIG. 20	113	3- 9D06
424	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS	1.1		223	3-10C30
		2	11	129	2- 9C10
		40	48	152	2-11D--
		49	60	129	2- 9C10
		61	64	152	2-11D--
		65	68	129	2- 9C10
		69	83	152	2-11D--
		84		129	2- 9C10
		85.1	85.7	189	2-10C13*
		85.8	92	186	2-10C13*
		93	94.67	184	2-10C11*
		114	126	129	2- 9C10
		195.1	197.1	183	2- 6C07
		400	502	152	2-11D--
		520	583	184	2-10C11*
		600	724	129	2- 9C10
		DIG. 1	DIG. 15	129	2- 9C10
425	PLASTIC ARTICLE OR EARTHENWARE SHAPING OR TREATING: APPARATUS	1	334	135	3- 8B03
		335	595	135	3- 8B07
		801	818	135	3- 8B17
		DIG. 1	DIG.249	135	3- 8B17
426	FOOD OR EDIBLE MATERIAL: PROCESSES, COMPOSITIONS AND PRODUCTS	ALL		132	3- 8D06
427	COATING PROCESSES	1	213	139	3- 7D04
		213.3	213.36	223	3-10C10
		214	433	139	3- 7D04
		434.2	445	139	3- 7D08
428	STOCK MATERIAL OR MISCELLANEOUS ARTICLES	1	84	158	2-11D--
		85	97	154	2-11D--
		98	157	158	2-11D--
		158	160	154	2-11D--
		161	188	158	2-11D--
		189	191	154	2-11D--
		192	195	158	2-11D--
		196	198	154	2-11D--
		199	220	158	2-11D--
		221	402	154	2-11D--
		402.2	402.24	223	2- 9C10
		403	407	154	2-11D--
		408	410	158	2-11D--
		411.1	425.9	154	2-11D--

* See Attachment A for breakdown of subject matter assignments which overlap.

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
428	STOCK MATERIAL OR MISCELLANEOUS ARTICLES	426	442	158	2-11D--
		443	445	154	2-11D--
		446	454	158	2-11D--
		455	472	154	2-11D--
		472.1	472.3	134	3- 9C04
		473	537.7	154	2-11D--
		539.5		224	3-11B29
		540	543	154	2-11D--
		544	545	113	3-10C24
		546	566	224	3-11C28
		567	569	113	3-11C28
		570	687	113	3-10C24
		688	691	158	2-11D--
		692	695	154	2-11D--
		696	704	158	2-11D--
		900	922	154	2-11D--
		923	941	113	3-10C24
429	CHEMISTRY, ELECTRICAL CURRENT PRODUCING APPARATUS, PRODUCT AND PROCESS	1	110	114	3-10C17
		111		112	3-10B16
		112	255	114	3-10C17
430	RADIATION IMAGERY CHEMISTRY - PROCESS, COMPOSITION OR PRODUCT	1	30	157	2-11C--
		31	137	156	2- 2D--
		138	140	157	2-11C--
		141	268	156	2- 2D--
		269	330	157	2-11C--
		331	393	156	2- 2D--
		394	397	157	2-11C--
		398	967	156	2- 2D--
431	COMBUSTION	ALL		346	34- 3D48
432	HEATING	ALL		344	4- 3C10
433	DENTISTRY	ALL		333	34- 3D68
434	EDUCATION AND DEMONSTRATION	1	10	222	3-11B29
		11	433	332	4- 4D38
435	CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY	1	3	188	2- 6C07
		4	6	187	2- 6C07 *
		7.1	7.95	182	2-10C13 *
		8	40	187	2- 6C07 *
		41	67	184	2-10C13 *
		68.1	71.3	184	2- 9C07 *
		72	99	188	2-10C13 *
		100	105	183	2-10C13
		106	172.3	184	2-10C13 *
		173		185	2-10C13 *
		174	182	188	2-10C13 *
		183	234	186	2-10C13 *
		235.1		182	2-10C13 *
		236	239	188	2-10C13 *
		240.1	240.54	188	2- 6C07 *
		242	258	188	2-10C13 *
		259	261	184	2-10C13 *
		262	282	188	2-10C13 *

* See Attachment A for breakdown of subject matter assignments which overlap.

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
435	CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY	283	316	189	2- 6C07*
		317.1		184	2-10C13*
		320.1		185	2-10C13*
		800	948	182	2- 6C07*
		960	975	182	2-10C13*
436	CHEMISTRY: ANALYTICAL AND IMMUNOLOGICAL TESTING	1	7	181	2- 6C07
		8	24	189	2- 6C07*
		25	33	181	2- 6C07
		34	67	189	2- 6C07*
		68		181	2- 6C07
		69	183	189	2- 6C07*
		500	517	181	2- 6C07*
		518	548	182	2- 6C07
		800	829	181	2- 6C07*
		900	910	189	2- 6C07*
437	SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS	1	43	114	3-10D22
		44		117	3-10D22
		45	60	114	3-10D22
		61	133	117	3-10D22
		134	204	114	3-10D22
		205	224	117	3-10D22
		225	987	114	3-10D22
439	ELECTRICAL CONNECTORS	ALL		322	3- 6D34
440	MARINE PROPULSION	ALL		315	3- 4C24
441	BUOYS, RAFTS, AND AQUATIC DEVICES	ALL		315	3- 4C24
445	ELECTRIC LAMP OR SPACE DISCHARGE COMPONENT OR DEVICE MANUFACTURING	ALL		325	3- 6C04
446	AMUSEMENT DEVICES, TOYS	ALL		331	34- 3D68
449	BEE CULTURE	ALL		333	34- 3D68
450	FOUNDATION GARMENTS	ALL		247	4- 6D14
452	BUTCHERING	ALL		323	3- 7C14
453	COIN HANDLING	1	5	317	3- 5C32
		6	63	317	3- 4C07
455	TELECOMMUNICATIONS	1	25	267	4- 5D34
		26.1		222	3-11B29
		31	620	267	4- 5D34
460	CROP THRESHING OR SEPARATING	ALL		356	3- 3C06
464	ROTARY SHAFTS, GUDGEONS, HOUSINGS AND FLEXIBLE COUPLINGS FOR ROTARY SHAFTS	ALL		245	4- 6D34

* See Attachment A for breakdown of subject matter assignments which overlap.

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
474	ENDLESS BELT POWER TRANSMISSION SYSTEMS AND COMPONENTS	ALL		356	3- 3C06
475	PLANETARY GEAR TRANSMISSION SYSTEMS AND COMPONENTS	ALL		352	3- 2C28
493	MANUFACTURING CONTAINER OR TUBE FROM PAPER; OR OTHER MANUFACTURING FROM A SHEET OR WEB	ALL		323	3- 7C14
494	IMPERFORATE BOWL, CENTRIFUGAL SEPARATORS	ALL		242	4- 7D14
501	COMPOSITIONS: CERAMIC	ALL		118	3-10B15
502	CATALYST, SOLID SORBENT, OR SUPPORT THEREFOR, PRODUCT OR PROCESS OF MAKING	ALL		116	3- 9D24
503	RECORD RECEIVER HAVING PLURAL LEAVES OR A COLORLESS COLOR FORMER, METHOD OF USE OR DEVELOPER THEREFOR	ALL		158	2-11D--
505	SUPERCONDUCTOR TECHNOLOGY - APPARATUS, MATERIAL, PROCESS	ALL		139	3- 7B13
512	PERFUME COMPOSITIONS	ALL		126	2- 7A04
514	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS	1		125	2-10C13*
		2	62	125	2- 6C07*
		63	975	125	2- 9C10*
518	CHEMISTRY FISCHER-TROPSCH PROCESSES; OR PURIFICATION OR RECOVERY OF PRODUCTS THEREOF	ALL		126	2- 7A04
520	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	ALL		155	2-11D--
521	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	25	39	155	2-11D--
		40	49.8	151	2-11D--
		50		153	2-11D--
		50.5		151	2-11D--
		51	921	153	2-11D--
522	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	ALL		157	2-11D--
523	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	1	105	155	2-11D--
		106	108	151	2-11D--
		109		153	2-11D--
		111	114	155	2-11D--
		115	120	153	2-11D--

* See Attachment A for breakdown of subject matter assignments which overlap.

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
523	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	121	123	151	2-11D--
		124	128	155	2-11D--
		129		151	2-11D--
		130	132	155	2-11D--
		134	135	151	2-11D--
		136	138	153	2-11D--
		139	159	151	2-11D--
		160	161	155	2-11D--
		164	166	151	2-11D--
		167	170	155	2-11D--
		171	174	151	2-11D--
		175	181	153	2-11D--
		200	217	151	2-11D--
		218	219	153	2-11D--
		220	300	151	2-11D--
		303	426	155	2-11D--
		427	434	151	2-11D--
		435		153	2-11D--
		436	445	151	2-11D--
		446	449	153	2-11D--
		450		151	2-11D--
		451	461	153	2-11D--
		462	463	155	2-11D--
		464	468	151	2-11D--
		500	505	155	2-11D--
		506	512	153	2-11D--
		513		151	2-11D--
		514	516	153	2-11D--
		517		155	2-11D--
		518	527	151	2-11D--
524	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	1	8	151	2-11D--
		9	58	153	2-11D--
		59	71	151	2-11D--
		72	78	153	2-11D--
		79		151	2-11D--
		80	185	153	2-11D--
		186	269	155	2-11D--
		270	274	153	2-11D--
		275	279	151	2-11D--
		280	322	155	2-11D--
		323	353	153	2-11D--
		354	391	155	2-11D--
		392	400	153	2-11D--
		401	456	151	2-11D--
		457	461	155	2-11D--
		462	473	153	2-11D--
		474	491	155	2-11D--
		492	497	151	2-11D--
		498		153	2-11D--
		499		155	2-11D--
		500		151	2-11D--
		501		155	2-11D--
		502	542	151	2-11D--
		543	587	155	2-11D--
		588		151	2-11D--
		589	590	153	2-11D--
		591		155	2-11D--

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

		SUBCLASSES		ART	SEARCH
CLASS	CLASS TITLE	FROM	TO	UNIT	ROOM
524	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	592	595	153	2-11D--
		596		155	2-11D--
		597		151	2-11D--
		598		155	2-11D--
		599	607	153	2-11D--
		608	609	155	2-11D--
		610		151	2-11D--
		611	612	153	2-11D--
		650	700	151	2-11D--
		701	704	153	2-11D--
		705		151	2-11D--
		706	713	153	2-11D--
		714	731	155	2-11D--
		732	735	153	2-11D--
		736	741	155	2-11D--
		742	754	153	2-11D--
		755	762	155	2-11D--
		763		151	2-11D--
		764		153	2-11D--
		765	778	155	2-11D--
		779	791	151	2-11D--
		792	796	155	2-11D--
		797	799	153	2-11D--
		800	846	155	2-11D--
		847		151	2-11D--
		848	856	155	2-11D--
		857	869	151	2-11D--
		871	881	153	2-11D--
		900	929	155	2-11D--
525	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	7	8	155	2-11D--
		10	54	151	2-11D--
		54.1	54.45	155	2-11D--
		54.5	111	151	2-11D--
		111.5		155	2-11D--
		112	133	151	2-11D--
		133.5		155	2-11D--
		134	167	151	2-11D--
		167.5		155	2-11D--
		168	301	151	2-11D--
		301.5		155	2-11D--
		302	324	151	2-11D--
		326.1	338	155	2-11D--
		339	420	151	2-11D--
		420.5		155	2-11D--
		421	444	151	2-11D--
		444.5		155	2-11D--
		445	501	151	2-11D--
		501.5		155	2-11D--
		502	517	151	2-11D--
		517.5		155	2-11D--
		518	941	151	2-11D--
		942		155	2-11D--
526	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	ALL		155	2-10C15

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

		SUBCLASSES		ART	SEARCH
CLASS	CLASS TITLE	FROM	TO	UNIT	ROOM
527	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	100	403	153	2-10C15
		500	503	151	2-10C15
		600	604	153	2-10C15
528	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES	1	3	153	2-10C15
		4	26	151	2-10C15
		26.5		153	2-10C15
		27	43	151	2-10C15
		44	195	153	2-10C15
		196	204	151	2-10C15
		205	245.5	153	2-10C15
		246	264	151	2-10C15
		265	308	153	2-10C15
		308.1	309.1	155	2-10C15
		310	369	153	2-10C15
		370	391	151	2-10C15
		392	503	153	2-10C15
		901		151	2-10C15
		902	950	153	2-10C15
530	CHEMISTRY, NATURAL RESINS OR DERIVATIVES PEPTIDES OR PROTEINS; LIGNINS OR REACTION PRODUCTS THEREOF	200	233	153	2-10C15
		300	345	189	2- 6C07*
		350	426	189	2-10C13*
		427		189	2- 9C10
		500	507	153	2- 8A12
		800	802	189	2- 6C07*
		806	859	189	2-10C13*
534	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	7		223	3- 9D04
		10	16	223	3-10C30
		550	887	121	2- 9C10
536	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	1.1		183	2- 6C07
		2	3	151	2-10C15
		4.1	26	183	2- 6C07*
		27	28	184	2- 6C07*
		29		183	2- 6C07*
		30	50	151	2-10C15
		51	55.3	183	2- 6C07
		56	111	151	2-10C15
		112	128	183	2- 6C07
540	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL		122	2- 7C13
544	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL		122	2- 9C10
546	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL		123	2- 9C10
548	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	100	269.2	121	2- 9C10
		269.4		121	2- 9C07
		300	969	121	2- 9C10
549	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	1	90	129	2- 8D04
		200	563	123	2- 8D04

* See Attachment A for breakdown of subject matter assignments which overlap.

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
552	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL		126	2- 7A04
556	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL		124	2- 7A04
558	ORGANIC COMPOUNDS -- PART OF THE 532-570 SERIES	ALL		121	2- 8A12
560	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL		124	2- 7A04
562	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL		124	2- 7A04
564	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL		129	2- 7A04
568	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	1	923	126	2- 7A04
		924	949	126	3-10C30
		950	959	126	2- 7A04
570	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES	ALL		126	2- 7A04
585	CHEMISTRY, HYDROCARBONS	ALL		116	3- 9D24
600	SURGERY	1	28	335	4- 4D04
		29	37	338	4- 4D04
604	SURGERY	1	18	338	4- 4D04
		19	26	339	4- 4D04
		27	56	336	4- 4D04
		57	79	339	4- 4D04
		80	284	336	4- 4D04
		285	303	339	4- 4D04
		304	402	338	4- 4D04
		403	416	331	4- 4D04
		890.1	906	336	4- 4D04
606	SURGERY	1	52	339	4- 4D04
		53	105	339	3- 3A05
		106	158	339	4- 4D04
		159	211	336	4- 4D04
		212	236	339	4- 4D04
623	PROSTHESIS (I.E., ARTIFICIAL BODY MEMBERS), PARTS THEREOF OR AIDS AND ACCESSORIES THEREFOR	ALL		338	4- 4D38
800	MULTICELLULAR LIVING ORGANISMS AND UNMODIFIED PARTS THEREOF	ALL		184	2-10C13 *
901	ROBOTS	ALL		317	3- 4C30
902	ELECTRONIC FUNDS TRANSFER	ALL		239	4-11C30

* See Attachment A for breakdown of subject matter assignments which overlap.

CLASSES ARRANGED NUMERICALLY WITH ART UNIT AND SEARCH ROOM LOCATIONS

CLASS	CLASS TITLE	SUBCLASSES FROM	SUBCLASSES TO	ART UNIT	SEARCH ROOM
930	PEPTIDE OR PROTEIN SEQUENCE	ALL		186	2- 9C13
935	GENETIC ENGINEERING: RECOMBINANT DNA TECHNOLOGY, HYBRID OR FUSED CELL TECHNOLOGY AND RELATED MANIPULATIONS OF NUCLEIC ACIDS	1	65	185	2-10C13 *
		66	67	184	2-10C13
		68	69	185	2-10C13
		70	71	184	2-10C13
		72	75	185	2-10C13
		76	88	182	2-10C13 *
		89	110	184	2-10C13
		111		185	2-10C13 *

* See Attachment A for breakdown of subject matter assignments which overlap.

ATTACHMENT A

SUBJECT MATTER ASSIGNMENTS WHICH OVERLAP ART UNITS

Group 180

CLASS	SUBCLASS(ES)	ART UNIT	SUBJECT MATTER
156	425-432	131	Filaments
		134	Tapes
424	85.1-85.7	189B	Non-engineered/non-immuno
		186	Engineered/immuno
	94.1-94.67	184	Engineered/immuno
		188	Non-engineered/non-immuno
	520-583	184	Engineered/immuno
		188	Non-engineered/non-immuno
435	5	182	Non-AIDs/non-hybridization
		187	AIDs-related/hybridization
	41-171	184	Recombinant and non-Recombinant mono- and multicellular plant and animal subject matter
		185	Recombinant other than mono- and multicellular plant and animal subject matter
	41-68.1	188	Non-Recombinant bacterial, yeast, and enzyme fermentation
	69.1-69.9	184	Recombinant and non-recombinant mono- and multicellular plant and animal subject matter
		185	Recombinant other than mono- and multicellular plant and animal subject matter
	70.1-70.5	184	
	71.1-99	188	Non-recombinant bacteria, yeast and enzyme fermentation
	106-171	188	Non-recombinant bacteria, yeast, and enzyme fermentation
	172.1-172.3	184	Mono- and multicellular plant and animal subject matter

ATTACHMENT A

CLASS	SUBCLASS(ES)	ART UNIT	SUBJECT MATTER
		185	Other than mono- or multicellular plant and animal subject matter
	173-182	188	
	183-234	185	Recombinant production of enzymes
		186	Engineered enzymes
		188	Non-recombinant production of enzymes and non-engineered enzymes
	235-239	188	Non-recombinant virus
		185	Recombinant virus
	240.1-240.31	184	Involving immunology and genetic engineering
		188	Non-immuno/non-genetic engineering
		189A	Apparatus involves heavy chemical engineering concepts
	240.4-240.54	184	Involving immunology and genetic engineering
		189A	Apparatus involves heavy chemical engineering concepts
	242-252.2	185	Transformants
		188	Non-transformed
	252.3-252.35	185	
	252.4-253.6	188	
	254-256	185	Transformants
		188	Non-transformed
	257, 258	184	Transformants
		188	Non-transformed
	259-282	188	
	283-316	189A	

ATTACHMENT A

CLASS	SUBCLASS(ES)	ART UNIT	SUBJECT MATTER
	317.1, 320	184	Recombinant and non-recombinant mono- and multicellular plant and animal subject matter
		185	Recombinant, other than mono- or multicellular plant and animal
	800-948	182/183/184/185/186/187/188/189A	
436	8-24	189A	
	34-67	189A	
	69-183	189A	
	500-517	187	
	800-829	182/187	
	900-910	189A	
514	1-975	125	Not Pesticide
		129	If Pesticide
530	300-332	189B	Non-engineered
		186	Engineered
	333-345	189B	
	350-411	189B	Non-engineered
		186	Engineered
	412-427	189B	
	800-859	189B	Non-engineered
		186	Engineered
536	4.1-26	183	
	27-28	184	DNA and RNA
	27-29	183	Other than DNA and RNA
800	2, 200, 205, 220, 230, 235, 240, 250, 255	184	
935	1-65	184/185	
	76-84	182/184	
	85-88	182	
	111	184/185	

ATTACHMENT A

SUBJECT MATTER ASSIGNMENTS WHICH OVERLAP ART UNITS

Group 230

CLASS	SUBCLASS(ES)	ART UNIT	SUBJECT MATTER
364	200	232	30% of the new cases (serial numbers ending in digits 1-3)
		233	20% of the new cases (serial numbers ending in digits 4-5)
		237	30% of the new cases (serial numbers ending in digits 6-8)
		238	20% of the new cases (serial numbers ending in digits 9-0)
	900	232	
		237	
		238	

CLASSES ARRANGED IN ALPHABETICAL ORDER

CLASS	TITLE OF CLASS
51	ABRADING
181	ACOUSTICS
357	ACTIVE SOLID STATE DEVICES, E.G., TRANSISTORS, SOLID STATE DIODES
156	ADHESIVE BONDING AND MISCELLANEOUS CHEMICAL MANUFACTURE
226	ADVANCING MATERIAL OF INDETERMINATE-LENGTH
244	AERONAUTICS
366	AGITATING
420	ALLOYS OR METALLIC COMPOSITIONS
102	AMMUNITION AND EXPLOSIVES
86	AMMUNITION AND EXPLOSIVE-CHARGE MAKING
330	AMPLIFIERS
272	AMUSEMENT AND EXERCISING DEVICES
273	AMUSEMENT DEVICES, GAMES
446	AMUSEMENT DEVICES, TOYS
119	ANIMAL HUSBANDRY
D30	ANIMAL HUSBANDRY
D 2	APPAREL AND HABERDASHERY
223	APPAREL APPARATUS
2	APPAREL
D22	ARMS, PYROTECHNICS, HUNTING, FISHING, AND TRAPPING EQUIPMENT
221	ARTICLE DISPENSING
236	AUTOMATIC TEMPERATURE AND HUMIDITY REGULATION
4	BATHS, CLOSETS, SINKS AND SPITTOONS
136	BATTERIES, THERMOELECTRIC AND PHOTOELECTRIC
384	BEARINGS
5	BEDS
449	BEE CULTURE
402	BINDER DEVICE RELEASABLY ENGAGING APERTURE OR NOTCH OF SHEET
8	BLEACHING AND DYEING; FLUID TREATMENT AND CHEMICAL MODIFICATION OF TEXTILES AND FIBERS
10	BOLT, NAIL, NUT, RIVET AND SCREW MAKING
412	BOOKBINDING: PROCESS AND APPARATUS
281	BOOKS, STRIPS AND LEAVES
36	BOOTS, SHOES AND LEGGINGS
12	BOOT AND SHOE MAKING
175	BORING OR PENETRATING THE EARTH
215	BOTTLES AND JARS
188	BRAKES
14	BRIDGES
15	BRUSHING, SCRUBBING AND GENERAL CLEANING
D 4	BRUSHWARE (1)
300	BRUSH, BROOM AND MOP MAKING
24	BUCKLES, BUTTONS, CLASPS, ETC.
D25	BUILDING UNITS AND CONSTRUCTION ELEMENTS
441	BUOYS,RAFTS, AND AQUATIC DEVICES
452	BUTCHERING
79	BUTTON MAKING
40	CARD, PICTURE AND SIGN EXHIBITING
502	CATALYST, SOLID SORBENT, OR SUPPORT THEREFOR, PRODUCT OR PROCESS OF MAKING
59	CHAIN, STAPLE AND HORSESHOE MAKING

CLASSES ARRANGED IN ALPHABETICAL ORDER

CLASS	TITLE OF CLASS
297	CHAIRS AND SEATS
194	CHECK-ACTUATED CONTROL MECHANISMS
436	CHEMISTRY: ANALYTICAL AND IMMUNOLOGICAL TESTING
435	CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY
518	CHEMISTRY FISCHER-TROPSCH PROCESSES; OR PURIFICATION OR RECOVERY OF PRODUCTS THEREOF
260	CHEMISTRY, CARBON COMPOUNDS
204	CHEMISTRY, ELECTRICAL AND WAVE ENERGY
429	CHEMISTRY, ELECTRICAL CURRENT PRODUCING APPARATUS, PRODUCT AND PROCESS
71	CHEMISTRY, FERTILIZERS
585	CHEMISTRY, HYDROCARBONS
423	CHEMISTRY, INORGANIC
530	CHEMISTRY, NATURAL RESINS OR DERIVATIVES PEPTIDES OR PROTEINS; LIGNINS OR REACTION PRODUCTS THEREOF
23	CHEMISTRY, PHYSICAL PROCESSES
279	CHUCKS OR SOCKETS
209	CLASSIFYING, SEPARATING AND ASSORTING SOLIDS
134	CLEANING AND LIQUID CONTACT WITH SOLIDS
160	CLOSURES, PARTITIONS AND PANELS, FLEXIBLE AND PORTABLE
292	CLOSURE FASTENERS
192	CLUTCHES AND POWER-STOP CONTROL
118	COATING APPARATUS
401	COATING IMPLEMENTS WITH MATERIAL SUPPLY
427	COATING PROCESSES
341	CODED DATA GENERATION OR CONVERSION
372	COHERENT LIGHT GENERATORS
453	COIN HANDLING
431	COMBUSTION
342	COMMUNICATIONS, DIRECTIVE RADIO WAVE SYSTEMS AND DEVICES (E.G., RADAR, RADIO NAVIGATION)
367	COMMUNICATIONS, ELECTRICAL: ACOUSTIC WAVE SYSTEM AND DEVICES
340	COMMUNICATIONS, ELECTRICAL
343	COMMUNICATIONS, RADIO WAVE ANTENNAS
501	COMPOSITIONS: CERAMIC
252	COMPOSITIONS
106	COMPOSITIONS, COATING OR PLASTIC
7	COMPOUND TOOLS
159	CONCENTRATING EVAPORATORS
193	CONVEYERS, CHUTES, SKIDS, GUIDES AND WAYS
198	CONVEYERS, POWER-DRIVEN
406	CONVEYORS, FLUID CURRENT
147	COOPERING
460	CROP THRESHING OR SEPARATING
380	CRYPTOGRAPHY
30	CUTLERY
407	CUTTERS, FOR SHAPING
408	CUTTING BY USE OF ROTATING AXIALLY MOVING TOOL
83	CUTTING
329	DEMODULATORS

CLASSES ARRANGED IN ALPHABETICAL ORDER

CLASS	TITLE OF CLASS
433	DENTISTRY
232	DEPOSIT AND COLLECTION RECEPTACLES
D29	DEVICES AND EQUIPMENT AGAINST FIRE HAZARDS, FOR ACCIDENT PREVENTION AND FOR RESCUE
222	DISPENSING
202	DISTILLATION: APPARATUS
203	DISTILLATION: PROCESSES, SEPARATORY
201	DISTILLATION: PROCESSES, THERMOLYTIC
424	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS
514	DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS
34	DRYING AND GAS OR VAPOR CONTACT WITH SOLIDS
369	DYNAMIC INFORMATION STORAGE OR RETRIEVAL
360	DYNAMIC MAGNETIC INFORMATION STORAGE OR RETRIEVAL
172	EARTH WORKING
D 1	EDIBLE PRODUCTS
434	EDUCATION AND DEMONSTRATION
381	ELECTRICAL AUDIO SIGNAL PROCESSING SYSTEMS, AND DEVICES
364	ELECTRICAL COMPUTERS AND DATA PROCESSING SYSTEMS
439	ELECTRICAL CONNECTORS
310	ELECTRICAL GENERATOR OR MOTOR STRUCTURE
377	ELECTRICAL PULSE COUNTERS, PULSE DIVIDERS OR SHIFT REGISTERS: CIRCUITS AND SYSTEMS
338	ELECTRICAL RESISTORS

CLASS	TITLE OF CLASS
307	ELECTRICAL TRANSMISSION OR INTERCONNECTION SYSTEMS
323	ELECTRICITY,POWER SUPPLY, OR REGULATION SYSTEMS
320	ELECTRICITY, BATTERY AND CONDENSER CHARGING AND DISCHARGING
200	ELECTRICITY, CIRCUIT MAKERS AND BREAKERS
174	ELECTRICITY, CONDUCTORS AND INSULATORS
361	ELECTRICITY, ELECTRICAL SYSTEMS AND DEVICES
337	ELECTRICITY, ELECTROTHERMALLY OR THERMALLY ACTUATED SWITCHES
335	ELECTRICITY, MAGNETICALLY OPERATED SWITCHES, MAGNETS AND ELECTROMAGNETS
324	ELECTRICITY, MEASURING AND TESTING
318	ELECTRICITY, MOTIVE POWER SYSTEMS
388	ELECTRICITY, MOTOR CONTROL SYSTEMS
322	ELECTRICITY, SINGLE GENERATOR SYSTEMS
191	ELECTRICITY, TRANSMISSION TO VEHICLES
219	ELECTRIC HEATING
313	ELECTRIC LAMP AND DISCHARGE DEVICES
314	ELECTRIC LAMP AND DISCHARGE DEVICES, CONSUMABLE ELECTRODES
315	ELECTRIC LAMP AND DISCHARGE DEVICES, SYSTEMS
445	ELECTRIC LAMP OR SPACE DISCHARGE COMPONENT OR DEVICE MANUFACTURING
363	ELECTRIC POWER CONVERSION SYSTEMS
392	ELECTRIC RESISTANCE HEATING DEVICES

CLASSES ARRANGED IN ALPHABETICAL ORDER

CLASS	TITLE OF CLASS
902	ELECTRONIC FUNDS TRANSFER
187	ELEVATORS
227	ELONGATED-MEMBER-DRIVING APPARATUS
474	ENDLESS BELT POWER TRANSMISSION SYSTEMS AND COMPONENTS
229	ENVELOPES, WRAPPERS AND PAPERBOARD BOXES
D23	ENVIRONMENTAL HEATING AND COOLING, FLUID HANDLING AND SANITARY EQUIPMENT
D 7	EQUIPMENT FOR PREPARING OR SERVING FOOD OR DRINK NOT ELSEWHERE SPECIFIED
D13	EQUIPMENT FOR PRODUCTION, DISTRIBUTION OR TRANSFORMATION OF ENERGY (1)
371	ERROR DETECTION/CORRECTION AND FAULT DETECTION/RECOVERY
37	EXCAVATING
411	EXPANDED, THREADED, DRIVEN, HEADED, TOOL-DEFORMED, OR LOCKED-THREADED FASTENER
92	EXPANSIBLE CHAMBER DEVICES
149	EXPLOSIVE AND THERMIC COMPOSITIONS OR CHARGES
168	FARRIERY
256	FENCES
42	FIREARMS
182	FIRE ESCAPES, LADDERS, SCAFFOLDS
169	FIRE EXTINGUISHERS
43	FISHING, TRAPPING AND VERMIN DESTROYING
383	FLEXIBLE BAGS
141	FLUENT MATERIAL HANDLING, WITH RECEIVER OR RECEIVER COACTING MEANS
303	FLUID-PRESSURE BRAKE AND ANALOGOUS SYSTEMS
137	FLUID HANDLING
416	FLUID REACTION SURFACES (I.E., IMPELLERS)
239	FLUID SPRINKLING, SPRAYING AND DIFFUSING
99	FOODS AND BEVERAGES: APPARATUS
426	FOOD OR EDIBLE MATERIAL: PROCESSES, COMPOSITIONS AND PRODUCTS
450	FOUNDATION GARMENTS
410	FREIGHT ACCOMMODATION ON FREIGHT CARRIER
44	FUEL AND RELATED COMPOSITIONS
110	FURNACES
D 6	FURNISHINGS
D21	GAMES, TOYS, AND SPORTS GOODS
261	GAS AND LIQUID CONTACT APPARATUS
55	GAS SEPARATION
48	GAS, HEATING AND ILLUMINATING
409	GEAR CUTTING, MILLING, OR PLANING
935	GENETIC ENGINEERING: RECOMBINANT DNA TECHNOLOGY,HYBRID OR FUSED CELL TECHNOLOGY AND RELATED MANIPULATIONS OF NUCLEIC ACIDS
33	GEOMETRICAL INSTRUMENTS
65	GLASS MANUFACTURING
294	HANDLING, HAND AND HOIST-LINE IMPLEMENTS
54	HARNESS
56	HARVESTERS
237	HEATING SYSTEMS
432	HEATING

CLASSES ARRANGED IN ALPHABETICAL ORDER

CLASS	TITLE OF CLASS
165	HEAT EXCHANGE
108	HORIZONTALLY SUPPORTED PLANAR SURFACES
368	HOROLOGY: TIME MEASURING SYSTEMS OR DEVICES
405	HYDRAULIC AND EARTH ENGINEERING
362	ILLUMINATION
382	IMAGE ANALYSIS
494	IMPERFORATE BOWL. CENTRIFUGAL SEPARATORS
254	IMPLEMENTS OR APPARATUS FOR APPLYING PUSHING OR PULLING FORCE
376	INDUCED NUCLEAR REACTIONS, SYSTEMS AND ELEMENTS
336	INDUCTOR DEVICES
373	INDUSTRIAL ELECTRIC HEATING FURNACES
123	INTERNAL-COMBUSTION ENGINES
63	JEWELRY
D11	JEWELRY, SYMBOLIC INSIGNIA AND ORNAMENTS
403	JOINTS AND CONNECTIONS
277	JOINT PACKING
289	KNOTS AND KNOT TYING
280	LAND VEHICLES
278	LAND VEHICLES, ANIMAL DRAFT APPLIANCES .
296	LAND VEHICLES, BODIES AND TOPS
298	LAND VEHICLES, DUMPING
301	LAND VEHICLES, WHEELS AND AXLES
69	LEATHER MANUFACTURES
D26	LIGHTING (1)
122	LIQUID HEATERS AND VAPORIZERS
210	LIQUID PURIFICATION OR SEPARATION
70	LOCKS
184	LUBRICATION
D15	MACHINES, NOT ELSEWHERE SPECIFIED
74	MACHINE ELEMENTS AND MECHANISMS
282	MANIFOLDING
493	MANUFACTURING CONTAINER OR TUBE FROM PAPER; OR OTHER MANUFACTURING FROM A SHEET OR WEB
440	MARINE PROPULSION
D34	MATERIAL OR ARTICLE HANDLING EQUIPMENT (1)
414	MATERIAL OR ARTICLE HANDLING
73	MEASURING AND TESTING
D10	MEASURING, TESTING OR SIGNALLING INSTRUMENTS (1) (2)
124	MECHANICAL GUNS AND PROJECTORS
D24	MEDICAL AND LABORATORY EQUIPMENT
186	MERCHANDISING
266	METALLURGICAL APPARATUS
72	METAL DEFORMING
164	METAL FOUNDING
228	METAL FUSION BONDING
76	METAL TOOLS AND IMPLEMENTS, MAKING
148	METAL TREATMENT
29	METAL WORKING
196	MINERAL OILS: APPARATUS
208	MINERAL OILS: PROCESSES AND PRODUCTS
299	MINING OR IN SITU DISINTEGRATION OF HARD MATERIAL

CLASSES ARRANGED IN ALPHABETICAL ORDER

CLASS	TITLE OF CLASS
328	MISCELLANEOUS ELECTRON SPACE DISCHARGE DEVICE SYSTEMS
16	MISCELLANEOUS HARDWARE
D99	MISCELLANEOUS
332	MODULATORS
91	MOTORS, EXPANSIBLE CHAMBER TYPE
185	MOTORS, SPRING, WEIGHT AND ANIMAL POWERED
180	MOTOR VEHICLES
49	MOVABLE OR REMOVABLE CLOSURES
800	MULTICELLULAR LIVING ORGANISMS AND UNMODIFIED PARTS THEREOF
370	MULTIPLEX COMMUNICATIONS
D17	MUSICAL INSTRUMENTS
84	MUSIC
163	NEEDLE AND PIN MAKING
D19	OFFICE SUPPLIES,ARTISTS' AND TEACHERS' MATERIALS
351	OPTICS, EYE EXAMINING, VISION TESTING AND CORRECTING
353	OPTICS, IMAGE PROJECTORS
356	OPTICS, MEASURING AND TESTING
352	OPTICS, MOTION PICTURES
350	OPTICS, SYSTEMS AND ELEMENTS
89	ORDNANCE
556	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
548	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
536	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
564	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
552	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
544	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
546	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
534	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
532	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
568	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
560	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
562	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
540	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
570	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
549	ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES
558	ORGANIC COMPOUNDS -- PART OF THE 532-570 SERIES
331	OSCILLATORS
D 9	PACKAGES AND CONTAINERS FOR GOODS (1)
224	PACKAGE AND ARTICLE CARRIERS
53	PACKAGE MAKING
162	PAPER MAKING AND FIBER LIBERATION
930	PEPTIDE OR PROTEIN SEQUENCE
512	PERFUME COMPOSITIONS
D28	PHARMACEUTICAL, COSMETIC PRODUCTS, AND TOILET ARTICLES
355	PHOTOCOPYING

CLASSES ARRANGED IN ALPHABETICAL ORDER

CLASS	TITLE OF CLASS
D16	PHOTOGRAPHY AND OPTICAL EQUIPMENT
354	PHOTOGRAPHY
358	PICTORIAL COMMUNICATION; TELEVISION
138	PIPES AND TUBULAR CONDUITS
285	PIPE JOINTS OR COUPLINGS
475	PLANETARY GEAR TRANSMISSION SYSTEMS AND COMPONENTS
111	PLANTING
PLT	PLANTS
47	PLANT HUSBANDRY
264	PLASTIC AND NONMETALLIC ARTICLE SHAPING OR TREATING: PROCESSES
425	PLASTIC ARTICLE OR EARTHENWARE SHAPING OR TREATING: APPARATUS
419	POWDER METALLURGY - PROCESSES
60	POWER PLANTS
100	PRESSES
290	PRIME-MOVER DYNAMO PLANTS
283	PRINTED MATTER
D18	PRINTING AND OFFICE MACHINERY
101	PRINTING
422	PROCESS DISINFECTING, DEODORIZING, PRESERVING OR STERILIZING, AND CHEMICAL APPARATUS
623	PROSTHESIS (I.E., ARTIFICIAL BODY MEMBERS), PARTS THEREOF OR AIDS AND ACCESSORIES THEREFOR
375	PULSE OR DIGITAL COMMUNICATIONS
417	PUMPS
150	PURSES, WALLETS,AND PROTECTIVE COVERS
250	RADIANT ENERGY
430	RADIATION IMAGERY CHEMISTRY - PROCESS, COMPOSITION OR PRODUCT
104	RAILWAYS
238	RAILWAYS, SURFACE TRACK
213	RAILWAY DRAFT APPLIANCES
258	RAILWAY MAIL DELIVERY
105	RAILWAY ROLLING STOCK
246	RAILWAY SWITCHES AND SIGNALS
295	RAILWAY WHEELS AND AXLES
220	RECEPTACLES
346	RECORDERS
D14	RECORDING, COMMUNICATION OR INFORMATION RETRIEVAL EQUIPMENT
503	RECORD RECEIVER HAVING PLURAL LEAVES OR A COLORLESS COLOR FORMER, METHOD OF USE OR DEVELOPER THEREFOR
62	REFRIGERATION
235	REGISTERS
152	RESILIENT TIRES AND WHEELS
404	ROAD STRUCTURE, PROCESS AND APPARATUS
901	ROBOTS
418	ROTARY EXPANSIBLE CHAMBER DEVICES
415	ROTARY KINETIC FLUID MOTORS OR PUMPS
464	ROTARY SHAFTS, GUDGEONS, HOUSINGS AND FLEXIBLE COUPLINGS FOR ROTARY SHAFTS
109	SAFES, BANK PROTECTION AND RELATED DEVICES
D20	SALES AND ADVERTISING EQUIPMENT

CLASSES ARRANGED IN ALPHABETICAL ORDER

CLASS	TITLE OF CLASS
234	SELECTIVE CUTTING (E.G., PUNCHING)
437	SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS
225	SEVERING BY TEARING OR BREAKING
112	SEWING
270	SHEET-MATERIAL ASSOCIATING
271	SHEET FEEDING OR DELIVERING
413	SHEET METAL CONTAINER MAKING
114	SHIPS
116	SIGNALS AND INDICATORS
241	SOLID MATERIAL COMMINUTION OR DISINTEGRATION
75	SPECIALIZED METALLURGICAL PROCESSES, COMPOSITIONS FOR USE THEREIN, CONSOLIDATED METAL POWDER COMPOSITIONS, ETC.
206	SPECIAL RECEPTACLE OR PACKAGE
267	SPRING DEVICES
365	STATIC INFORMATION STORAGE AND RETRIEVAL
249	STATIC MOLDS
52	STATIC STRUCTURES, E.G., BUILDINGS
428	STOCK MATERIAL OR MISCELLANEOUS ARTICLES
125	STONE WORKING
126	STOVES AND FURNACES
127	SUGAR, STARCH AND CARBOHYDRATES
505	SUPERCONDUCTOR TECHNOLOGY - APPARATUS, MATERIAL, PROCESS
248	SUPPORTS
312	SUPPORTS, CABINET STRUCTURES
211	SUPPORTS, RACKS
604	SURGERY
606	SURGERY
128	SURGERY
600	SURGERY
520	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES
525	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES
523	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES
522	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES
521	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES
528	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES
527	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES
524	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES
526	SYNTHETIC RESINS OR NATURAL RUBBERS -- PART OF THE CLASS 520 SERIES
455	TELECOMMUNICATIONS
178	TELEGRAPHY
379	TELEPHONIC COMMUNICATIONS
135	TENTS, CANOPIES, UMBRELLAS AND CANES
87	TEXTILES, BRAIDING, NETTING AND LACE MAKING
26	TEXTILES, CLOTH FINISHING
19	TEXTILES, FIBER PREPARATION

CLASSES ARRANGED IN ALPHABETICAL ORDER

CLASS	TITLE OF CLASS
68	TEXTILES, FLUID TREATING APPARATUS
38	TEXTILES, IRONING OR SMOOTHING
66	TEXTILES, KNITTING
28	TEXTILES, MANUFACTURING
57	TEXTILES, SPINNING, TWISTING AND TWINING
139	TEXTILES, WEAVING
D 5	TEXTILE, OR PAPER YARD GOODS; SHEET MATERIAL (1)
374	THERMAL MEASURING AND TESTING
D27	TOBACCO AND SMOKERS' SUPPLIES
131	TOBACCO
132	TOILET
D 8	TOOLS AND HARDWARE
81	TOOLS
173	TOOL DRIVING OR IMPACTING
291	TRACK SANDERS
D12	TRANSPORTATION (1)
D 3	TRAVEL GOODS AND PERSONAL BELONGINGS
212	TRAVERSING HOISTS
190	TRUNKS AND HAND CARRIED LUGGAGE
334	TUNERS
82	TURNING
400	TYPEWRITING MACHINES
199	TYPE CASTING
276	TYPE SETTING
27	UNDERTAKING
171	UNEARTHING PLANTS OR BURIED OBJECTS
251	VALVES AND VALVE ACTUATION
293	VEHICLE FENDERS
98	VENTILATION
D32	WASHING, CLEANING, OR DRYING MACHINE
333	WAVE TRANSMISSION LINES AND NETWORKS
177	WEIGHING SCALES
166	WELLS
157	WHEELWRIGHT MACHINES
305	WHEEL SUBSTITUTES FOR LAND VEHICLES
231	WHIPS AND WHIP APPARATUS
242	WINDING AND REELING
140	WIREWORKING
245	WIRE FABRICS AND STRUCTURE
217	WOODEN RECEPTACLES
144	WOODWORKING
142	WOOD TURNING
269	WORK HOLDERS
378	X-RAY OR GAMMA RAY SYSTEMS OR DEVICES

CLASS PLT PLANTS

1 ROSES
2 .Climbers
3 ..White or yellow
4 ..Orange or salmon
5 ..Pink
6 ..Red
7 .Miniatures
8 ..White or yellow
9 ..Pink
10 ..Red
11 .Hybrid teas or grandifloras
12 ..Red bicolor
13 ..Striped colors
14 ..White
15 ..Yellow
16 ..Orange
17 ..Salmon
18 ..Light to medium pink
19 ..Dark pink
20 ..Light to medium red
21 ..Dark red
22 .Floribundas or polyanthas
23 ..White
24 ..Yellow
25 ..Salmon
26 ..Light to medium pink
27 ..Dark pink
28 ..Light to medium red
29 ..Dark red
30 NUTS (INCLUDING ORNAMENTAL VARIETIES)
31 .Pecans
32 .Walnuts
33 FRUITS (EDIBLE AND FLESHY, BUT ALSO INCLUDING ORNAMENTAL VARIETIES)
34 .Apples (including crabapples)
35 ..Sports of "Delicious"
36 .Pears
37 .Cherries
38 .Plums or prunes
39 .Apricots
40 .Nectarines
41 ..Yellow-fleshed
42 .Peaches
43 ..Yellow-fleshed
44 .Avocados
45 .Citrus
46 .Brambles (i.e., the genus Rubus)
47 .Grapes
48 .Strawberries
49 ..Everbearing
50 CONIFERS
51 BROADLEAF TREES
52 .Honey locusts
53 .Poplars
54 SHRUBS OR VINES
55 .Azaleas or rhododendrons
56 ..Light to medium pink
57 ..Dark pink to red
58 .Barberries
59 .Buddleias
60 .Camellias
61 ..Light to medium pink
62 ..Dark pink to red
63 .Euonymus
64 .Flowering quinces
65 .Hollies
66 .Lilacs
67 .English ivies (i. e., Hedera helix varieties)
68 HERBACEOUS FLOWERING PLANTS
69 .African violets
70 .Carnations or pinks
71 ..Light to medium pink
72 ..Dark pink
73 ..Red
74 .Chrysanthemums
75 ..Cushion
76 ..Decorative (i.e., double-flowered)
77 ...White
78 ...Yellow
79 ...Orange
80 ...Light to medium pink
81 ...Dark pink
82 ...Red
83 .Freesias
84 .Fuchsias
85 .Gladioli
86 .Poinsettias
87 .Verbenas
88 HERBACEOUS ORNAMENTAL FOLIAGE PLANTS (INCLUDING LAWN GRASSES)
89 MISCELLANEOUS (E.G., MINTS, HOPS, MUSHROOMS, SUGAR CANE OR TOBACCO)

1	MISCELLANEOUS
2	GUARDS AND PROTECTORS
2.1 R	.Diving type
2.1 A	...Space suits
2.5	.Penetration resistant
410	.For wearer's head
4	..Insect repelling
5	..Firemen's helmets
6	..Military or aviators' helmets
7	..Heat resistant
8	...High temperature
411	..Including energy-absorbing means
412	...By diverse laminae
413	...By fluid-containing cushion
414	...By interior pads
415	....Including neck pad
416	...By suspension rigging
417	..Including adjustment for wearer's head size
418	...For circumference of crown
419	....And height of crown
420	....By plural-part rigging
421	..Including helmet-retention means
422	..With article-attaching means
423	..And ears
424	..And face
425	..Sport headgear
15	..Eye shields (e. g., hoodwinks or blinds, etc.)
10	...Hat or cap attachments
11	...Hand or body supported
12	...Shades
13	....Spectacle attachments
426	...Goggles
427	....Included in shield for face
428	.....With seal for face
429	......And detachable face plate
430	......And wide-angle lens
431	....Included in shield for eyes
432	.....Having anti-glare shield or lens
433	......By limited-view opening
434	.....Having lens-cover plate
435	.....Having anti-fog shield or lens
436	......By ventilation of shield
437	.......Via tortuous air path
438	.....With movable element external
439	.....Having unitary frame
440	.....With seal (e. g., cup) for each eye
441	......Detachable lens-mounting
442	.....Having frame for each eye
443	......Detachable lens-mounting
444	......Suspended within a goggle
445	.....Connected at center
446	......By nose-rest
447	.....Having wide-angle lens
448	....Including temple element
449	.....And side shield
450	.....And connection to frame
451	....Pivoted side shield
452	....On head band
453	....On horizontal pivot
454	....Foldable or collapsible
9	..Face
16	.Hand or arm
17	..Handle or rein attachments
18	..Boxing gloves
19	..Baseball gloves
20	..Hand pads
21	..Finger cots or protectors
22	.Leg
23	..Trouser attachments
24	..Knee pads or rests
	BODY BRACES AND SUPPORTS
44	.Shoulder and back
45	.Shoulder
46	GARMENT PROTECTORS
47	.Skirts
48	.Aprons
49 R	..Bibs
49 A	....Combined or associated with trays or tray covers
50	..Barbering
51	..Workmen's
52	..Ties and supports
53	.Armpit shields
54	..Combined with garments
55	..Body supported
56	..Dress-attaching features
57	..Frames
58	..Methods of making
59	.Sleeve
60	.Collar or cuff
61	.Stocking
62	.Knee
63	.Try-on hat linings
64	BURIAL GARMENTS
65	FUR GARMENTS
66	.Muffs
67	BATHING GARMENTS
68	.Caps
69	BODY GARMENTS
69.5	.Bag type
	.Union type
70	..Separable
	..Skirted
71	...Combined bifurcated
72	...Convertible bifurcated
73	...Underwear
74	...Dresses
75	...Children's
76	...Waistbands, adjustable or elastic
	..Bifurcated
77	...Men's outer shirts
78 R	...Underwear
78 A	.....Combination nether
78 B	.....Seat and crotch
78 C	.....Elastic insert
78 D	.....Supporting
79	...Trousers and overalls
80	...Children's
81	...Heat resistant
82	...Water resistant
83	...Bed garments
84	.Hooded
85	.Overcoats
86	..Convertible to bifurcated
87	..Waterproof
88	.Capes
89	..Convertible tents
90	.Sweaters
91	.Mufflers
92	.Back and chest protectors
93	.Coats
94	..Hunters' and special-article carrying
95	..Combined with vest or shirt
96	..Front closures
97	..Linings
98	..Collars
99	...Springs
100	...Fasteners
101	..Putting-on accessories
102	.Vests
103	..Combined with shirt or dickey
	.Waists
104	..Nursing
105	..Dress
106	..Blouses
107	...Garment supporting
108	..Jacket type
109	..Underwear
110	...Corset covers
111	...Infants'
112	...Garment supporting
	.Shirts
113	..Undergarments
114	..Bed garments

BODY GARMENTS
.Shirts
115 ..Men's outer garments
116 ...With attached collars
117 ...With garment supporters
118 ...Bosom structure
119 ....Detachable
120 ....Supporters and protectors
121 ...Overlaps
122 ...Yokes, patches and facings
123 ...Cuffs
124 ....Detachable
125 ...Sleeves
126 ....Detachable
127 ...Neckbands
128 ...Closures
129 .Collars
130 ..Combined with neckties
131 ..Soft fold type
132 ...Supporters
133 ..Women's wear
134 ...Supporters
135 ..Waterproof
136 ..Paper
137 ..Necktie-engaging devices
138 ...Easy-slide structure
139 ..Attaching to shirts
140 ...Ends
141 R ..Closures
141 A ....Collar tab connector
142 ..Bindings
143 ..Blanks and processes
144 .Neckties
145 ..Attaching features
146 ..Cut-fabric type
147 ..Knit-fabric type
148 ..Knot structure
149 ...Made up
150 ....Four-in hand type
151 ....Bow type
152 R ...Forms and retainers
152 A .....Necktie formers, hook supported
153 ....Four-in hand type
154 ....Bow type
155 ..Band structure
156 ...Attachments
157 ..End structure
HAND OR ARM COVERINGS
158 .Mittens
159 .Gloves
160 ..Attachments
161 R ..Workmen's
161 A ....For sports
162 ..Wrists
163 ..Fingers
164 ..Linings
165 ..Welts
166 ..Staying
167 ..Materials
168 ...Rubber
169 ..Patterns and processes
170 .Wristlets
171 HEAD COVERINGS
171.1 .Separable crown section type
171.2 .With therapeutic device, medicament or perfume
171.3 .With forced air circulator
171.4 .With movable closure for opening
171.5 ..Flexible material closure
171.6 ...Crown fold type
171.7 ..Movable along crown surface
171.8 ...Endless band type
172 .Flapped
173 .With masks
173.5 .With outward bulge in crown
181 .With sweats or other supplementary head engaging member
181.2 ..Discontinuous contact
181.4 ...Removable or retractable
181.6 ...With perforated or slotted sweat or head engaging member
181.8 ...Transversely grooved head engaging member
182.1 ..Crown spacing
182.2 ...Removable or retractable spacer
182.3 ...With perforated or slotted sweat or head engaging member
182.4 ...Coil spacer
182.5 ...Coextensively transversely grooved spacer
182.6 ...Tongue, stud or block spacer
182.7 ...Through-passaged spacer
182.8 ..Perforated
183 ..Head size adjustment
184 ..Sewing
184.5 .With external air deflector, or weather guard for crown opening
174 .Toilet
202 .Hoods
203 ..With mufflers
204 ..Bonnet type
205 ..Helmet type
206 .Face coverings
207 .Scarfs and veils
208 .Muffs
209 ..Ear
209.1 .Combined or convertible
209.2 ..Illuminator carrying (e.g., miner's lamp support)
196 ..Caps
209.3 .With interrupted crown
209.4 ..With superposed or inset band
209.5 ..Inserted perforated or mesh section
209.7 ..With perforation
175 .Hats
177 ..Shade
178 ..Brim bindings
179 ..Bands
180 ..Frames
185 R ..Attachments
185 B ....Hat shape retainers
185 C ....Conformers
186 ...Trimmings
187 ...Covers
188 ...Hangers
189 ...Guard cords
190 ...Linings or tips
191 ...Extension brims
192 ..Materials and processes
193 ...Straw type
194 ...Cloth or felt type
195 .Caps
198 ..Women's wear
197 ..Adjustable size
199 ..Attachments
200 ..Materials
201 ...Knitted
NETHER GARMENTS
210 .Bustles
211 .Skirts
212 ..Combined bifurcated
213 ..Convertible bifurcated
214 ..Riding
215 ..With pads or distenders
216 ..Hoop
217 ..Lifters and holders
218 ..Placket closures
219 ..Waist closures
220 ..Waistbands
221 ...Adjustable or elastic
222 ..Edge bindings or protectors
223 ..Supporters
.Bifurcated
400 ..Underwear
401 ...With particular reinforcing or elastic insert

	NETHER GARMENTS
	.Bifurcated
	..Underwear
402	...One-piece
403	...Particular to male
404	....With leg portions
405	....With particular fly structure
406	...Particular to female
407	....With leg portion
408	.....Open or openable crotch
409	....Panty hose
227	..Trousers or overalls
228	...Knee length
229	...Waist or shirt supported
230	...Suspender attachments
231	...Stays or protectors
232	....Bottom
233	...Leg-straightening attachments
234	...Flies
235	...Waist closures
236	...Waistbands
237	....Adjustable or elastic
238	..Trunks
239	.Stockings
240	..Supporting features
241	..Reinforcing
242	..Leggings
	GARMENT SUPPORTERS AND RETAINERS
300	.Combined with other than garment supporter structure
301	.Convertible or reversible
302	.Rigid vertical type
303	..Hose supporting
304	.With connected substantially spaced holders for plural garments
305	..Combined with shoulder straps
306	..Supporting to hose only
307	..Plural waistline garments only
308	.Plural encircling type
309	.Partially encircling limb or torso type
310	.Shoulder suspension and torso encircling
311	.Torso or limb encircling
312	..With additional holding devices or features
313	...Pendant limb encircling means
314	...With pendant holding means
315	....With plural holding means
316	....Wrap around and end attached holder
317	....With member between ends of encircling strip
318	...On member between ends of encircling strip
319	...Detachable from or slidable on belt
320	...With non-fastening holding means
321	..With fastenable device to form loop
322	...Overlapping end and buckle type
323	.Strip connected spaced holders
324	..With springs
325	..With step adjustment
326	..Plural, crossed or diverging suspension strips or strands
327	...Crossed or closed loop shoulder type
328	....With crossed suspension strap features
329	....Garment supporting running strip or strand
330	...With running strip or strand
331	....Plural loop type
332	....Connection at bottom of strip or strand V
333	...With detachable or movable feature between strips
334	....With pivot member normal to strip
335	..Hose supporting
336	.Elements
337	..Friction devices and/or twisters
338	..Belt, strap or strip constructions
339	...With springs or connected sections
340	...Suspender ends
341	..Saddle type cord retainers
342	...Openable or movable
243 R	GENERAL STRUCTURE AND METHODS
243 A	..Fabric types
243 B	..Blanks and patterns
244	.Trimmings
245	..Shoe ornaments
246	..Insignia
247	.Pockets
248	..Reinforced
249	..Article attaching feature
250	..Article-retaining feature
251	..Fastening attachments
252	..Closing attachments
253	..Multiple compartment
254	..Safety trap
255	.Stiffening or staying
256	..Elongated rod-like elements, e.g., stays
257	...Ends and end fasteners or retainers
258	...Materials
259	....Metal
260	.....Covered or encased, e.g., coated
260.1	......Surface bonded coating
261	.....Reinforced
262	.....Hinged
263	.....With fasteners
264	.....Formed wire
265	.Attaching buttons or fasteners
266	..Buttonhole strips
267	.Pads
268	..Shoulder
	.Sleeves or legs
269	..Adjustable length
270	..Closures
271	.Loops or hangers
272	.Linings
273	.Dress weights
274	.Bindings
275	.Seams
279	ADORNMENT HANDKERCHIEFS, GARMENT WORN
	******************************
	DIGESTS
	******************************
DIG 1	Ventilated garment
DIG 2	Reversible garment
DIG 3	Inflatable garment
DIG 4	Free swing garment
DIG 5	Waterproof garment with gutters
DIG 6	Pile type fastener
DIG 7	Medical garment
DIG 8	Rear-view mirror
DIG 9	Stocking-girdle relationship
DIG 10	Inflatable hat
DIG 11	Headband

662 RESTROOM OR BATHROOM SELF-CLEANING SYSTEMS
663 FLUSH CLOSET, WASH RECEPTACLE, AND BATHTUB OR SHOWER
664 FLUSH CLOSET OR URINAL AND WASH RECEPTACLE
665 .Wash receptacle water empties into toilet facility
666 DIAPER WASHING DEVICES
300 FLUSH CLOSET
300.1 .With toilet tissue holder
300.2 .With bedpan rinser
300.3 .With splash guard or water baffle
301 .Urinals only
302 ..Flush actuation automatically responsive to condition
303 ...Periodic flush
304 ...By radiant energy responsive means
305 ...By electric condition responsive means
306 ..Ventilated, i.e., noxious fume removal
307 ..Folding type
308 ..Pedal actuated flush
309 ..With disinfectant means
310 ..Vertical type
311 ..Bowl type
312 .Folding type
313 .With automatic flush responsive means
314 .With indicator
315 .With disposable container
316 .Reduced gravity environment type
317 .With recirculating means
318 ..Including specified filtering means
319 .With macerator
320 ..Including additional treatment
321 .With holding tank
322 ..And heater
323 ..And valve for emptying
324 .Manual selection of the amount of flush
325 ..Alternate unicyclic flush
326 ...Plural flush valves
327 ....In axial alignment
328 .Tank and bowl with plural connections, one being pneumatic
329 .Low profile tank and bowl
330 ..Seat actuated flush
331 ..Float-controlled valve
332 ..Pressure flush
333 .Normally empty tank
334 ..Pressure tank
335 ...With seat-actuated valve
336 ....And siphon bowl
337 ....And drain means
338 ..With seat-actuated valve
339 ...And drain means
340 .Plural receptacles
341 ..Diverse
342 ..Separate and distinct
343 .Overhead tank with bowl
344 ..Siphon bowl
345 .Plural flush, preliminary or subsequent
346 ..Including plural compartments in tank
347 .Ventilated, i.e., noxious fume removal
348 ..Bowl
349 ...Unitary with flush supply to bowl
350 ...Unitary with discharge from bowl
351 ....Trap or siphon
352 ...Annular ventilator
353 .Tank only
354 ..Pressure tank
355 ...Float-released outlet valve
356 ...Float outlet valve
357 ....Free floating
358 .....With guide (e.g., a cage)
359 ...Valve held open by flow
360 ...Dashpot-controlled outlet valve
361 ...Pneumatic or hydraulic adjustability
362 ...By air under pressure
363 ..With plural compartments
364 ...Single tank with divider
365 ...Pivotal compartment
366 ..With simultaneous common actuating means for supply and outlet valves
367 ...By fluid or electrical means
368 ..With outlet siphon
369 ...Including means to relieve trapped air
370 ....By releasing trapped air
371 ....By raising trapped air housing
372 ...Including means to immerse siphon
373 ...Pump starter
374 ...Jet starter
375 ...Including means to raise liquid level
376 ...Valve starter
377 ....By moving siphon
378 ..With outlet valve
379 ...With delay of valve closing
380 ....By pressure or suction control of valve
381 ....By float releasable latch
382 .....Tiltable or pivoted valve body
383 .....With overflow through valve closure
384 .....Latched actuator
385 ....By varying weight releasable latch
386 ....By shifting weight
387 ....By flow-responsive element in valve outlet
388 ....By retarding mechanism, e.g., dashpot
389 .....With overflow through valve closure
390 ...With overflow through valve closure
391 ....Float connected or float type valve
392 ...Swinging
393 ....Pivoted
394 ...Connected to float
395 ...Float type
396 ....Free floating during flush
397 ....Having seating guide
398 .....Cage type
399 .....Valve moves relative to guide through bottom of valve
400 .....Valve-attached seating element enters discharge pipe
401 .....Plural static guides
402 ....Having liquid receptacle open upwardly
403 ....Hollow
404 .....Open at bottom
405 ...Actuator
406 ....Electrical
407 ....Pneumatic or hydraulic
408 ....Pneumatic or hydraulic
409 .....With overhead tank
410 ....With overhead tank
411 ....Portion of linkage external to tank
412 ....Including flexible linkage element in tank(e.g., chain or cord)
413 ....Including articulated rigid linkage
414 .....Having stationary pivot within tank
415 ..Water saver
416 ..With lining
417 ..With connector or seal
418 ...Cover or housing for connector or seal
419 ..With support
420 .Bowl
420.1 ..With body-contacting nozzle
420.2 ..With heated bidet fluid
420.3 ..With bidet basin
420.4 ..With bidet nozzle
420.5 ...Integral with flush closet
421 ..Siphon discharge
422 ...With flush valve
423 ....With vacuum breaker
424 ...Extra trap or false trap
425 ...Siphonic jet at trap

	FLUSH CLOSET
	.Bowl
	..Siphon discharge
426	...With check valve
427	...Overflow inhibitor
428	...Configurated outlet
429	...Pan bowl
430	...Distinct from bowl
431	..Pump or suction-type discharge
432	...With flush supply pump
433	....Unitary with discharge pump
434	..Valved dischage
435	...With flush supply actuated by valved discharge
436	....By movement of seat or cover
437	....Float control of fluid in bowl
438	....Pivoted valve
439	.....With additional valve (e.g., draft control)
440	.....Pan type
441	...Pivoted valve
442	....Pan type
443	BIDETS
444	.With seat
445	.Bidet basin for flush closet
446	.Bidet bowl with drain
447	.Nozzle with seat
448	.Nozzle attachment
449	DRY CLOSETS
111.1	.With heating meas
111.2	..And cyclic control means
111.3	...Having seat actuator or interlock
111.4	..Fluid fuel burner
111.5	..Electric
111.6	..And separate drying zone
450	.Bedpans
451	..Disposable type
452	..With liner
453	..With deodorizing means
454	..With urinal
455	..With drain means
456	..Cushioned
457	..Accessories
458	.Automobile
114.1	..Urinal
459	.Chemical
460	.Field
461	.Plural
462	.With urinal
463	..Separate receiver
464	.With magazine
465	..Furniture type
466	..Valved bowl
467	..Movable receiver
468	..Seat operated
469	..Cover operated
470	..In cover
471	.Valved bowl
472	..Ventilated
473	..Seat or cover operated
474	.Vault type
475	..Ventilated
476	.Enclosed receptacle type
477	..Ventilated
478	..With arm or back support
479	.Receptacle type
480	..Invalid
481	..Muffler for liquid
482	..Ventilated
483	..With seat
484	..Flexible material
485	.Seat subclosure
486	..Seat or cover operated
144.1	.Urinal
144.2	..Disposable, entirely or a portion
144.3	..Contacting and conforming to anatomy
144.4	..Spout only
487	OPEN-WATER BARRIER

488	POOL TYPE
489	.Plural separate receptacles
490	.With cleaning means
491	.With wave-making means
492	.With water-jet means
493	.With heating means
494	.Combined or convertable
495	.Adjustable bottom
496	.Accessory
497	..Wave quelling
498	..Cover
499	...Air inflatable or supported
500	...Including storage area
501	....On pool bottom
502	....On a roll
503	...Including securing means
504	..Safety means
505	..Divider
506	.Construction details
507	..Including water inlet or outlet means
508	...And water level control
509	...And pump
510	...Gutter
511	....With handhold (e.g., life rail)
512	....Including weir
513	..Shape
514	CONVERTIBLE CLASS-TYPE APPARATUS
515	HAIR WASHING MACHINE OR DEVICE OR ACCESSORY
516	.Portable
517	.Combined
518	.With water supply means
519	.Head or neck receiving or supporting sink
520	.Shield or drain
521	..Supported by body
522	..With post-type support
523	.Body-portion rest
524	VAPOR OR HEAT IN BATH (E.G., SAUNA, STEAM BATH, OR SUDATORIUM)
525	.With additional means for washing
526	.Collapsible
527	..Flexible fabric supported by a folding frame
528	..With body support means
529	...Bed type
530	....With head or back rest
531	...Seat
532	....Fixed
533	.Conversion means
534	..Flexible cover
535	MEANS FOR APPLYING VAPOR OR HOT AIR DIRECTLY TO BODY OF USER
536	.With means for covering a majority of the user's body
537	.To the head or face
538	TUBS
539	.Plural tubs (i.e., all for bathing)
540	.With means for turning tub for aiding access
541	.With means for augmenting water flow
542	..Mixing gas into water (e.g., whirlpool bath)
543	...From bottom through a plurality of openings
544	..By pump
545	.With heating of tub structure
546	.Combined with diverse means
547	..Couch or bed
548	..Storage or support means
549	...Cabinet
550	....Pivoted tub
551	...Dressing table
552	..A complete and separate shower
553	..Basin or sink
554	...Relatively movable tub or basin
555	.With user access means in side of the tub

	TUBS
	.With user access means in side of the tub
556	..Pivoted door
557	.With movable closure
558	..Flexible type
559	.Convenience accessories
560	..Means for handling user
561	...Vertically and horizontally
562	....Horizontal movement is pivotal
563	.....Hydraulically operated
564	...Vertically, only (e.g., lifts)
565	....Supported by tub
566	.....Hydraulically operated
567	..Means for spraying user
568	...Located inside of the tub
569	....Conduit having rectilinearly spaced spray holes
570	...Mounted on support external to tub
571	..Support for user, static
572	...For infant
573	...Body type
574	....Foot
575	....Head or back
576	....Hand grip
577	.....Mounted on tub, only
578	....Seat
579	.....Supported by tub, only
580	..Liner or cover
581	...Mat type
582	....With antislip means
583	.....In contact with tub bottom
584	.Particular construction or configuration details
585	..Flexible material (e.g., collapsible, etc.)
586	...For infant
587	....Supported by folding frame
588	....Inflatable
589	..With integral body support
590	...Seat
591	..Rim supply
592	..Support structure
593	...For strengthening bottom or side
594	...Legs
595	..Means for securing tub in place
596	SHOWER (E.G. STALL, WITH WALLS, RECEPTOR, AND SPRAY)
597	.Combined with diverse means
598	.With heating means
599	.Collapsible or expandable
600	..Wall type
601	.Plural spray heads
602	.With self-contained water supply
603	..And pump
604	.With special feature for physically handicapped
605	.Convenience accessories
606	..Scrubber
607	..Movable closure
608	...Flexible type
609	..Shield or guard means
610	..Mounting or supporting means for movable closure
611	..Support for user
612	.Particular construction
613	..Of receptor
614	..Wall or panel
615	MEANS FOR SPRAYING USER
616	.With self-contained water supply
617	..Overhead-gravity feed
618	.Supported by neck or shoulder of user
619	WASH RECEPTACLES
620	.Emergency fountains
621	.With human body support
622	..Foot
623	.With proximity operated valve
624	.Wash fountain
625	.With water supply or waste-water tank
626	..And water control
627	..Having pivoted receptacle
628	.With cleaning brush, soap dispenser or holder
629	.With garbage receptor or tableware extractor
630	.With cabinet, shelf, or drawer
631	.With work surface
632	..Sink rim rests on work-surface recess below top surface
633	..Sink rim clamped to work-surface top by clamp means partly on sink
634	..Sink rim clamped to work surface
635	..Sink rim joined to work surface by molding frame
636	...Molding frame T-shaped
637	..Drainboard
638	.Combined
639	.Plural receptacles
640	..With drain
641	...Nested
642	...Dissimilar
643	.With support
644	..Pivoted
645	..Vertically adjustable
646	..Post
647	..Hanger
648	..Bracket
649	..Clamp
650	.With drain
651	..And overflow
652	..And strainer
653	..And water handling
654	.Attachments
655	..Disposable receptacle liner
656	..Drainboard, rack, or tray
657	..Receptacle or receptacle content protective device
658	..Receptacle splash or drip guard
659	..Infant bathing support
660	.Rim frames
661	MISCELLANEOUS
191	BATH, BASIN, AND RECEPTACLE FITTINGS
192	.Hot and cold supply
193	..Compartment tub
194	..Outlet valve
195	.Supply and outlet
196	..Bottom supply
197	.Outlet valve and trap
198	.Outlet valve and overflow
199	..Valve operator in overflow
200	..Valve operator outside
201	..Overflow valve in receptacle
202	..Overflow valve outside
203	.Outlet valve, operator outside receptacle
204	.Outlet valve or plug, operator inside receptacle
205	.Outlet valve or plug, float operated
206	.Receptacle overflow, closure or trap
207	.Airbound trap
208	.Compartment-tub outlet
209 R	VENTILATION
209 FF	..With fluid filter
210	.Railway car
211	.House plumbing
213	.Electric-motor pump
214	.Water-motor pump
215	.Water-jet pump
216	.Bowl structure or vent valve
217	.Seat structure
218	.Roof outlet
219	.Sewer
220	..Disinfecting
221	..Burner
222	DISINFECTION
222.1	.With screen

	DISINFECTION
223	.Dispensing to bowl
224	..Combined with flusher
225	.Dispensing to flush pipe
226	.Chemical holder in flush pipe
227	.Dispensing to flush tank
228	.Chemical holder in flush tank
229	.Chemical holder in seat
230	.Chemical holder in cover
231	.Chemical holder suspended in bowl
232	.Chemical chamber formed in bowl
233	.Seat and cover treating
234	SEATS AND COVERS
235	.Plural seats
236	.Hinges
237	SEATS
238	.Subclosure, seat operated
239	.Superposed
240	.Hinges
241	.Counterbalanced
242	COVERS FOR SEATS
243	.Destructible material
244	..Pad
245	...On seat
246	...On main cover
247	..Roll
248	BUFFERS AND DASHPOTS
249	FLUSH-VALVE OPERATORS
250	.Seat operated
251	SEAT AND COVER OPERATORS
252 R	CLOSET-BOWL SUPPORTS, COUPLINGS, AND DRIP CATCHERS
252 A	..Drip catchers
253	CLOSET-BOWL CLOSURES
254	CLOSET HEAD, FOOT, AND BODY RESTS
255	OBSTRUCTION REMOVERS AND CLOSURES
256	.Water supply
257	.Closet bowl
258	SPITTOONS
259	.Pocket
260	.Bar
261	.Disinfecting
262	.Flushing
263	..Dental
264	...Rotary member
265	..Hand pump
266	..Flush valve and outlet valve
267	.Covered
268	..Floor orifice
269	...Valved outlet
270	...Receptacle
271	..Hand operated
272	..Pedal operated
273	...Two-part cover
274	..Flexible material and holder
275	.Floor orifice
276	..Valved outlet
277	..Receptacle
278	.Agitator
279	.Reversible
280	.Floor controlled valve
281	.Gravity controlled valve
282	.Positively operated inlet valve
283	.Trapped liquid
284	.Gravity receptacle
285	.Flexible material and holder
286	STRAINERS AND STOPPERS
287	.Combined strainer, plug, or valve
288	.Combined strainer and pipe coupling
289	.Strainers in series
290	.Strainer, receptacle
291	..Depending
292	.Strainer
293	.Covers
294	..Disinfecting
295	.Plugs

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DIGESTS
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DIG 1	Plural connected floats
DIG 2	Disappearing bowl
DIG 3	Electric flushing
DIG 4	Garbage grinder
DIG 5	Urine guards
DIG 6	Heated seats
DIG 7	House plumbing fittings
DIG 8	Rubber seats
DIG 9	Methods
DIG 10	Water additive or substitute
DIG 11	Oil toilet
DIG 12	Aerobic (decomposing) toilet
DIG 13	Toilet having deformable trap
DIG 14	Pipe strainers
DIG 15	Prison bathrooms
DIG 16	Deformable toilet traps
DIG 17	Electrolytic toilets
DIG 18	Bathroom fixture liners
DIG 19	Liquid-solid separators

CLASS 5 BEDS

1	MISCELLANEOUS
2.1	COMBINATION FURNITURE
3	.Table beds
4	..Outfolding sides
5	..Unfolding top
6	..Folding bed enclosed
7	..Sofa form
8	NESTED, TWIN AND STACKED
9.1	BERTH OR BUNK
10.1	WINDOW, FLOOR, CEILING, OR ROOM TO ROOM
10.2	.Bed stored in ceiling
11	ADJUSTABLE HEIGHT
12.1	SOFA BED
12.2	.Knockdown sofa bed
13	.Link supported unfolding
14	.Beds stowed under seat
15	.Suspended bottoms
16	.Vertical unfolding sections
17	.Extension
18.1	..Slidable section
19	...Front and back extension
20	...Slide with rotation
21	...Change of level
22	..Link walk-over
23	..Traversing seat with rotary follower section
24	.Rotary seats
25	..Unfolding sections on seat bottom
26.1	..Seat rotator
27	.Pivoted seat over forward invertible section
28	.Unfolding seat
29	..Leg supported
30	..Extension supported
31	..With rising inner section
32.1	...Pivoted hinge plate
33	....Inner section seat post
34	....Intermediate section seat post
35	..Double unfolding (including zigzag)
36	..Double unfolding with rising inner section
37.1	.Reverting back
38	..Leg supported
39	..Extension supported
40	..Wing supported
41	..Extension seat
42	..Unfolding seat
42.1	..Unfolding back section
43	.Forward-turning back
44.1	..Advancing and unfolding seat
45	..Traversing over seat
46.1	..Carried by seat to alignment
47	.Sliding and pivoting back
48	..Increasing seat
49	.Drop or standing leaf
50	.Drop leaf only
51.1	.Bed element
52	..Sofa head and arm rest
53.1	..Headboard or footboard
53.2	...Pivoted headboard
53.3	...Pivoted footboard
54	..Front board
55.1	..Latch
56	..Assisting spring
57.1	..Hinge
57.2	...Having anti-pivoting means
58	..Receptacle, drawer, or compartment
59.1	..Shiftable back or seat
93.1	CRIB
93.2	.Convertible
60	INVALID BEDS
61	.Patient turners
62	.Tilting frame
63	.Vertically moving frame
64	..Independent end lift
65	..Lowerable
66	.Sectional
67	..Adjustable head and foot sections
68	...Independent adjustment
69	...Adjustable leg and thigh sections
	.Heat sections
70	..Combined back rest and table
71	..Free
72	..Attached
73	...Movable foot
74 R	...Rack adjustment
74 B	.....Worm and pinion
75	...Pivoted ratchets
76	...Direct cable actuation
77	...Actuated pivoted prop
78	...Spring or weight actuation
79	...Cam and screw actuated
80	.Foot sections
81 R	.Invalid lift and transfer
81 B	...Horizontally movable
81 C	...Flexible, endless lifting belt
82 R	..Field stretchers
82 B	....Thin, flexible body-supporting strips
83	..Hoisting devices
84	...Attachable
85	...Detached surrounding frames
86	...Free traveling
87	...Cranes
88	...Winding hoists
89	..Stretcher bottoms and slings
90	.Toilets
94	.Automobile
95	.Bedstead attached
96	..Substowage
97	.Closed
98.1	.Fabric
98.2	..Crossed legs
98.3	..Hammock type
99.1	.Folding
100	.Movable guards
101	CRADLES
102	.Folding
103	.Link supported
104	.Spring supported
105	.Rocker base
106	..Throw-off rockers and locking devices
107	..Attachable rockers
108	.Rocking devices
109	..Mechanical motors
110	COTS
111	.Sectional
112	CAMP BEDS
113	.Canopied
114	.Knockdown
115	.Lazy-tong supports
116	.Transverse collapse
117	..Sectional rails
118	VEHICLE ATTACHED
119	.Outside
120	HAMMOCKS
121	.With canopy
122	.Fabric hammocks
123	..Spreaders
124	.Couch hammocks
125	..Adjustable back or windshield
126	..Convertible to bedstead
127	.Supports
128	..Hammock and canopy support
129	..Subsupport
130	..Ends and ridgepole
131	BEDSTEADS
132	.Three part
133	.Upending
134	..Tumble over
135	..Detachable
136	..Pivoting
137	..Shifting fulcrum
138	...Successive pivoting
139	...Single struts
140	...Strut and guide

	BEDSTEADS
	.Upending
	..Shifting fulcrum
141	...Suspending link and guide
142	...Double links
143	...Single guide
144	...Double guide
145	..Traveling foot
146	..Sliding frame on upending carrier
147	..Sliding and pivoted frame
148	..Pivoted frame on collapsing head and foot
149	..Sectional
150.1	...Upending major section
151	...Outfolding sides
152	....Fixed pivots
153	....Moving pivots
154	...Falling center
155	...Pivoted inner with outfolding foot section
156	...Laterally increasing
157	...Telescoping
158	...Flexible upward sliding
159.1	..Case
160	...Front panels
161	...Wing fronts
162	..Stands
163	..Screen and curtain
164.1	..Counterbalance spring
165	...Tension bottom
166.1	..Counterbalance weight
166.2	...Having cord and pulley
167	..Locks
168	..Base props
169	..Suspended bottoms
170	..Shifters
171	...Door beds
172	...Jamb rounders
173	...Rotary bases
174	.Folding
175	..Extension
176.1	..Transverse collapse
177	..Horizontal infolding side rails
178	..Folding head and foot
179	...Folding legs and ends
180	....Cofolding legs and ends
181	.Extension
182	..Lazy tongs
183	..Extensible headboards
184	..Extension side rails
185	..Lateral sections
400	.Having bottom
401	..And integral pad
402	...Having upholstery cover on pad and means to secure cover to pad or bottom
403	....By wedge or clamp
404	.....Spring clamp
405	.....With means to urge opposed clamping surfaces together
406	.....Deformable clamp and bead
407	......Bead is in or part of cover
408	....By tufting
409	....By cover-penetrating fastener
410	.....Bottom-carried impaling prong
411	..And removable mattress or cushion, and means to fix its position on the bottom
412	..Movable relative to bedstead
	..Fabricated elastic flats
186.1	...Surface
187	....Canvas
188	....Linkages
189	....Continuous spring elements
190	....Cables and cords
191	....Thin strips
192	....Edging, midribs and center strips
193	....Guards

194	...Binding and fastening
195	....Folding strips
196	....Clamping strip
197	....Groove and strip
198	....Slit tube
199	....Marginal spring connections and limiting springs
200.1	...Frame
201	....Knockdown
202	....Sectional folding or extensible
203	....Braces
204	....Dropped-truss side rails
205	....Corner risers
206	.....Stamped metal
207	...Frame hangers, supports and retainers
208	....Rigid frame extension supports
209	....Shiftable on frame riser
210	....Spring
211	...Tighteners
212	....Cord take-up
213	....Lever and screw
214	....Lever
215	....Depression self-tightener
216	....Roller
217	.....Rolling bedstead rails
218	.....Riser mounting
219	.....Attachable
220	....Screw
221	.....Attachable
222	.....Extensible rods or trusses
223	.....Individual element
224	.....Sliding riser
225.1	.....Sliding end rail
226	...Reinforcers
227	....Cable systems
228	....Edge spreaders
229	....Subcoils
230	..Of fabrics and springs
231	...Underslung spring supports
232	...Yielding rail
233	...Marginal spring tension
234	...Leaf-spring supports
235	...Connecting fabric to tops of coil springs
236.1	..Of slats
237	...Bowed spring slats
238	...Hangers and engagers
239	..Of slats and springs
240	...Collapsible or extensible frameworks
241	...Independent slats with spring supports
242	....With leaf springs
243	....With subcoil springs
244	...Ridig slat frame tops
245	...Attaching slats to spring coils
246	..Of springs
247	...Nonspiral springs only
248	...Spiral springs only
249	....Frames, sectional and collapsible
250	.....Folding
251	.....Variable width or length
252	....Intermediate frames and connections
253	....With accessory spring shock absorbers
254	...Elements
255	....Springs, nonspiral
256	....Springs, spiral
257	....Top-coil unions
258	....Top saddles
259.1	....Connecting clip (e.g., plate or wire)
260	....Margin rims and connections
261	....Restrainers and limiters
262	....Lateral upper-frame braces
263	....Bottom spring support
264.1	.....Bars
265	.....Bar and wire
266	.....Wire

	BEDSTEADS
	.Having bottom
	..Of springs
	...Elements
267	....Top connections
268	.....Twin and continuous springs
269	.....Helical connectors
270	.....Links or clips
271	.....Extended coils
272	.....Top coil extended and guy
273	.....Guy with extended loops
274	.....Zigzag guy
275	.....Central cross strips and wires
276	.....Parallel cross groups
277	.....Two and one cross elements
278	..Equalizers
279.1	.Element or detail
280	..Panel, insert, or mirror
281	..Post top or ornament
282.1	..Joint or connection
283	..Filler bars
284	..Heating and cooling devices
285	..Knockdown and removable parts
286	..Side-rail and frame-rail construction
287	...Exhibition couplers
288	...Corner fastenings
289	...Chill fasteners
290	...Post boxes
291	...Rail boxes and hoods
292	...Rails interengaging within posts
293	...Rail-entering post stubs
294	...Post hooks
295	...Interlocking fingers
296	...Rail hooks
297	...Swinging hooks
298	...Drawbars
299	...Keyhole, bayonet and opentop slots
300	...Dovetails
301	...Post clamps
302	...Rotating rails
303	...Pins and pintles
304	...Brackets
305	..Bedstead braces
306	...Cable systems
307	...Link systems
308	..Receptacles, drawers and compartments
309	..Antinoise devices and buffers
310	..Legs
311	...Sliding disappearance
312	...Pivoted
313.1	....Link control
314.1	....Slot with shoulder
315.1	....Latch
315.2	.....Spring actuated
316	....Jointed braces
413	SLEEPING BAG WITH OR RECEIVING BED OR TENT STRUCTURE
414	WITH MOSQUITO NET OR CANOPY
415	.Actuated by folding of bed
416	.On baby carriage
417	GROUND MAT
418	.With sun shade
419	.Having head rest
420	.Padded
421	WITH HEATING OR COOLING
422	.Of waterbed mattress
423	.And means to force air
424	HAVING SAFETY DEVICE
425	.Side guard
426	..Secured between mattress and bed bottom
427	..Flexible
428	..Adjustable in place
429	...Telescoping
430	...Pivoting
431	SUPPORT FOR USER'S BODY OR PART THEREOF
432	.For back when person is in seated position
433	..Having adjustable incline
434	.For head (e.g., pillow, etc.)
435	..Having means permitting the unrestricted passage of air therethrough for breathing purposes
436	..Adapted to accommodate either other parts of the body or body-treating device (e.g., hair rollers, etc.)
437	..Having distinct, adjustable parts
438	..Scent affecting or disseminating
439	..With coil, leaf, or torsion spring core
440	..With rigid frame or base
441	..Fluent material filled
442	..Compartmented
443	.For foot or leg
444	..Having planar support for sole of foot
445	.Self-help support, grip, or handhold
446	.Having means for varying contour or firmness of support surface or added support structure of different contour or firmness
447	..Internal of support
448	.Mattress or cushion
449	..Having confined fluent material within flexible container (e.g., air mattress, etc.)
450	...And a confined, diverse fluent or yieldable material
451	...Confined liquid (e.g., waterbed, etc.)
452	....Supported or confined by air-chamber frame
453	...With fluent material source (e.g., pump)
454	....Manually operated
455	...Including plural distinct compartments for fluid
456	....Filled via common manifold
457	...Having parallel-strip ties
458	...Point ties or braces
459	..With fireproof material
460	..Having means to facilitate application or retention of bedclothes
461	..Having means permitting the unrestricted passage of air through the mattress or cushion
462	..Having pocket for disparate article
463	...Article is toilet receptacle
464	..Sectional with regard to firmness
465	..Sectional and rearrangeable
466	..Having handle
467	...Combined with means providing ventilation
468	..Having means providing ventilation
469	...And means to force ventilation (e.g., fan, etc.)
470	..Having separable ticking or upholstery as primary cover
471	..Having upholstery cover and means for physically securing it thereto
472	...Tufting
473	..Having waterproof outer surface
474	..Having means to form or strengthen edge or border
475	..Having innerspring-type core
476	...Noncoil spring element
477	...Compartmentalized
478	...And spring insulator
479	....Extensible
480	..Having internal partition
481	..Comprising foam material
482	BEDCLOTHING
483	.Fireproof
484	.Waterproof
485	.Having pocket

BEDCLOTHING
486 .One section being adjustable or having characteristics which differ relative to another section
487 .Disposable
488 .And means to facilitate changing thereof
489 ..For dressing pillow
490 .Pillow cover
491 .Pillow sham
492 ..And holder
493 .Valance
494 .Having means to engage body of user or bed structure to insure proper covering of body
495 .Sheet
496 ..Having manipulable fastening means
497 ..Contoured or fitted
498 .And means to hold clothes in position on bed
499 .Adapted to contact mattress
500 ..Multilayer
501 .And protector therefor
502 .Multilayer
503 RECEPTACLE OR SUPPORT FOR USE WITH BED
504 .To support bedclothes
505 ..Above body of person using bed
506 ..For airing thereof
507 .Planar support (e.g., a table, step, etc.)
508 ATTACHMENT OR ACCESSORY
509 .For tilting of bed
510 .To facilitate moving of bed
511 ..And guide therefor (e.g., track, etc.)
512 .Screen which is attached to periphery of bed
513 .Partition for bed surface
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CROSS-REFERENCE ART COLLECTION
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900 BATHTUB OR BED

CLASS 7 COMPOUND TOOLS

DECEMBER 1990

100	AUTOMOBILE REPAIR OR MAINTENANCE
101	WATCHMAKING OR REPAIR
102	SHOEMAKING OR LEATHER WORKING
103	CARPET INSTALLATION, FINISHING, OR TRIMMING
104	SPECIALIZED TO MINING OR MINER'S USE, E.G., MINER'S CANDLESTICK
105	HOUSE PAINTING, PAPER HANGING, OR GLAZING
106	FISHING
107	ELECTRICAL CONNECTION FORMING OR WIRE PREPARATION
108	.With screwdriver
109	FOR STOVE, RANGE, OR FURNACE USE
110	COOKING, BAKING, OR KITCHEN FOOD PREPARATION
111	.Rolling pin, combined or convertible
112	.With culinary fork
113	.With knife or cutter means
114	WEEDING, GARDENING, OR LIGHT AGRICULTURAL OR EARTHWORKING USE
115	.Pitch fork
116	.Spade or shovel
117	SPECIALIZED TO WIRE FENCE INSTALLATION OR REPAIR
118	POCKETKNIFE TYPE
119	.With gauge or other measuring means, e.g., ruler, level, etc.
120	.With abrasive sharpening means
121	THIMBLE AND THREAD CUTTER
122	SHINGLE GAUGE ON HATCHET, HAND AXE, OR HAMMER
123	WITH BUTTON HOOK OR SHOE HORN
124	MUTILATING ERASER COMBINED WITH BURNISHER
125	PLIER TYPE
126	.With receptacle opener or closure remover
127	.With tool or plier handle
128	..With tool pivoted to plier
129	..With cutter
130	...Nipper
131	...Shear
132	.With cutter
133	..Nipper
134	..Shear
135	...Scissors
136	....And comb
137	.With hammer
138	WRENCH
139	.Adjustable, e.g., monkey wrench, pipe wrench, etc.
140	..And brace
142	..With cutter
143	HAMMER
144	.With cutter
145	..Axe, hatchet, or adz head
146	.Fixed form
147	..Integral
148	HANDSAW
149	.Hacksaw frame type
150	.With gauge or other measuring means, e.g., ruler, level, etc.
151	RECEPTACLE OPENER OR CLOSURE REMOVER
152	.Can opener cutter
153	..With tear strip puller
154	..With corkscrew
155	.Corkscrew
156	.With cutter
157	PIPE OR TUBE END FORMER AND/OR CUTTER
158	CUTTER COMBINED WITH OTHER TOOL OR TOOLS
159	.Brush hook and axe
160	.Desk use tool, e.g., letter opener, pencil sharpener
161	.With hook
162	.With means specialized to manicure use
163	.With gauge or other measuring means, e.g., ruler, level, etc.
164	WITH GAUGE OR OTHER MEASURING MEANS, E.G., RULER, LEVEL, ETC.
165	WITH SCREWDRIVER
166	CROWBAR OR PRYBAR
167	HOLDERS OR HANDLES
168	.For pivoted tools
169	INTEGRAL
170	MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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900	RESILIENT PIVOT
901	MAGNETIC FEATURE

CLASS 8 BLEACHING AND DYEING; FLUID TREATMENT AND CHEMICAL MODIFICATION OF TEXTILES AND FIBERS

400 MEASURING, TESTING, OR INSPECTING DYE PROCESS
401 USING ENZYMES, DYE PROCESS, COMPOSITION, OR PRODUCT OF DYEING
402 WOOD DYEING PROCESS
403 FUGITIVE DYE COMPOSITION, PROCESS OR PRODUCT
404 DYEING INVOLVING ANIMAL-DERIVED NATURAL FIBER MATERIAL (OTHER THAN SOLELY WOOL OR SILK), E.G., LEATHER, FUR, HAIR, FEATHERS, ETC., COMPOSITION, PROCESS, OR PRODUCT
405 .Hair dyeing
406 ..Oxidation dye
407 ...With dye other than oxidation dye
408 ...Plural dyes or dye and coupling agent
409 ....Heterocyclic amine dye
410 ....Paradiaminobenzene dye
411 .....With metadiaminobenzene dye
412 .....With aminophenol dye
414 ...Nitroaniline dye
415 ....Nitrophenylenediamine dye
416 ...Aryldiamine dye
421 ...Aminophenol dye
423 ...Aminoheterocyclic dye
424 ...Phenols (natural oxidation dye)
425 ..Mordant, solvent dye formation or metallized azo dye
426 ..Basic dye, including diphenylmethane, triphenylmethane, xanthene, fluorene, methine, acridine, oxazine, phenazine, flavylium, naphthoperinone, quinophthalone, quaternary ammonium group, etc., containing
428 ..Dye reactive with hair
429 ..Developed on the hair
431 ..With fluid treatment, e.g., bleaching with dyeing, etc.
432 ...-S-S- bond disruption, e.g., use of thioglycolates, etc.
433 ...Swelling of hair
435 ..Solvent assisted dyeing
436 .Leather dyeing
437 ..Azo dye
438 PROCESS OF EXTRACTING OR PURIFYING OF NATURAL DYE
439 .Logwood
440 DYE RECOVERY PROCESS, OTHER THAN NOMINAL RECOVERY
441 PROCESS OF COLOR RENOVATING A DYED PRODUCT
442 COLOR PROTECTING PROCESS FOR DYED PRODUCT
443 WEIGHTING PROCESS (LOADING SILK WITH METAL SALTS)
444 DYEING PROCESS UTILIZING ELECTRIC, MAGNETIC, OR WAVE ENERGY; OR PRODUCT THEREOF
445 PROCESS OF PRINTING PERMANENTLY ON SUBSTRATE, OTHER THAN NOMINAL PRINTING, USING PRINT PASTE CONTAINING DISCHARGE MATERIAL, RESIST MATERIAL, OR DYE MATERIAL; OR STENCIL DYEING
446 .Resist or reserve
447 ..Wax
448 ..Chemically modified local areas
449 ..Reactive dye
450 ..Oxidation dye, e.g., aniline, nitroaniline, etc.
451 ..Azo dye component ground
452 ..Mordant dye, e.g., dye with a metal chelating group, etc.
453 ..Vat dye or sulfur dye, e.g., quinonic or indigoid reducible dye, sulfur-organic reaction product dye, etc.
454 ..Basic dye, including diphenylmethane, triphenylmethane, xanthene, fluorene, methine, acridine, oxazine, phenazine, flavylium, napthoperinone, quinophthalone, quaternary ammonium group, etc., containing
455 ..Acid (including direct) dye, e.g., sulfonated, sulfamated, etc.
456 ..Disperse dye
457 .Discharge utilized
458 ..Chemically modified local areas
459 ..Oxidation dye, e.g., aniline, nitroaniline, etc.
460 ..Mordant dye
461 ..Vat dye or sulfur dye, e.g., quinonic or indigoid reducible, or sulfur-organic compound reaction product dye, etc.
462 ..Basic dye, including diphenylmethane, triphenylmethane, xanthene, fluorene, methine, acridine, oxazine, phenazine, flavylium, naphthoperinone, quinophthalone, quaternary ammonium group, etc., containing
463 ..Acid (including direct) dye, e.g., sulfonated, sulfamated, etc.
464 ..Disperse dye
465 .Vat dye or sulfur dye, e.g., quinonic or indigoid reducible dye, sulfur-organic compound reaction product dye, etc.
466 .Azo dye
467 DIFFUSION TRANSFER DYEING PROCESS, TRANSFER SHEET AND PRODUCT
468 .Release layer utilized
469 .Steam
470 .Dry heat treatment for penetration
471 ..Sublimation
472 ...Air pressure
473 SUBAMBIENT TEMPERATURE DYEING PROCESS, I.E., LESS THAN 20 DEGREES C.
474 REACTIVE GAS OR REACTIVE VAPOR UTILIZED IN DYE PROCESS
475 CONFINED GAS PHASE SUPERATMOSPHERIC PRESSURE DYEING PROCESS (OTHER THAN STEAM BELOW 138 DEGREES C.)
476 .Steam (at 138 degrees C. or above)
477 FOAM DYE COMPOSITION OR PROCESS
478 PATTERN EFFECT DYEING, PROCESS, COMPOSITIONS, OR PRODUCTS
479 .Discontinuous or multidirectional movement of substrate
480 .Cross dyeing
481 ..Mixture of treated and untreated individual fibers
482 .Suppress dyeing, e.g., fold, twist, wrinkle, etc.
483 .Random pattern effect, e.g., space dyeing, etc.
484 ..Differential diffusion
485 .Two or more sequential dye application steps
486 .Direct contact with applicator
487 ..Roller or disc
488 BONDING OF PREFORM, E.G., FLOCKING, ETC., WITH DYEING, PROCESS OR PRODUCT
489 DRAWING OR STRETCHING OF PREFORM WITH DYEING, PROCESS OR PRODUCT
490 PROCESS OF PRESERVING SUBSTRATE COMBINED WITH DYEING OR PRODUCT THEREOF, E.G., BIOCIDAL OR FIRE RETARDANT TREATMENT, ETC.

491 OVERALL DIMENSIONAL MODIFICATION OR STABILIZATION, E.G., CREPING, ETC., INCLUDING USE OF CHEMICAL ADDITIVE TO FORM AT LEAST A TEMPORARY COMPOSITION, WITH DYEING PROCESS
492 .Solvent treatment of synthetic fibers
493 .Modification of molecular structure of substrate by chemical means, e.g., cross-linking of substrate, hydrolysis of substrate, etc.
494 NOMINAL TEXTILE MANUFACTURE PROCESS COMBINED WITH DYEING
495 COATING OR SIZING WITH DYEING PROCESS OR PRODUCT
496 .Aminoplast or aminoplast precursor coating
497 FORMING, SHAPING, OR RESHAPING WITH DYEING PROCESS OR PRODUCT
498 PROCESS OF DYEING INVOLVING DRY POWDER APPLICATION
499 SPRAY-DYEING PROCESS
500 DYEING PROCESS UTILIZING MECHANICAL PRESSURE, E.G., PRESSES, ETC.
501 TWO-PHASE SYSTEM DYEING COMPOSITION OR PROCESS
502 REPLENISHMENT OR REPLACEMENT OF SAME BATH LIQUOR IN DYEING PROCESS
503 DYEING PROCESS INVOLVING BURNING OF REAGENTS
504 PROCESS INVOLVING PLURAL APPLICATION STEPS WITH SAME DYE
505 DIFFERENTIAL FLUID PRESSURE ASSISTED DYEING PROCESS, E.G., AIR PRESSURE, VACUUM, ETC.
506 NONTEXTILE, DYEING PROCESS OR PRODUCT, INCLUDING INORGANIC FIBER
507 .Contact lens
508 .Vinyl chloride polymer substrate
509 .Acrylate polymer substrate
510 .Acrylonitrile polymer substrate
511 ..Contains basic addition comonomer, e.g., vinyl pyridine, etc.
512 .Polymer from polyol and a polycarboxylic acid or derivative substrate
513 .Olefin polymer substrate or rubber
514 ..Styrene polymer
515 .Polymer from isocyanate and polyol, e.g., polyurethane, etc., substrate
516 .Amide polymer substrate
517 ..Natural polyamide, e.g., casein, gelatin, keratin, collagen, etc.
518 .Cellulose substrate other than paper
519 ..Cellulose ester or cellulose ether
520 .Phenol-aldehyde resin substrate
521 .Oil, fat, wax, or gasoline dyeing
522 .Inorganic substrate
523 ..Silica or calcareous substrate, e.g., glass, etc.
524 DRY DYE COMPOSITION OTHER THAN MERE MIXTURE OF TWO OR MORE DYES ALONE OR PROCESS OF MAKING
525 .Dye soap or detergent
526 .Dye in specified form other than mere powder
527 DYE CONCENTRATE COMPOSITION WHEREIN AN ADDITIONAL AMOUNT OF A CONSTITUENT OF THE COMPOSITION MUST BE ADDED BEFORE USE
528 .Highly viscous dye concentrate, e.g., paste, etc.
529 MULTIPLE CHEMICALLY DIVERSE FIBERS OR FIBERS WITH DIFFERENT CROSS SECTION, PROCESS OF DYEING OR PRODUCT
530 .Resisting a fiber
531 .Synthetic polyamide
532 .Polyester fiber and cellulose fiber
533 .Polyster fiber and wool or silk fiber
534 .Polyacrylonitrile fiber
535 PHENOL-ALDEHYDE FIBER DYEING COMPOSITION, PROCESS, OR DYED PRODUCT
536 FIBER DERIVED FROM SAPONIFIED CELLULOSE ESTERS OR FROM NITROCELLULOSE CONVERTED TO CELLULOSE, DYE COMPOSITION, PROCESS, OR PRODUCT
537 MERCERIZED CELLULOSE FIBER OR PARCHMENTIZED CELLULOSE FIBER DYEING COMPOSITION, PROCESS, OR PRODUCT
538 GELLED FIBER-DYEING PROCESS OR PRODUCT
539 SYNTHETIC FIBER PRODUCED FROM MATERIAL WHICH CONTAINS PENDANT -COO-, -(O=)S(=O)-O-, -O-(O=)P(=O)-O-, PYRIDINO, DIALKYLAMINOALKYL-, OR QUATERNARY AMMONIUM RADICAL, DYEING PROCESS OR PRODUCT
540 .Quaternary ammonium, pyridino, or dialkylaminoalkyl
541 ACYLATING AGENT OR CROSS-LINKER DYE ADDITIVE, COMPOSITION, PROCESS, OR PRODUCT
542 .Pretreatment of substrate
543 REACTIVE DYE COMPOSITION, PROCESS, OR PRODUCT
544 .1,2-epoxy terminal group dye or Halohydroxdye, e.g., -CH(OH)-CHCl containing
546 .Thiosulfato group containing dye
547 .Quaternary ammonium group containing dye
548 .Alkylene phosphate or phosphite dye
549 .Alkylene sulfato, halotriazine, halodiazine, haloquinoxaline, or halopyrimidine dye
550 ORGANIC ADDITIVE FOR DYE COMPOSITION, DYE COMPOSITION CONTAINING ORGANIC ADDITIVE, PROCESS OR PRODUCT; OTHER THAN EMULSIFIER, PH ADJUSTER OR STARCH OR GUM PRINT PASTE THICKENER
551 .Ethylenimine or polymer thereof or polyalkylene polyamine
552 .Polymeric additive
553 ..Derived from vinyl pyrrolidone or vinyl pyridine
554 ..Cationic polymer, e.g., aminated polymer without -COO-, -(O=)S(=O)-, -O-(O=)P(=O)-O- groups, e.g., polyacrylamide, etc.
555 ...Acrylamide or dialkylaminoalkylacrylate polymer
556 ...Cyanamide- or dicyandiamide-formaldehyde polymer
557 ..Acid polymer, e.g., carboxylated or sulfonated polymer
558 ...Acrylic acid polymer
559 ...Carboxyalkylene cellulose
560 ...Phenol-aldehyde polymer
561 ..Carbohydrate
562 ...Cellulose ester or cellulose ether
563 ..Polypeptide or protein
564 .Lactam
565 .Six-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen
566 ..Triazines (including hydrogenated)
567 ..Diazines (including hydrogenated)
568 .Six-membered hetero ring consisting of one nitrogen and five carbon atoms
569 ..Quinolines
570 .Five-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen
571 ..Hetero N ring contains a sulfur atom (including hydrogenated)

ORGANIC ADDITIVE FOR DYE COMPOSITION, DYE COMPOSITION CONTAINING ORGANIC ADDITIVE, PROCESS OR PRODUCT; OTHER THAN EMULSIFIER, PH ADJUSTER OR STARCH OR GUM PRINT PASTE THICKENER
.Five-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen
572 ..Hetero N ring contains an oxygen atom (including hydrogenated)
573 ..Hetero N ring contains at least two nitrogen hetero atoms (including hydrogenated)
574 .Five-membered hetero ring consisting of one nitrogen and four carbon atoms
575 .Sulfur-containing hetero ring
576 .Oxygen-containing hetero ring
577 ..Furyl (including hydrogenated)
578 ..Lactones
579 ..Hetero ring is six-membered consisting of one oxygen and five carbons
580 .Fats, higher fatty acids or esters, oils or waxes, other than nitrogen-containing
581 .Silicon-containing
582 .Carboxylic acid esters, cyanates, isocyanates, or sulfur analogues thereof
583 ..Aromatic
584 .Phosphorus-containing
585 .Ureas, thioureas, pseudoureas, or pseudothioureas
586 .Carboxamides or thiocarboxamides
587 .Sulfur-containing
588 ..Sulfonic acids or sulfonic acid esters
589 ...Aromatic
590 ....Amino
591 ...Acyclic
592 ..Sulfamic or sulfinic acids, salts, or esters
593 ..Sulfonamides
594 .Carboxylic acid or salt thereof
595 ..Tannins or tannic acid
596 ...Contains heavy metal
597 ..Amine
598 ..Acyclic
599 ...Hydroxy-containing
600 ...Heavy metal-containing
601 ...Halogen-containing
602 .Nitrogen-containing, other than nitro or nitroso
603 ..Nitrile
604 ..Amino alkanol
605 ..Anilines
606 ..Quaternary ammonium compound
607 .Ketone
608 .Aldehyde
609 .Ether
610 ..Aryl ether
611 .Alcohol
612 ..Chlorohydrin
613 ..Phenols
614 .Halogen-containing
615 ..Fluorine
616 ..Aromatic
617 .Hydrocarbon
618 INORGANIC ADDITIVE FOR DYE COMPOSITION, DYE COMPOSITION CONTAINING INORGANIC ADDITIVE, PROCESS OR PRODUCT; OTHER THAN EMULSIFIER, PH ADJUSTER, WATER, NITROUS ACID FOR AZO COUPLING OR SULFUR REDUCING AGENT FOR VAT OR SULFUR DYE
619 .Ammonia
620 .Ammonium salt
621 .Molybdenum, uranium, or tungsten (wolfram)
622 .Group VA metal (As, Sb, Bi)
623 .Group VIII metal (Fe, Co, Ni, Os, Ir, Pt, Ru, Rh, Pd)
624 .Group IB metal (Cu, Ag, Au)
625 .Group IIIA metal (Al, Ga, In, Tl)
626 .Group IV metal (Sn, Pb, Ge, Ti, Zr, Hf)
627 .Group VB metal (V, Nb, Ta)
628 .Group VII metal (Mn, Tc, Re)
629 .Group IIB metal (Zn, Cd, Hg)
630 .Boron
631 .Nitrogen
632 .Silicon
633 .Phosphorus
634 .Halogen acids
635 .Chromium
636 DYE OR POTENTIAL DYE COMPOSITION, ADDITIVE, TREATMENT, PROCESS, PRODUCT, OR ANCILLARY DYE OPERATION
637.1 .Pigments used as dyes (imbibition of a pigment)
638 .Mixed dyes, noncomplexed
639 ..Azo
640 ...With sulfur dye or vat dye
641 ...Sulfonated azo
642 ..Sulfur dye or vat dye
643 ..Anthraquinone dye
644 ..Basic dye
645 .Inorganic dye (mineral dye)
646 .Dye extracted from natural product
647 .Polymeric dye, e.g., a chromophore pendant from an addition polymer, etc.
648 .Fluorescent dye, e.g., stilbene, benzimidazole, benzoxazole, benzothiazole, pyrazoline dye, etc., optical brightner or bluing agent
649 .Oxidation dye, e.g., aniline, nitroaniline, etc.
650 .Sulfur dye or vat dye
651 ..Soluble leuco ester salts
652 ..Sulfur dye (sulfur-organic reaction product dye)
653 ..Indigoid dye
654 .Basic (cationic) dye containing strongly basic onium or alkylene imine group
655 ..Heterocyclic onium group, e.g., pyridinium, etc.
657 .Basic dye, including diphenylmethane, triphenylmethane, xanthene, fluorene, methine, acridine, oxazine, phenazine, flavylium, naphthoperinone, quinophthalone, etc., group-containing
658 ..Acid dye form, e.g., with sulfonic acid group, etc.
659 ..Methine group
661 .Phthalocyanine dye
662 .Azo, acridone, or quinone dye
663 ..Naphthoquinone dye
664 ..Stabilized or potential diazo compound
665 ...Nitrosamine or N-diazo
666 ..Azo developed on the fiber
667 ...Nitroaromatic component
668 ...Pyrazolone component
669 ...Polyazo component
670 ...Heterocyclic component
671 ...Me-C(=O)-CH-C(=O)- group-containing
672 ..Dye containing removable solubilizing group, e.g., lactam radical, etc., or the dye is oxidized to insolubilize
673 ..Dye containing -COOH
674 ...Metallized, heavy metal
675 ...Anthraquinone dye
676 ...Sulfonic acid or salt thereof or sulfonamide

	DYE OR POTENTIAL DYE COMPOSITION, ADDITIVE, TREATMENT, PROCESS, PRODUCT, OR ANCILLARY DYE OPERATION
	.Azo, acridone, or quinone dye
	..Anthraquinone dye
677	...Heterocyclic group
678	...Phenoxy, phenol, mercapto, alkoxy, or thioalkyl group
679	...Anilino group on the anthraquinone nucleus
680	..Dye containing -(O=)S(=O)-O-, -O(O=)S(=O)-O- or phosphorus oxide group
681	...Sulfonated azo
682	....Monoazo
683	.....Monosulfonated
684	......Heterocyclic
685	..Metallized dye, including metallization during dyeing (i.e., including in situ forming of metallized dye)
686	...Heterocyclic
687	..Polyazo dye
688	..Six-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen
689	...Diazines (including hydrogenated)
690	..Five-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen
691	...Thiazoles (including hydrogenated)
692	...Diazoles or triazoles (including hydrogenated)
693	..-COO-alkyl or -COO-aryl hydrocarbon
694	..Aryl-(O=)S(=O)-N-
695	..HO-C-C-N-
696	..Carbonyl bonded directly to nitrogen
94.1 R	TREATMENT OF HIDES, SKINS, FEATHERS AND ANIMAL TISSUES
94.1 D	..Leather dehydration
94.1 P	..Phosphorus compounds on leather
94.11	.Internal tissues
94.12	.Fish or reptile skins
94.13	.Suede
94.14	.Fur
94.16	.Depilating
160	..Adhesive type
161	..Living animal
94.15	.Treatment of untanned skins or hides
94.17	..Alkaline material removal
94.18	..With organic material
94.19 R	.Tanning
94.19 C	...Resin condensation in situ in leather
94.2	..With subsequent treatment
94.21	...Organic material
94.22	....Fat, fatty oil, fatty oil acid or salt thereof
94.23	.....Emulsions
94.24	..With aldehyde-aromatic condensation product
94.25	..With heavy metal compound
94.26	...With organic material
94.27	...Chromium compound
94.28	...Iron compound
94.29	..With aluminum compound
94.3	...With vegetable extract
94.31	..With cellulose liberation liquor
94.32	..With vegetable extract
94.33	..With organic material
101	BLEACHING
102	.Color stripping or subduing
103	.Wave energy
107	.Chemical
108.1	..Chlorine
109	...With sulfur compounds or peroxides or oxygen
110	..Sulfur compounds
111	..Peroxides or oxygen
112	IMPROVING FELTING PROPERTIES (E.G., CARROTING)
114	ORNAMENTAL EFFECTS
114.5	.Differential creping
114.6	.With fiber destruction or removal
115	.With local treatment
115.51	CHEMICAL MODIFICATION OF TEXTILES OR FIBERS OR PRODUCTS THEREOF
115.6	.With coating, sizing, or lubricating
115.7	.Mixed fibers
116.1	.Cellulose fibers
181	..Treatment with nitrogen-containing organic compound
182	...With aminoplast condensate or aminoplast condensate-former
183	....Triazine-aldehyde condensate
184	....Amido-aldehyde condensate
185	.....Urea-aldehyde condensate
186	......Alkylatedurea-aldehyde condensate
187	.....Carbamic-aldehyde condensate
188	...Quaternary ammonium compound
189	...Heterocyclic nitrogen compound
190	....Triazine
191	....Three-membered ring with two C and one N
192	...Cyano-, isocyano-, thiocyano-, or isothiocyano-group containing
193	....Ethylenic radial containing
194	...Amide
195	....Urea or thiourea
196	...Amine
116.4	..Treatment with aldehyde or ketone
117	..Wool-like or crinkle effects
118	..Transparent, parchmentized, or linen finish
119	...Paper
120	..Esterifying, etherifying or immunizing
121	...Acetylation
122	...Xanthogenation
123	..Cuprammonium treatment
125	..Mercerizing or alkaline treatment
127	...Wetting addition or pretreatment
127.1	..Treatment with phosphorus containing material
127.5	.Proteinaceous fibers
127.51	..Hair
127.6	..Treatment with aldehyde or aldehyde derivative, ketone or nitrogen containing organic compound
128.1	..Natural wool or silk
128.3	...Chemical modification in the presence of a sulfur or silicone containing material
129	.Cellulose ester or ether fibers
115.52	.Using wave energy, electrostatic field or electrical discharge
115.53	..Ultraviolet radiation
115.54	.Treating textiles or fibers from synthetic resin or natural rubber with chemical reactant
115.55	..Single fiber or filament containing more than one synthetic organic polymer
115.56	..Organic chemical reactant
115.57	...Reactant contains heterocycle
115.58	....Reactant contains nitrogen heterocycle
115.59	.....Contains six-membered nitrogen heterocycle
115.61	....Reactant contains oxygen heterocycle
115.62	...Reactant contains nonaromatic carbon-carbon double bond
115.63	....Reactant containing nonaromatic carbon-carbon double bond also contains sulfur atom

	CHEMICAL MODIFICATION OF TEXTILES OR FIBERS OR PRODUCTS THEREOF
	.Treating textiles or fibers from synthetic resin or natural rubber with chemical reactant
	..Organic chemical reactant
115.64	...Organic reactant contains element other than C, H, O, N or S
115.65	...Organic reactant contains nitrogen
115.66	....Organic reactant contains plural nitrogen atoms nonbonded to each other
115.67	....Reactant contains isocyanate group
115.68	..Inorganic nongaseous chemical reactant
115.69	...Oxidizing or alkaline agent
130	..Saponifying
130.1	SWELLING OR PLASTICIZING OF ARTIFICIAL FIBERS
131	.Cellulose ester or ether fibers
132	..With stretching
133	FIBER PROTECTING DURING FLUID TREATMENT
137	CLEANING OR LAUNDERING
137.5	.Removing formation impurities from artifical fiber
138	.Degumming or desizing
139	.Scouring, degreasing or bowking
139.1	..With fat solvent
140	.Carbonizing
141	.Waste reclaiming and conditioning
142	.Dry cleaning
147	FLUID TREATMENT (MANIPULATIVE)
148	.Confined areas
149	.Intermittent length
149.1	.Combined liquid and gas or vapor
149.2	.Gas or vapor
149.3	..Including steam
150	.Special forms and forming
150.5	..Hides, skins or leather
151	..Running lenghts
151.1	...Helical textile course
151.2	...Yarns
152	...Piling
154	..Wound packages
155	...Yarns
155.1	....Radial liquid flow
155.2	....Skeins, cakes or cheeses
156	..Pulp or fibers (in bulk)
157	.Kier treatment
158	.Manipulation of liquid
159	..Agitating immersed material and liquid

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CROSS-REFERENCE ART COLLECTIONS

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900	BASIC EMULSIFIERS FOR DYEING
901	.Quaternary ammonium salts
902	COACERVATION OR TWO-PHASE DYEING SYSTEM
903	TRIPLE MIXTURE OF ANIONIC, CATIONIC, AND NONIONIC EMULSIFIERS FOR DYEING
904	MIXED ANIONIC AND NONIONIC EMULSIFIERS FOR DYEING
905	MIXED ANIONIC AND CATIONIC EMULSIFIERS FOR DYEING
906	MIXED CATIONIC AND NONIONIC EMULSIFIERS FOR DYEING
907	NONIONIC EMULSIFIERS FOR DYEING
908	ANIONIC EMULSIFIERS FOR DYEING
909	.Sulfonated or sulfated alphatic hydrocarbons
910	.Soap
911	..Sulfonated
912	.Arylene sulfonate-formaldehyde condensate or alkyl aryl sulfonate
913	AMPHOTERIC EMULSIFIERS FOR DYEING
914	.Amino carboxylic acids
915	.Amino sulfonic acids
916	NATURAL FIBER DYEING
917	.Wool or silk
918	.Cellulose textile
919	.Paper
920	SYNTHETIC FIBER DYEING
921	.Cellulose ester or ether
922	.Polyester fiber
923	..Halopolyester
924	.Polyamide fiber
925	..Aromatic polyamide
926	.Polyurethane fiber
927	.Polyacrylonitrile fiber
928	.Polyolefin fiber
929	CARPET DYEING
930	PRETREATMENT BEFORE DYEING
931	.Washing or bleaching
932	SPECIFIC MANIPULATIVE CONTINUOUS DYEING
933	THERMOSOL DYEING, THERMOFIXATION OR DRY HEAT FIXATION OR DEVELOPMENT
934	HIGH TEMPERATURE AND PRESSURE DYEING
935	IMMUNIZATION AS A RESIST IN DYEING
936	SOLUBILITY STUDIES ON DYES
937	Li ION IN DYE BATH
938	SOLVENT DYES
939	NAPHTHOLACTAM DYE

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DIGESTS

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DIG 1	Silicones
DIG 2	Vinyl sulfones and precursors thereof
DIG 3	Swelling and stretching
DIG 4	Polyester fibers
DIG 5	Organic titanium compounds on textiles
DIG 6	Resin bleach
DIG 8	Oxirane
DIG 9	Polyolefin
DIG 10	Polyvinyl halide esters or alcohol fiber modification
DIG 11	Isocyanate and carbonate modification of fibers
DIG 12	Wave energy treatment of textiles
DIG 13	Cyanoethylation of fibers
DIG 14	Dry mixtures of textile reagents
DIG 15	Pressurized gas treatment of textiles
DIG 16	Pressurized and high temperature liquid treatment of textiles
DIG 17	Glyoxal and polyaldehyde treatment of textiles
DIG 18	Grafting textile fibers
DIG 19	Molten metal
DIG 20	-N-Cl compound
DIG 21	Nylon

CLASS 10 BOLT, NAIL, NUT, RIVET AND SCREW MAKING

DECEMBER 1990

1 R	MISCELLANEOUS
1 A	..Wire coil inserts
1 B	..Thread
2	SCREW MAKING
3	.Head nicking and shaving
4	.Pointing and threading
5	.Head nicking
6	..Rotary work holder
7	..Punch and die
8	.Head shaving
9	.Pointing
10 R	.Processes
10 P	...Nylon plug locks
11 R	BOLT AND RIVET MAKING
11 A	..Single die and shiftable punches
11 E	..Ejection
11 G	..Gage
11 T	..Transfer means
11 M	..Electric shears
12 R	.Multiple header
12 T	...Work transfer means
12.5	..Laterally reciprocating carrier
13	.Rotary multiple dies
15	.Reciprocating die and header
16	..Toggle-closing dies
17	..Wedge-closing dies
18	.Side swaging
14	.Cotter-slot punching
19	.Bolt-head finishing
20	..Broaching
20.5	.Shank slot cutting
21	.Bolt pointing
22	.Anvils
23	.Safety devices
24	.Dies
25	.Shears
26	.Heading punches
27 R	.Processes
27 E	...Extrusion
27 H	...Heating
27 FS	...Making flexible shank bolts
27 PH	...Pronged and hollow fasteners
27 UB	...U-frame bolts
	NAIL MAKING
28	.Cut nails
36	..Horseshoe nails
37	...Cutting and finishing
38	...Finishing
39	....Rotary work holder
40	...Dies
41	...Nail plates
42	...Processes
29	..Tack strips
30	..Cutting and heading
31	..Cutting and pointing
32	..Cutting
35	..Dies
33	..Nail plates
34	..Processes
43	.Wire nails
44	..Making and distributing
45	..String nails
46	..Spiral shank
47	..Multiple header
48	...Opposite
49	..Reciprocating die and header
50	...Toggle-closing dies
51	...Wedge-closing dies
52	..Rotary work holder
53	..Dies
54	..Processes
55	.Wrought nails
56	..Spikes
57	...Reciprocating die and header
58	...Roller die
59	...Pointing
60	...Rotary work holder
61	...Dies
62	...Blanks
63	...Processes
64	..Horseshoe nails
65	...Chain
66	...Roll forging
67	....Traveling roll
68	...Side swage
69	...Rotary work holder
70	...Dies
71	...Processes
72 R	NUT AND WASHER MAKING
72 CN	..Castellated nuts
72 T	..Transfer means
73	.Lock-washer making
74	.Coiling and forging
75	.Nut finishing and tapping
76 R	.Forging
76 T	...Transfer means
77	..Rotary multiple dies
78	..Double-punch drive
79	..Side swage
80	..Side swage and mandrel
81	.Nut broaching
82	.Nut milling
83	.Nut facing
84	..Arbors
85	.Dies
86 R	.Processes
86 A	...Lock-nuts
86 B	...Washers and lock-washers
86 C	...Cap nuts
86 CL	...Clinch type or weld nuts
86 F	...Metal flow or forging
86 W	...Wing nuts
	SCREW THREADING
87	.Machines, combined
88	.Wooden screws
89 R	.Machines
89 H	...Threaded die holders, self releasing
89 F	...Threaded die holders with axial or lateral float
89 P	...Portable threading machines
89 WH	...Feed means
90	..Cutting off and threading
91	..Multiple die
92	...Aligned
93	...Turret
94	..Collapsing die
95	...Bevel closing
96 R	...Cam closing
96 T	.....Taper thread
97	...Lever closing
98	....Cone
100	...Pivoted chaser carrier
101 R	..Chasing cutter
101 P	....Portable
102	...Rotary
103	..Recessed cylindrical die block
105	..Feeds
106	..Lubricators
107 R	..Work holders
107 F	....Floating work holders
107 M	....Mandrel
107 PH	....Pipe or rod handling
	.IMPLEMENTS
110	..Dies, combined cutting off and threading
111	..Dies
113	...Thread trimming
120	...Radial chaser
120.5 R	....Taper threading
120.5 AD	......Adjustable die-blades
121	....Adjustable
123 R	..Die stocks
123 P	....Work support or guide
123 S	....Socket type holders
	.Tapping
128	..Machines, combined reaming and tapping

	SCREW THREADING
	.Tapping
129 R	..Machines
129 P	....Portable
129 WH	....Work handling
129 WJ	....Work handling, bent shank
129 A	....Tap rotation by reciprocating linkage
129 M	....Manual rotation
130 R	...Multiple tap spindle
130 WH	.....Work handling
132	....Circular gang
133	...Double tap grip
134	...Releasable tap
135 R	...Yielding tap driver
135 N	.....Yielding feed nut
136 R	...Reversing mechanisms
136 E	.....Electrical reversing
136 SC	.....Reversing by speed change
136 TS	.....Tool spindle shifts axially
138	....Spur geared
139 R	...Feeds
139 WH	.....Work handling
139 WJ	.....Work handling-bent shank
139 CN	.....Clutch nut
140	...Taps, combined
141 R	...Taps
141 B	.....Bent shank taps
141 H	.....Tap holders
141 F	.....Frangible shank taps
142	....Adjustable
143	....Collapsible
144	.....Cam core
145	.....Wedge core
152 R	.Swaging
152 T	...Swage tap
153	..Reciprocating die
155 R	BOLT WITH NUT AND/OR WASHER ASSEMBLING OR DISASSEMBLING
155 A	..Assembling by mere telescoping
156	CAPPING NAILS AND SCREWS
157	.Rectangular stock feed
158	.Rotary work holder
159	.Nicking devices
160	.Dies
161	.Processes
162 R	SPECIALIZED DISTRIBUTORS AND FEEDERS
162 M	..Magnetic
162 A	..Orienting and sorting
162 P	..Packing or boxing fasteners
162 S	..Feeding indefinite length stock
165	.Inclined chute
166	.Gripping feeding jaws
167	.Reciprocating lifter
169	.Rotary disk
171	.Nail plate
172	..Oscillating
173	..Reversing
174	...Geared
175	....Rack and pinion
176	....Segmental
177	...Strap drive
178	..Nippers and nose pieces

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DIGESTS

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DIG 1	Yielding spindle
DIG 2	Work holder indexes
DIG 3	Turret
DIG 4	Nails
DIG 5	Feeder
DIG 6	Conveyor
DIG 7	Tumbler
DIG 8	Hopper
DIG 9	Hydraulic control
DIG 10	Pneumatic
DIG 11	General assembly

CLASS 12 BOOT AND SHOE MAKING

1 R	MISCELLANEOUS
1 A	..Conveyors
1 B	..Platform cover turners
1 F	..Rubber shoe assembly
1 G	..Arch support forming and inserting
1 W	..Assembly machines
1 M	..Moccasin machines
4.1	COMBINED SOLE AND UPPER MACHINES
4.2	.Lasting with laying and/or leveling
4.3	.Inseam trimming
4.4	..With welt beating
4.5	..With horn-carried knife
4.6	.Shoe turning
7	LASTING MACHINES
7.1	.With vamp cutting
7.2	..Slitting or notching
7.3	.Prewelted upper
7.4	..End lasting only
7.5	.Outturned upper, e.g., stitchdown
7.6	..With nailing
7.7	..With sewing
7.8	..End lasting only
7.9	.Draw wire type, e.g., wire lasting
8.1	.With flexible conforming means
8.2	..With wiper folder
8.3	.Rotated nipper or wiper
8.4	.Pronged wiper folder
8.5	.Nipper wiper
8.6	..With nailing
8.7	...End lasting only
8.71	....With binder applying
8.8	..End lasting only
8.81	...With binder applying
9	.Nipper stretcher
9.1	..With sewing
10	..Wiper folder
10.1	...Multiple nippers
10.2	....With nailing
10.21	.....With binder applying
10.3	.....Fed work
10.4	.....Downward pull
10.5	....End lasting only
10.6	...With nailing
10.7	....With parallel horizontally disposed camshaft and gripper operating overdraw rod, i.e., continental type
10.71	.....With binder applying
10.8	...End lasting only
11.2	..With nailing
11.3	..End lasting only
12	.Wiper folder
12.1	..With nailing
12.2	...Toe lasting only
12.21	....With binder applying
12.3	...Heel lasting only
12.4	..Toe lasting only
12.41	...With binder applying
12.5	..Heel lasting only
13.1	.With nailing
13.2	.With sewing
14.2	.Sole hold-downs
14.3	.Upper clamps
14.4	..End bands
14.5	.Nippers
15	LAST INSERTING MACHINES
15.1	DELASTING MACHINES
16	LASTING-FASTENER REMOVING MACHINES
16.1	SOLE-FLAP HEEL-BREAST COVERING MACHINES
16.2	.Combined and/or plural operations
16.3	..Flap laying and heel tread clamping
16.4	.Laying flap on breast
16.5	.Splitting sole
16.6	.Trimming flap to breast outline
16.7	..Heel-guided trimmer
70	SOLE AND/OR HEEL BURNISHING MACHINES
70.5	.Combined or plural diverse
73.5	..With coating application
74.5	..With indenting
75.5	...Heel only
76.5	..With edge trimming
77	.Rotary tool
78	.Reciprocating tool
78.5	..Heel traverse
79	..Hand guided
79.3	.Fixed tool
79.2	.Tools and/or tool heads
77.5	..Rotary
79.5	SOLE AND/OR HEEL WAX POLISHING MACHINES
85	SOLE AND/OR HEEL EDGE TRIMMING MACHINES
85.1	.Combined or plural diverse
85.2	..With sole peripheral channeling
85.3	...Clamped work
85.4	..With fastener inserting
85.5	...Heel only
85.9	.Shank trimming only
86	.Clamped work
86.5	..Sole edge only
86.6	...Traveling cutter
86.65	....Rotary table supported
86.7	...Rotary cutter
87	..Rotary cutter
88	.Rotary cutter
89	..Multiple cutter head
90	..With adjustable rand guide and/or guard
91	.Rotary cutter heads
92	..Axially adjustable
93	..With supplemental cutter
94	..Inserted cutters
95	...Angularly adjustable
17 R	SOLE MACHINES
17 A	..Sbicca-type sole
17.2	.Peripheral operation and automatically bodily moved shoe support
33	.Laying and/or leveling
33.1	..With fastener inserting
33.2	..With heating means
33.4	..With welt pressing means
33.6	..With sole positioning means
33.7	..Configured oscillating former indexed with sole
33.8	...Oscillating jack
34	..With rotatable leveling pressure roll
34.5	...With power-operated transverse roll tilting
35.5	..Hammering and/or slicking
36	..Multiple work supports
36.5	...Traveling work support carrying fluid pressure applying means
36.8	....Rotary work support carrier
37	...Rotary work support carrier
38	..Pads or formers
18.1	.Assembling
18.2	..Bulk shoe fillers
18.3	..Shank pieces and/or stiffeners
18.5	.With diverse operations
18.7	..With peripheral channeling
18.9	..With slitting
20	.Applying or reinforcing separate rib
20.2	..Full gemming
21	.Blank molding
22	..Edge
24.5	.Edge covering
27	.Peripheral channeling
28	..Clamped work
29	.Channel-flap layers
30	.Channel-flap turners
31.5	.Heel-seal forming
31.6	..Spring heel
32	.Peripheral indenting
32.1	..With stitch finder
39	.Sock-liner applying
39.3	.Stitch picking and/or cutting
39.5	.Splicing half soles to outsoles
40	.Slitting

	SOLE MACHINES
40.5	.Shank pieces or stiffeners
41.05	.Grooving
41.1	.Pliabilizing soles in a shoe
41.2	.Pliabilizing soles
41.3	..With fluid treatment
41.5	.Tempering
41.7	.Inside fastener end trimmers
42 R	HEEL MACHINES
42 B	..Heel affixing
50	.Assembling
50.1	..With die cutting
50.2	...With fastener inserting
50.3	..With cement applying
50.4	..Heel logs
42.5	.With diverse operations
43	..Fastener inserting and breasting
43.5	..Fastener inserting and molding
46	.Seal cutting
46.5	.Spring heel beveling
47	.Breasting
47.1	..Uni-directionally moving cutting edge
48	.Molding
49	.Beading
49.1	.Covering
50.5	.Removers
51	UPPER MACHINES
52	.Assembling
52.5	.With diverse operations
53.1	.Assembled shoe shaping
53.2	..By expanding and conforming
53.3	..By conforming roller
53.4	..By conforming impactor
53.5	..By conforming press action
53.6	..By expander only
53.7	...Wall-supported
53.8	...Reciprocating expander
54.1	.Loose upper shaping
54.2	..Toe only
54.3	..Heel only
54.4	..Crimping with former and wiper
54.5	...Belt-carried former
54.6	...Pivoted former
55	...Folding
55.1	...With slitting or notching
57	.Turning
57.1	..With seam pressing
57.5	.Trimming
57.6	..Sole-attaching edge
58	..Skiving
58.3	.Buttoning or unbuttoning
58.5	.Lacing or unlacing
59	.Strap covering
59.5	.Tape appliers
59.7	.Tempering
61 R	TOE AND HEEL STIFFENER MACHINES
61 A	..Assembling
61 B	..With diverse operations
62	.Skiving
63	..Recessed carrier
64	.Molding
65	..Roll
66	..Separable
67 R	WELT AND RAND MACHINES
67 A	..Welt guides
67 B	..Combined welt preparing
67 C	..Welt attaching to loose sole and heel
67 D	..Plural diverse operations
67 E	..Welt beating and slitting
67 F	..Welt butting and attaching
67 G	..Beaters
67 H	..Butting
67 J	..Forming
67 K	..Welt attaching
67 L	..Welt tempering
67.1	.Welt and rand formers
67.2	.Welt beaters
103	TOOLS

104	.Sole and/or heel burnishing
104.5	.Inside fastener end trimmers
107 R	.Lasting
107 A	...Over-lasted upper retainers
108	..Fastener holding and inserting and upper stretching
109	..Upper tensioners and hammers
110	..Upper tensioners
111	...Multiple transversely positioned grippers
112	...Toe
113	.Fly holders
114.2	.Interiorly stretching assembled shoes
114.4	..Fluid expander
114.6	..Top stretchers
114.8	...With top holder
115.2	..Spot stretchers
115.4	...With cooperating exterior former
115.6	..Variable expander
115.8	...Longitudinal and lateral
116.2	....Longitudinal and lateral lock
116.4	....Lateral lock
116.6	....Longitudinal lock
116.8	...Lateral
117.2	....Lock
117.4	...Longitudinal lock
119.5	.Upper crimping and stretching
120.5	.Sole straightening
122	SHOEMAKERS' BENCHES
123	WORK SUPPORT
123.3	.For loose heels
123.5	.For boot trees
124	.Expansible holder
125	.Heel clamping
126	.Last jacks
127	..With saddle
128 R	FORMS
128 B	..With deodorant, etc.
128 H	..For open-heel shoe
128 V	..Expanding vertical
128 C	..With upper retaining means
128 D	..With sole retaining means
128 E	..Heel plates
128 F	..With fastener receiving means
129.4	.Heated
133 R	.Lasts
133 A	...With fillers
133 B	...With altered surfaces
133 C	...With heel fastener receiving means
133 M	...Material
134	..Preliminarily adjustable
135 R	..Separate heel block
135 A	....With sliding movement
136 R	...Hinged
136 A	.....With movable instep block
136 B	.....With single link
136 C	.....With double link
137	..Instep-block fasteners
138	...Sliding bolt
139	..Heel plates and sockets
140	..Peg receivers
141	..Shoe retainers
142 R	PROCESSES
142 A	..Evaginated shoe
142 B	..Thru-and-thru shoe
142 C	..Stitch-down shoe
142 D	..Welt-type shoe
142 E	..Rubber shoe
142 EV	..Rubber overshoe
142 F	..Cemented shoe
142 G	..Felt and fabric
142 J	..Interfitted sole and heel
142 K	..Protection of shoes
142 LC	..Lacing and closing
142 MC	..Moccasins
142 N	..Orthopedic
142 P	..Athletic
142 Q	..Repairing

	PROCESSES
142 RS	..Rubber sole attaching
142 S	..Sandals
142 T	..Sole-attaching
142 V	..Ventilated
142 W	..Leggings and gaiters
145	.Lasting
146 R	.Miscellaneous parts
146 B	...Soles
146 BP	....Prepared
146 BC	.....Channeling
146 BR	...Rubber soles
146 C	...Uppers
146 CK	....Edge finishing
146 D	...Toe and heel stiffeners
146 L	...Last making
146 M	...Orthopedic parts
146 S	...Shank stiffener making and attaching
146 W	...Welts and rands
147 R	.Heel
147 A	...Rubber
147 B	...Covering
148	.Filling shoes
	********************************
	DIGESTS
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DIG 1	Lasting machines, fluid-actuated
DIG 2	Lasting machines, dash pots
DIG 3	Jigging

CLASS 14 BRIDGES

1	MISCELLANEOUS
	COMBINATION
2	.Truss and arch
2.4	PORTABLE BRIDGE, VEHICLE MOUNTED
2.6	.Floating
3	TRUSS
4	.Arrangement
5	..Adjustable
6	..Deck
7	..Cantilever
8	...Suspension
9	..Bowstring
10	...Adjustable
11	..Intermediate catenary
12	..Both chords curved
13	.Structure
	.Details
14	..Connections
15	..End shoes
16.1	..Expansion device
16.5	...Deck joint
17	GIRDER
18	SUSPENSION
19	.Compound system
20	.Simple system
21	.Towers and anchors
22	.Cables and cable clamps
23	.Constructive apparatus
24	ARCH
25	.Compound
26	.Abutments and anchorages
27	FLOATING
28	.Adjustable height
29	.Draw
30	..Locking
31	DRAW
32	.Swing
33	..Hand or motor operated
34	..Boat operated
35	..End supports and locking devices
	.Bascule
36	..Fixed pivot
37	...Hinged sections
38	...Rack and pinion
39	..Nonpivoted
40	...Rack and pinion
41	..Locking devices
42	.Lift
43	.Horizontally sliding
44	..Boat operated
45	.Lazy tongs
46	.Locking devices
47	.Aprons
48	.Buffers
49	.Signals
50	.Gates
	..Hand or motor operated
51	...Horizontally swinging
52	...Vertically sliding
53	...Vertically swinging
	..Bridge operated
	...Displacement
54	....Horizontally sliding
55	.....Locking
56	....Horizontally swinging
57	.....Locking
58	....Vertically sliding
59	.....Locking
60	....Vertically swinging
61	.....Locking
	...Shaft rotation
62	....Horizontally sliding
63	.....Locking
64	....Horizontally swinging
65	.....Locking
66	....Vertically sliding
67	.....Locking
68	....Vertically swinging
69	.....Locking
69.5	GANGWAYS
70	.Endless conveyer
71.1	.Attached
71.3	..With lift means
71.5	...Attached to fixed structure at first end and with cover and provision to fit vehicle at second end
71.7	...Hydraulic powered
72.5	.Wheeled
73	DECK
74	COVERINGS
75	PIERS
76	.Fenders
77	.Processes

CLASS 15 BRUSHING, SCRUBBING AND GENERAL CLEANING

DECEMBER 1990

1	MISCELLANEOUS
1.51	ELECTROSTATIC CLEANING
1.52	.Hand implement
1.7	SUBMERGED CLEANERS WITH AMBIENT FLOW GUIDES
3	MACHINES
3.1	.For fruit, vegetables, meat or eggs
3.11	..With assorting or screening
3.12	..Fluid application and/or work heating (e.g., drying)
3.13	...Work moved through apparatus
3.14	....Liquid application only
3.15	.....Work treating element and/or work immersed
3.16	..Work moved through apparatus
3.17	...Transverse axis work treating elements
3.18	....Longitudinally movable elements
3.19	...Fixed axis rotary work treating conveyor
3.2	....Axial work feed
3.21	...Work conveyor mounted work treating elements
3.5	.With means to pass a solid cleaning agent and a fluid carrier through tubular work
3.51	..With conservation or recovery of the cleaning agent
3.52	...By attached line
3.53	.Erasing
300.1	.With air blast or suction
301	..Fixed position cleaners or installed cleaning systems
302	...With liquid or other cleaning material application to work
303	...With work handling or supporting
304	....Hollow work internal cleaning, e.g., bag and/or bottle cleaners
305	....Tumbling cylinders or cages
306.1	....With means to guide or move the work to or through a cleaning station or treating means
307	.....With work-width compensating features
308	.....With work agitator, e.g., brushing, beating, shaking
309	......Plural diverse types, e.g., beating and brushing
309.1	.....Indefinite length article
309.2	.....Plurality of discrete articles
310	....Manual application of work to cleaning means
311	.....With moving work-agitating means
312.1	...With fixed guide for ambulant air draft applying means
312.2	....Flexible tube
313	...Installed in automobile or other vehicle for the cleaning thereof
314	...With flexible conduit connection between ambulant air draft applying means and relatively stationary air pump or supply
315	....Extensible and retractable conduit
316.1	...Air blast only (e.g., boiler soot-blower)
317	....With blowing element housing or protecting feature, e.g., embedded, disappearing or cooling
318	....Moving nozzle with air supply control interlocked with nozzle motion means
318.1	....Sequence control
319	..With automatic control
320	..With liquid or other cleaning material application to work
321	...Manipulatable nozzle with flexible conduit connection to portable power and/or material supply unit, e.g., window washer
322	...Nozzles
323	..With storage facilities for tools or nozzles, conduits, etc., e.g., racks and cabinets
324	..Illuminator for work area
325	..With fender or bumper, i.e., furniture guard
326	..With sound muffling feature
327.1	..Tank type cleaner organization
327.2	...Casing feature
327.3	....Air float or support
327.4	....Cleaner encircling roller
327.5	....Off-the-floor support (e.g., operator supported)
327.6	...Vertically aligned motor and filter
327.7	...Horizontally aligned motor and filter
328	..Convertible
329	...To or from hand held and hand manipulated
330	...Suction to or from blast
331	...Plural selective air draft means, e.g., on-floor to off-floor
332	....With agitator and/or fan interlock, e.g., floor or rug safety feature
333	.....Floor nozzle elevating
334	....Floor nozzle air flow diverted to off-floor cleaning means
335	.....Tubular handle, e.g., "Air-Way" type
336	......With supporting means, e.g., wall-mounted clamp
337	.....By insertion or attachment of additive converter
338	...Converter attached to floor nozzle mouth
339	..Combined, e.g., with signal or indicator
340.1	..Power propelled vehicle or carrier
340.2	...Maneuvered by walking attendant
340.3	...Including brush
340.4	....Plural brushes
341	..Traction or manual operation of air pump or fan
342	...Rotary air impeller
343	....Hand cranked
344	..Hand supported and manipulated, e.g., miniature or upholstery type
345	..Air blast with suction
346	...Closed circuit systems, i.e., air recirculating
347	..With dust or dirt handling or storing or separating, e.g., filter bags
348	...With conveying means additional to air stream
349	...With receiver for dirt from rotary or moving agitator
350	...Separator mounted on or attached to manipulating handle, e.g., push-broom type
351	....Handle movable relative to floor tool air exhaust conduit
352	...Separator element cleaning in situ and/or storage or removal of retained dirt
353	...With liquid and/or deflection type separator
354	..With work-contacting carriage or mount, and relatively adjustable nozzle
355	...With agitator adjustable relative to nozzle
356	....Interlocked or simultaneous adjustment
357	...Suction responsive

	MACHINES
	.With air blast or suction
	..With work-contacting carriage or mount, and relatively adjustable nozzle
358	...With work surface contact or penetration sensing
359	...Biased or floating nozzle
360	....Urged away from contact with work
361	...Handle operated or handle associated control
362	..With nozzle carriage or mount having work-surface penetration control, e.g., differential area supporting wheels
363	..With mechanical agitating means
364	...Diverse agitating operations, e.g., brushing with beating or movable with stationary
365	....Selective
366	....Rotary only, e.g., "Hoover" type beating brush
367	....Stationary or non-moving agitating means only
368	...Adjustable with respect to nozzle
369	....Responsive to translational movement of nozzles
370	....Rotary agitator with radially adjustable elements, e.g., wear compensating
371	....Floating or resiliently biased contact with work surface
372	.....Rotary work contactor
373	....Retractable, i.e., selective use
374	...Oblique or V-shaped arrangement of agitator
375	...With auxiliary ambient air inlet to nozzle, e.g., through air tunnel and/or agitator
376	....Agitator bearing or drive air bleed
377	...Auxiliary or separate, i.e., non-fan, driving motor
378	...With guard to inhibit work entry into nozzle mouth
379	...Vibrating nozzle or nozzle lips
380	...Rectilinearly moving parallel to work surface, e.g., scrubbing
381	...Oscillating agitator, e.g., sweeping
382	...Striking beater, i.e., perpendicular movement
383	...Rotary agitator
384	....Tandem agitator units
385	....Axis non-parallel to work surface
386	....With eccentrically mounted turnable work contacting elements
387	....Air current operated
388	....Traction operated
389	....Drive details
390	.....With clutch or other drive disconnect
391	.....Belt or drive housings or other protective features
392	.....Agitator bearings or supporting details
393	...Stationary agitator
394	....Work piece surrounding or opposed agitators, e.g., bar or slat cleaners
395	....For opposed surfaces or hollow work internal cleaning
396	....Hollow head with perforate reticulate supporting surface for agitator
397	.....With tubular air nozzles interspersed throughout work contacting surface
398	....Bristle brush type
399	.....With bristle bridle or air seal or shroud
400	.....Nozzle attachment type
401	....Scraper or squeegee type
402	.....Serrated or toothed, e.g., comb or rake type
403	....Dry mop type, e.g., textile strand or sheet pelt
404	..With pulsating air flow
405	..Air blast only
406	...For hollow work, internal cleaning, e.g., tube soot-blowers
407	....Work operated valve
408	....With induced flow of ambient air, e.g., jet pump
409	..Jet pump suction-devices
410	..Handle features, e.g., limit stops or storage locks
411	...Angular or lateral adjustment of cleaner by axial rotation of handle
412	..Motor features, e.g., housing or casing assemblies
413	...Air cooling by other than main air stream
414	..Detachable and/or extension nozzles
415.1	..Nozzle
416	...With plural mouths selectively usable, e.g., "duplex" nozzles
417	....Top and bottom reversible type
418	...With area adjusting, e.g., restrictors
419	...With air flow control means, e.g., work-operated valve
420	...With notched or grooved lips for localized intensification of air draft
421	...With auxiliary inlet for ambient air, e.g., vacuum relief
422	...With guard to inhibit work entry into nozzle mouth
422.1	...Width changes along transverse dimension
422.2	..Plural fans
4	.Combined
5	..Beater and brush
21.1	.Brushing
21.2	..Ball cleaner
22.1	..Handle mount
22.2	...Reciprocating tool
22.3	...Belt brush
22.4	...Swinging tool
23	...Rotary cylinder
24	....Fountain
25	....Manual motor
26	.....Alternating
27	....Traction operated
28	...Rotary disk
29	....Fountain
30	..Boot cleaning, blacking, and polishing
31	...Polish supplying
32	...Rotary reciprocating brush
33	...Reciprocating brush
34	...Rotary brush
35	....Planetary
36	..Boot cleaners and polishers
37	...Reciprocating brush
38	..Brush cleaners
39	..Comb cleaners
39.5	..Table top or tablecloth cleaner
40	..Flexible-fabric cleaners
41.1	...Carpet sweeper
42	....Auxiliary brush
43	....Combined fan and brush
44	....Dust laying
45	....Fenders
46	....Manual motor
47	....Non-rotary
48	....With brush cleaner

	MACHINES
	.Brushing
	..Flexible-fabric cleaners
	...Carpet sweeper
48.1	....Unidirectional drive
48.2	....Bellows type
49.1	..Floor and wall cleaner
50.1	...Scrubber
50.2	....Reciprocating brush
50.3	....Cylindrical brush
51	....Endless wiper
52	....Rotary wiper
52.1	...Cylindrical brush
52.2	...Reciprocating brush
53.1	..Vehicle cleaner
53.2	...Cylindrical brush
53.3	....Moving vehicle
53.4	...Wheel washer
54	..Rail sweepers
55	...Rotary brush
56	..Receptacle cleaners
57	...Barrel
58	....Single stage
59	...Bottle
60	....Endless carrier
61	.....Tank
62	....Reciprocating bottle rack
63	....Rotary carrier
64	.....Tank
65	....Single bottle
66	.....Bottle guide
67	.....Neck cleaners
68	.....Reciprocating brush
69	.....Water motor
70	...Can
71	....Inside brush
72	.....Collapsible
73	...Cuspidor
74	...Dish
75	...Tumbler
76	....Immersion
77	..Sheet, bar, and plate cleaners
78	..Street sweepers
79.1	...Hand directed
79.2	....Motor powered sweeper
80	...Belt brush
81	...Reciprocating brush
82	...Rotary-brush cylinder
83	....Collector
84	.....Elevator belt
85	.....Elevator pan
86	.....Elevator wheel
87	...Rotary-brush disk
88	..Wire, rod, and tube cleaners
88.1	..Work moves past nonrotatable brush
88.2	..Work moves past rotatable brush
88.3	...Cylindrical brush
88.4	..Cylindrical brush moves past work
89	.Beating
90	..Rotary drum
91	..Stationary work
92	...Portables
93.1	.Scraping
93.2	..Coke oven cleaner
93.3	..Ditcher
93.4	..Pallet, board, panel, etc.
94	.Shaking
95	.Shotting
96	..Shakers
97.1	.Wiping
97.2	..Shoe polisher
97.3	..Vehicle cleaner
98	..Floor and wall cleaner
99	...Endless belt
100	..Photographic-film cleaners
101	..Receptacle cleaners
102	..Sheet, bar, and plate cleaners
103	..Window cleaners
103.5	..Rolling contact type with material supply
104 R	IMPLEMENTS
104 A	..Lint remover
104 S	..Bladed spreader
104.011	.Cylinder, piston or plug cleaner
104.012	..Piston groove
104.02	.Reamers
104.03	.Pipe and tube cleaners
104.04	..Outside
104.05	..Inside
104.061	...Fluid current operated
104.062	....Cleaner plug insertion or removal device
104.063	....Scraper with signalling device
104.07	...Hammer
104.08	...Tube deformer
104.09	...Rotary tool
104.1 R	....Outside power
104.1 C	......Container cleaners
104.11	.....Inside boiler drum
104.12	....Contiguous fluid motor
104.13	....Plural rotary cutter
104.14	....Centrifugally pivoted
	...Reciprocating tool
104.15	....Plural rotary cutter
104.16	....Scraper, cutter, wiper or brush
104.165	.....Non-piercing fabric holder
104.17	.....Expanding at both ends
104.18	.....Expanding at one end
104.19	.....Expanding between ends
104.2	.....Radial bristle
104.31	...Sewer
104.32	....Grapple
104.33	....Snake
104.5	.Comb cleaners
104.51	..Multiple strand type
104.52	...With rigid supporting frame
104.53	....With attached brush
104.54	....Non-planar groups of strands
104.8	.With coacting material receiver
104.9	.Machine-attachable bottle washing implement
104.92	.Stationary implement with material supply
104.93	.Tool coated or impregnated with material supply
104.94	..Including means for manual manipulation of implement
105	.Combined
105.5	..Mortar-joint finisher
105.51	..Eraser
105.52	...And brush
105.53	...And cutter
106	..Brush
107	...Dauber and polisher
110	..Brush and massage-tool
111	..Brush and scraper
112	...Boot cleaners
113	....Hand
114	..Brush and wiper
115	...Mop
116.1	...Mop and wringer
116.2	....Sponge mop
117	..Brush and squeegee
118	..Wiper
119 R	...Mop and wringer
119 A	.....Sponge mop
120 R	....Twisters
120 A	......Involving handle
121	...Squeegee
423	.Pen cleaner
424	.Eraser
425	..Including handling means
426	...And means for non-use attachment to a support
427	...Which is pencil sheath or casing

	IMPLEMENTS
	.Eraser
	..Including handling means
	...Which is pencil sheath or casing
428	....Eraser attachable to fore-end of sheath or casing
429	....Including advancing means for erasive body
430	.....Axially adjustable sleeve
431	....Including enclosure for base of erasive body
432	.....Multi-partite handling means
433	...Including advancing means for erasive body
434	...Directly adjustable erasive body
435	.Penpoint or penholder
436	..Including projectable and retractable penpoint
437	..With means supporting or stabilizing implement in use
438	..Including manually adjustable gripping or releasing means for penpoint
439	...Pivoted or arcuately movable
440	....About axis of penholder
441	...Including opposed, relatively axially movable gripping members
442	...And ejector
443	..Penholder shaped to receive or engage hand or finger
444	..Penholder includes specific penpoint retaining means
445	..Specific penpoint
446	...Specific material
447	...Bifurcate
141.1	.Beater
141.2	..Rotary
142	.Grids and combs
143 R	.Handles
143 A	...For portable machine
143 B	...Variable length
144 R	..Adjustable
144 A	....Universally
144 B	....Telescopic type
145	..Detachable
146	.Holders, brush and broom
147 R	.Holders, mop
147 A	...Non-clamped
147 B	...Frame attached cloth
147 C	...Both jaws movable
147 D	...With shaker
148	..Convertible
149	..Expansible
150	..Pivoted jaw
151	..Sliding jaw
152	...Lever operated
153	...Screw operated
154	..Spring wire and runner
159 R	.Brushes and brooms
159 A	...Bristle configuration or composition
160	..Special work
161	...Boot cleaners
162	...Flue cleaners
163	....Suspension
164	...Hollow-ware cleaners
165	....Collapsible
166	...Stripping
167.1	...Tooth or nail brush
167.2	....Concurrently brushes plural tooth surfaces
167.3	....Nail brush
168	..Bridles
169	...Adjustable
170	...Straw supported
171	..Heads and casings
172	...Adjustable head
173	...Axial clamp
174	...Bands
175	...Braces, caps, and shields
176.1	...Detachable head
176.2	....With handle-head cooperating threads
176.3	....With screw-type fastener
176.4	....Perpendicularly insertable
176.5	.....With securing means
176.6	....With securing means
177	...Lateral clamp
178	....Pivoted jaw
179	...Rotary
180	....Disk
181	....Laminated
182	....Spiral bristle mount
183	....Tuft-holding bar
184	..Housings
185	...Pivoted
186	..Individual-bristle mount
187	...Integral
188	....Rubber
189	..Stitched and wire bound
190	..Tuft fasteners
191 R	..Tuft socket
191 A	....Fountain
192	...Cemented
193	....Plastic mass
194	...Detachable tuft
195	...Folded tuft
196	....Drawn work
197	....Metal bristle
198	.....Rotary
199	....Retaining wire
200	...Metal bristle
201	...Movable tuft section
202	....Detachable
203	....Folding
204	...With core
205	....Folded tuft
206	..Twisted bristle holder
207	..Wire wound
208	.Fabric
209 R	..Wipers, daubers, and polishers
209 B	....Scourers
209 C	.....Fibrous mass
209 D	......With handle
209 E	....Powder puff
210 R	...Special work
210 A	.....Venetian blind
210 B	.....Rod or wire
210.5	....Graining implements
211	....Hollow-ware cleaners
212	.....Expansible
213	......Rotary
214	....Lens cleaners
215	....Mats
216	.....Combined
217	.....Tuft carrying
218	....Razor cleaners
218.1	....Cutlery cleaners
219	....Wall-paper cleaners
220 R	....Window cleaners
220 A	......Magnetic
221	...Collection chamber
222	...End grip
223	...Work face with exposed laminae
224	....Channeled
225	....Coil
	...Laminated
226	....Strands
227	...Mitts, cots, and shoes
228	...Mops and heads
229.1	....Having strands
229.2	.....With fixed handle
229.3	......And cloth sheath type head
229.4	......And pocket type head
229.5	......And twisted wire frame
229.6	.....With pivoted handle
229.7	......And cloth sheath type head
229.8	......And pocket type head
229.9	......And twisted wire frame

	IMPLEMENTS
	.Fabric
	..Wipers, daubers, and polishers
230	...Rotary
230.1	....With cooling means
230.11	....Roller with handle
230.12	....Adhesively bound parts
230.13	....Coil wound
230.14	....Sectored disc or cylinder
230.15	....Stitched laminates
230.16	....Interrupted work engaging surface
230.17	....Fabric-piercing securing element
230.18	....Working surface dished inwardly or outwardly
230.19	....With discrete mechanical fabric securing means
231	...Sheet holders
232	....Window cleaners
233	...Tension frame
234	.Feather
235	.Pelts
235.3	.Mortar-joint finisher or simulator
235.4	.Mason's trowel or float
235.5	..Darby type
235.6	..Undulated
235.7	..Corner type
235.8	..Adjustable
236.01	.Scrapers
236.02	..Windshield
236.03	..Paint roller
236.04	..Gutter
237	..Boot cleaners
238	...Mats
239	....Pivoted link
240	.....Filler block
241	....Wire
242	..Flue cleaners
243	...Suspension
236.05	..Plural bladed
236.06	...Simultaneously useable
236.07	..Arcuate scraping edge
236.08	..Toothed or serrated
236.09	..For plural surfaces
236.1	..Rotary
244.1	.Sponge or sponge with holder
244.2	..Having pivoted handle
244.3	..Having fabric cover or back
244.4	..Sponge
245	.Squeegee
246	ATTACHMENTS
246.5	.Tank cleaners
247	.Covers and cover holders
248 R	.Drip cups and shields
248 A	...For rollers
249	.Flue cleaners
250 R	.Optical member cleaner
250 A	...Headlight
250 B	...Mirror
250 C	...Moisture responsive
250 D	...Instrument
250.01	..With material applying means
250.02	...Coordinated operation of cleaner and applying means
250.03	...Supply source carried by cleaning element
250.04	...Applying means moves with cleaning element
250.05	..With heating means
250.06	...Embedded in wiper blade
250.07	...Movable with cleaning element
250.08	....Laterally offset to engage pane
250.09	....Heating element between plural blades
250.1	..Window moved on cleaner
250.11	..Readily attached and detached cleaner for building windows
250.12	..Constant speed or automatic motor control
250.13	..Sweep varying or regulating means
250.14	..Plural out-of-phase cleaning elements
250.15	..Cleaning element spring returned
250.16	..With parking means
250.17	...Electrical
250.18	..Convertible to manual operation
250.19	..Cleaning element moved from surface
250.2	..Pressure adjusting means for cleaning element
250.21	..Compound motion of oscillating arm
250.22	..Rotating cleaning element
250.23	..Cleaning element moved relative to arm when arm moves
250.24	..Chain, belt or cable carried cleaning element
250.25	..Chain, belt or cable driven operating shaft
250.26	..Screw type drive for reciprocating cleaning element
250.27	..Operating connection for plural oscillating cleaning elements
250.28	..Opposed cleaning elements
250.29	..With means to reciprocate cleaning element
250.3	..With means to oscillate arm
250.31	..Coupling or mounting detail
250.32	...Arm-to-cleaning element connection
250.33	....Hinged longitudinally of cleaning element
250.34	...Arm-to-actuating shaft detail
250.35	..Arm structure
250.36	..Cleaning element structure
250.37	...With attached roller
250.38	...Longitudinal tensioning means for blade
250.39	...Adjustable length
250.4	...Supplemental cleaning means brought into surface contact
250.41	...Plural spaced surface engaging edges
250.42	...Wiper with superstructure
256.5	.Moving surface scraper, wiper, or brush
256.51	..Roll cleaners
256.52	...Rotary
256.53	...Reciprocating or traveling
256.6	..Strand
257 R	ACCESSORIES
257 A	..Vacuum cleaner
257 B	...With treating means (e.g., deodorizing, sterilizing, etc.)
257.05	.Coating applicator loading means
257.06	..For loading roller type applicators
257.07	..Inkwell
257.072	...Including implement-actuated diaphragm to produce material moving force
257.073	...Including means limiting immersion of penpoint
257.074	...Anti-spill type
257.075	...Including implement-opened access means
257.076	...Including means defining applicator-loading zone
257.1	.Debris receptacle (e.g., dustpan)
257.2	..With means to attach to brush or broom
257.3	..Separate inlet and outlet
257.4	..Receptacle gravitatable to material retaining position
257.5	..Foothold or pedal operator
257.6	..With movable closure
257.7	..Adjustable, relatively movable or detachable handle
257.8	..Foot or prop on rear of receptacle
257.9	..Auxiliary, flexible or reinforced edge
258	.Blacking-box and brush cases
259	.Blacking-box holders
260	.Mop wringers
261	..Presser boards
262	..Roller

	ACCESSORIES
	.Mop wringers
263	..Twisters
264	.Scrubbing pails
265	.Shoe-blacking stands
266	..Polisher guides
267	..Shoe clamps
268	WORK SUPPORTS
	******************************
	DIGESTS
	******************************
DIG 1	Rechargeable batter
DIG 2	Car cleaning plants
DIG 3	Matrix
DIG 4	Ferrules
DIG 5	Varied length bristle
DIG 6	Varied composition bristle
DIG 7	Driers
DIG 8	Dust bags and separators
DIG 9	Dust mop cleaners
DIG 10	Handles, reels and switches
DIG 11	Indicators
DIG 12	Tape head cleaner
DIG 13	Magnetic tape cleaner
DIG 14	PHONOGRAPH RECORD CLEANER

CLASS 16 MISCELLANEOUS HARDWARE

DECEMBER 1990

1 R	MISCELLANEOUS
1 C	..Counterbalanced
2	BRUSHING OR LINING THIMBLES
3	.Wooden receptacle
4	CARPET FASTENERS
5	.Combined fasteners and stretchers
6	.Hook
7	.Moldings
8	.Rug
10	.Stair
11	..Risers
12	..Rods
13	...Catches
14	....Sliding
15	....Swinging
9	.Sliding
16	.Strips
17	.Swinging
18 R	CASTERS
18 A	..Inclined axle
18 CG	..Caster guard
18 B	..Obstruction climbing aid
19	.Adjustable
45	.Wheels
46	..Antifrictionally mounted
47	..Multiple
48	...Antifrictionally swivelled
20	.Antifrictionally swivelled
21	..Ball
22	..Cylinder
23	...Pivoted
24	.Ball
25	..Antifrictionally mounted
26	...Ball
27	...Cylinder
28	..Pivoted
29	.Bracket supports
30	.Detachable
32	.Leg elevators
33	..Sliding
34	..Swinging
35 R	.Locked
35 D	...Shimmy dampening
36	.Lubricators
37	.Pintles
38	.Pintle retainers
39	..Frame
31 R	.Frame
31 A	...Single leg frame or fork
40	.Rigid wheel supports
41	.Scrapers
42 R	.Sliding
42 T	...For tubular leg
43	.Sockets
44	.Spring supported
48.5	THERMALLY RELEASED CHECK OR CLOSER
49	CHECKS AND CLOSERS
51	.Liquid
52	..Concentric spring chamber
53	...Cam
54	..Hinge
55	...Floor pivot
56	..Multiple piston
57	..Oscillating cylinder
58	..Oscillating piston
59	..Side spring chamber
60	...Cam
61	..Spring and flexible link
62	..Spring and gear
66	.Pneumatic
67	..Flexible link
68	..Hinge
69	..Spring and gear
70	..Spring and lever
63	.Spring and flexible link
64	.Spring and gear
65	.Spring and lever
50	.Hinge
86.1	GATE HANGERS
86.2	.Sliding and swinging
87 R	PANEL HANGERS, TRAVELERS AND/OR TRACKS
87 B	..Overlapping doors, common track
87.2	.With flexible panel attaching means
87.4 R	..Covered, hollow or slotted track
87.4 W	....Wood track
87.6 R	...With antifriction means
87.6 W	.....Wood track
87.8	..With antifriction means
88	.Ball
89	.Cylinder
90	.Guide brackets
91	.Guide rollers
92	.Link and lever
93 R	.Sliding shoe
93 D	...Drapery supports
94 R	.Track and bracket
94 D	...Drapery supports
95 R	.Covered, hollow or slotted track
95 W	...Wood
95 D	...Drapery supports
95 DW	....Wood
96 R	.Tracks
96 D	...Drapery supports
96 L	...Laminated
97	.Wheel mounts
98	..Antifrictionally mounted wheels
99	..Door elevating
100	..Floor
101	..Reciprocating track
102	..Traveling wheel
103	..Swinging
104	..Swiveling
105	..Vertically adjustable
106	..Wheel and guide roller
107	.Wheels
108	FERRULES, RINGS, AND THIMBLES
109	.Ring ferrules
110 R	HANDLES
110 A	..Pot or pan
110.5	.Receptacle
111 R	.Bar
111 A	...Lawn mower
112	..Swinging
113	.Braces
114 R	.Detachable
114 A	...Pot
114 B	...Cord
115	.Extensible
116 R	.Insulated
116 A	...Unshaped and unattached pads
117	..Handwheels
118	..Knob
119	..Loop
120	..Wire
121	.Knob
122	..Flexible suspending means
123	..Swinging
124	.Lifts
125	.Loop
126	..Swinging
127	.Ring
221	HINGE
222	.Including frangible or fusible portion
223	.With diverse art portion or attachment
224	.Ball and socket
225	.Pliant or elastic hinge
226	..Metallic
227	..Snap or X hinge
228	.Eyeglass hinge
229	.Retractable pintle
230	..Latch hinge
231	.Latch hinge
232	..Resilient securing means
233	.Including lever for shifting one hinged member relative to another
234	.Having staggered leaves

HINGE
235 .Including adjustment for changing relative orientation of hinged members
236 ..Having plural independent adjustments
237 ...All rectilinear
238 ....Including screw-operated means to move hinged members
239 ..Pivotal adjustment
240 ...Including screw-operated means to move hinged members
241 ....About hinge axis
242 ..Including means to move hinged members
243 ...Along or parallel to hinge axis
244 ....Including threaded hinge pin
245 ...Screw-operated
246 ....To shift plate toward or away from hinged member
247 ..Having adjustable spacer between leaf and hinged member (e.g., shim)
248 ..Adjustable along or parallel to hinge axis
249 ..Having interdigitated surfaces or slot for hinge-to-member fastener
250 .Having cover
251 ..Leaf cover
252 .Having clamp for attaching hinge to hinged member
253 ..Circumferential clamp
254 .Having means to facilitate assembly and disassembly of hinge sections to join or disjoin hinged members
255 ..Resiliently biased hinge
256 ...Having helical spring along hinge axis
257 ..Resiliently biased retaining means
258 ...Having discrete latch and spring to slide or pivot latch
259 ...Discrete retaining means for pivotal contacting surfaces
260 ..Separation of pivotal contacting surfaces
261 ...Having movable or removable connector
262 ....Pintle removable from remainder of hinge
263 .....And additional connector for pintle or separate pintle sections
264 ....Screw-threaded connector
265 ...Axially shifting hinge sections
266 ....At specific angular orientation of hinge sections
267 ...Hook and pin
268 ...Hook in aperture
269 ...Hook to hook
270 ..And discrete movable or removable connector to fasten one hinge section to another
271 ..By relatively sliding connection (e.g., dovetail)
272 ...Including receiving connector attachable to hinged member
273 .Having means to reduce friction between hinge parts
274 ..By fluid lubricant
275 ..Ball or roller bearing
276 ...Circularly distributed balls or rollers
277 .Resiliently biased hinge
278 ..Including means to render spring ineffective through all or a portion of swing
279 ...Comprising manipulatable element or portion
280 ..Biased from either direction toward neutral position (e.g., double acting)
281 ...Helical spring transverse to hinge axis
282 ...Plural hinge axes (e.g., multiple pintle)
283 ....And barrels for helical springs on separate axes
284 ...Resiliently biased rolling or sliding cam surface
285 ...By helical spring along hinge axis
286 ..Having transverse helical spring or elastic strip
287 ...Plural hinge axes (e.g., multiple pintle)
288 ....Four or more axes
289 ...To counterbalance weight of hinged member (e.g., closure biased to open position)
290 ....Including pivoted coaxial spring retaining bar
291 ...Over-center spring or linkage travel (e.g., "holdback hinge")
292 ...Having means to hold hinged members against pivotal movement about hinge axis (i.e., catch)
293 ..Over-center spring or linkage travel (e.g., "holdback hinge")
294 ...Plural hinge axes
295 ...Coil spring having axis along or parallel to hinge axis
296 ...Including camming or sliding surface to deflect spring perpendicularly to the hinge axis
297 ..Having means to hold hinged members against pivotal movement about hinge axis (e.g., catch)
298 ..Having force adjustment
299 ...Rotatable spring-engaging collar
300 ....Having detention aperture or protuberance
301 ....Having tool-receiving aperture
302 ..Plural hinge axes (e.g., multiple pintle)
303 ..Having axially biased camming surface
304 ..Coil
305 ...Plural coils
306 ...To counterbalance weight of hinged member (e.g., horizontal closure biased to open position)
307 ...On pintle
308 ..Torsion spring
309 .Gravitating hinge having vertical axis
310 ..Having lift rod
311 ..Having plural spaced hinge axes
312 ..Including cam surface and follower
313 ...And rolling element
314 ....Between opposing surfaces
315 ....And detent in cam surface
316 ...On axially twisted or helically fluted element
317 ...Including means to hold hinged members against pivotal movement
318 ...Having aperture for slidably receiving pintle (e.g., camming knuckle)
319 .Including means to hold or retard hinged members against pivotal movement (e.g., catch)
320 ..Magnetic
321 ..Resiliently biased catch
322 ...Having spring force adjustment
323 ...Including toggle linkage
324 ...Having discrete manipulatable release means (e.g., lever)
325 ....Including cam or eccentric
326 ....Sliding release means or lever-actuated sliding catch
327 ...Sliding
328 ....Movement along or parallel to hinge axis
329 .....Interdigitated or plural sockets

	HINGE
	.Including means to hold or retard hinged members against pivotal movement (e.g., catch)
	..Resiliently biased catch
	...Sliding
	....Movement along or parallel to hinge axis
	.....Interdigitated or plural sockets
330	......Opposed interdigitated sliding collars on hinge axis
331	.....And catch receiving socket
332	....And catch receiving socket
333	...Pivoted
334	...Plural alternately useable detents
335	...Spring arm
336	....Plural opposed arms
337	..By friction
338	...Screw-threaded adjustment
339	....Along or parallel to hinge axis
340	.....Threaded pintle
341	...Cam or wedge actuator
342	...On hinge pin or between surfaces surrounding hinge axis
343	..Pivoted
344	...Plural alternately useable detents
345	...And sliding
346	...Serially connected pivoted arms between leaves (e.g., brace)
347	...About axis along or parallel to hinge axis
348	..By transversely moving pin in slot
349	..Having discrete manipulatable release means (e.g., lever operated)
350	..By shifting hinged members
351	...Along hinge axis
352	..Sliding
353	...Along or parallel to hinge axis
354	.Including toothed gear
355	.Comprising nested open curved portions attached to hinged members
356	..Including hinge pin
357	.Including transversely moving pin in slot
358	..Plural noncollinear pins and slots
359	...Parallel slots
360	..Having pin fixed to pivoted arm or plate
361	..Hinge pin movable along slot
362	.Including sliding surfaces to permit relative translation of hinged members
363	..And stop or abutment for pivotal movement
364	..Movement transverse to hinge axis
365	.Three-hinged members
366	.Having plural hinge axes (e.g., multiple pintle)
367	..Having transverse or skewed axes
368	..Connected by serially arranged pivoted links between hinged members
369	...Plural sets of serially arranged pivoted links
370	..Four or more axes
371	..Including stop or latch
372	.Including laminated leaf
373	.Wire hinge
374	.Having stop or abutment
375	..Adjustable or resilient
376	..Comprising relieved axially opposed relatively rotating surfaces
377	..Comprising platelike bearing portion curved about hinge axis
378	.Hinge axis passes through hinged member (e.g., floor hinge)
379	..Pintle or pivot concealed in hinged member

380	.Including means to retain pintle in hinge (e.g., tamper proof, nonrising pintle, etc,)
381	..Threaded or slotted pintle or knuckle
382	.Including means to fasten leaf to member
383	..By expandable connector
384	..Self-penetrating fastener
385	.Specified material
386	.Specific pintle structure
387	.Specific leaf structure
388	.Having prongs or cooperating structure on leaf
389	..Angular leaf sections
390	...Parallel sections
391	...Coplanar sections
392	...Including planar section perpendicular to hinge axis
71	CLOSERS
78	.Spring and flexible link
79	.Spring and gear
80	.Spring and lever
72	.Spring
73	..Bow
74	..Rubber
75	..Torsional
76	...Coil
77	..Volute
81	.Weight
82	CLOSURE CHECKS
83	.Inertia
84	.Pneumatic
85	.Spring
86 R	..Rubber
86 A	....Rubber cushioned
86 B	....Multiple or opposed buffer surfaces
86 C	....Link type
193	SASH BALANCES
194	.Cord and counterweight
196	.Sash and cord
197	.Spring
198	..Drum and cord
199	..Friction roller
200	..Lever
201	..Rack and pinion
195	.Rack and pinion
202	SASH-CORD FASTENERS
203	.Bendable
204	.Chain
205	.Clamps
206	.Hooks
207	.Knot
208	.Slack-cord holders
209	.Weight
210	SASH-CORD GUIDES
215	.Wheel and casing
211	.Casings
212	..Sheet metal, single piece
213	.Multiple wheel
214	.Sliding
216	SASH WEIGHTS
217	.Composite
218	.Sectional
219	.Weight and wheel
220	WINDOW-BEAD FASTENERS
	******************************
	DIGESTS
	******************************
DIG 1	Overhead door
DIG 2	Paint guard, kick guard
DIG 3	Holddown
DIG 4	Mirror mount
DIG 5	Push and pull bar
DIG 6	Anti-rattle
DIG 7	Door opening apparatus
DIG 8	Weights
DIG 9	Hydraulic actuated checks, closers
DIG 10	Spring actuated checks and closers

DIG 11	Fireplace screen
DIG 12	Hand grips, preformed and semi-permanent
DIG 13	Plastic hinge
DIG 14	Magnetic hinge
DIG 15	Battery handles
DIG 16	Window brakes, counterbalances
DIG 17	Checks and closers, holding means
DIG 18	Composition handles
DIG 19	Cast or molded handles
DIG 20	Door brakes (track or guideway)
DIG 21	Checks, closers, check valve construction
DIG 22	Expansion bolt
DIG 23	Reversible
DIG 24	Handle fastening means
DIG 25	Handle fastening means, clamp band
DIG 26	Headlight hinge
DIG 27	Bearings
DIG 28	Mattress handle
DIG 29	Nesting hinge leaves
DIG 30	Knob, control lever
DIG 31	Pulley (door guides and hangers)
DIG 32	Door latch
DIG 33	Rubber sleeve bearings and hinges
DIG 34	Eccentric adjustments
DIG 35	Skidways
DIG 36	Spring
DIG 37	Nut lock
DIG 38	Lawn mower type tongue and cross arm
DIG 39	Adjustment means
DIG 40	Attaching means
DIG 41	Coupling (handle, rod, shaft)
DIG 42	Methods (misc.)
DIG 43	HINDGE MOUNTING BRACKET

CLASS 19 TEXTILES, FIBER PREPARATION

0.2	STOPPING
0.21	.Photo responsive
0.22	.With signal
0.23	.Thickness detection
0.24	..Floating roll
0.25	.Break or run-out detection
0.26	..Strand winding
0.27	DRYING
0.3	STAPILIZING
0.35	.Tension breaking
0.37	..With weakening
0.39	..Multi-stage
0.41	..With lateral filament deflection
0.43	..Differential effect
0.46	.With prior treatment
0.48	..Aligning or separating
0.51	.With stapled fiber overlapping
0.56	.Combined
0.58	.Continuously flowing work
0.6	..Cutting
0.62	...Differential speed rotary cutter
0.64	...Fraying (e.g., abrasive)
1	LIBERATING
2	.Animal fibers
3	..Silk
4	..Feathers
5 R	.Decorticating
5 A	...Systems
6	..With seed or leaf removing
7	..With liquid treatment
8	...Depulping
9	..With air blast
10	..Individual stalk opening
11	..Traveling clamp feed
12	...Transverse
13	....Overhead
14	.....Depulping
15	....Depulping
16	.....Single rotor
17	...Depulping
18	....Including rotary
19	..Apron machines
20	...Depulping
21	..Combinations with reciprocating brakes
22	..Reciprocating brakes
23	...Continuous feed
24	..Rotary machines
25	...Axially movable rotor
26	...Single rotor
27	....Depulping
28	...Depulping
29	...Including brakes and combs
30	...Brakes and beaters
31	...Brakes
32	....Reverse rotation
33	...Beaters
34	..Depulping
35	.Boll hulling
36	..With knocker roll and breaker
37	..With knocker roll
38	..With breaker
39	.Ginning
40	..Delinting
41	...Delinters
42	....Separate delinting and doffing chambers
43	.....Roller and bar
44	....Rotor in shell
45	.....Vertical
46	......Skeleton rotor
47	.....Skeleton rotor
48 R	..Gins
48 A	....Disc type
49	...Rolling squeeze
50	...Roller and bar
51	....Laterally movable detacher
52	....Vibratory detacher
53	....Rotary detacher
54	...Rollers
55 R	...Saw
55 A	.....Gin breast lift
55 B	.....Float roll
56	....With boll hullers
57	....Multiple cylinders
58	....Doffing and moting
59	.....Pneumatic doffing
60	.....Brushes
61	....Seed boards
62 R	....Ribs
62 A	......Rotary rib
63	....Saws
64	....Saw cleaners
64.5	..Feeding
65 R	WORKING
65 A	..Systems
65 T	..Tow
65 CR	..Crush rolls
66 R	.Fluid or special treatment
66 CC	...Cotton conditioning
66 T	...Tow
66.1	..Crimping or curling
66.2	...Opposed intermeshing traveling surfaces
200	..Cleaning
201	...By detergent
202	...Including condensing or saw action
203	....And doffing
204	...And feeding
205	....Pneumatic
80 R	.Picking
80 A	...Separator
81	..Nonrotary
82	..Disintegrators
83	...Gripping
84	..Bur removers, gripping feed
85	..Beaters
86	...Gripping feed
87	....Multiple rotor
88	.....With condenser
89	....With condenser
90	...Longitudinal feed
91	....Multiple rotor
92	...Intermittent feed
93	...Multiple rotor
94	...Rotors
95	...Screens
96	..Gripping feed
97	..Rotors
97.5	..Feeding
98	.Carding
99	..Card types
100	...Roller worker and stripper
101	....Multiple-roller worker unit
102	...Traveling flat
103	....Bends
104	...Stationary flat
105	..Feeding
106 R	..Doffing
106 A	....Doffer comb
107	..Waste recovering
108	..Stripping
109	...Pneumatic
110	...Flat
111	....Traveling
112	..Cylinders
113	..Flats
114	..Card clothing
115 R	.Combing
115 A	...Draw-off rolls
115 B	...Waste collector
215	..Tuft combing
216	...Tuft translating type
217	....Rotary
218	...Waste clearing
219	...With auxiliary pressing
220	...Nonrotary combing

	WORKING
	.Combing
	..Tuft combing
	...Nonrotary combing
221	....Stationary when combing
223	.....Moving to combed position in timed relation to nipper or detaching motion
224	.....Adjusting
225	...With oscillating or reciprocating nipper
226	....Plural pairs - alternating
227	....Resilient closing or opening
228	....Adjusting
229	...Detaching (i.e., segment)
230	....Belt
231	....Roll
232	.....Oscillating or reciprocating
233	...Rotary comb cylinder
234	....Half lap
235	...Nipper
122	..Circle
123	...Exterior and interior
124 R	...Dabbing mechanism
124 B	.....Brush
125	..Overhead traveling clamp
126	..Apron and cylinder
127	..Apron
128	..Cylinder
129 R	..Screw gill bar
129 A	....Gill bar cleaners
236	.Drafting
237	..Producing longitudinal variations
238	...By variation of fiber input rate
239	..With material sensing
240	...And speed changing
241	....By belt shifting
242	..With fiber stretching
243	..With doubling
244	..Apron type
245	...With clearing
246	...With condensing
247	...With fiber orienting
248	...Pressing or holding fibers against belt
249	...With auxiliary apron support
250	...Tensioning
251	....By roll
252	...With apron guide
253	....Including specific cross-guide structure
254	....Cradles
255	.....For plural aprons
256	...With adjustments
257	..With cooperating trough
258	..Roll type
259	...Including slip roll
260	...Including changing roll speed or location
261	....Roll-spacing adjusting
262	...With clearing
263	....Pneumatic
264	....Underclearing
265	....Top roll
266	...Pressure-applying devices
267	....With releasing means
268	.....Responsive to roll relationship
269	.....Gravity pressure means
270	....Signal
271	....Uniform pressure applying to all rolls or plural pairs from a single source
272	....Magnetic, hydraulic, or pneumatic
273	....Applied through stirrup and saddle
274	.....Including fulcrumed lever linking stirrup and pressure means
275	......Gravity pressure applying means
276	.......With means to vary or permit variation of pressure effect on fulcrumed lever arm
277	.....Spring pressure applying means
278	....Applied through saddle
279	.....Spring pressure applying means
280	......With pressure-adjusting means
281	....Spring pressure applying means
282	.....With means to adjust pressure
283	....Gravity pressure applying means
284	....Saddle per se
285	.....Lubricating or antifriction means
286	...Roll condensing
287	...Reciprocating transverse guide, condenser or roll
288	...With fiber guide, condenser or brake
289	....Including marginal folding
290	....Presser
291	....Open type
292	....Adjustable
293	...Gear or friction driving
294	...Roll stands
295	....Top roll
144	ASSEMBLING
145	.Different materials
145.3	..Fiber to stick or rod
145.5	..Blending
145.7	...By carding
148	.Article, screen-condensing
149	.Article, winding
150	.Silver forming
151	..Fleece dividers
152	..Rub rolls
153	..Rub aprons
296	.Web forming
297	..With fiber sampling
298	..With split lap preventing
299	..Including continuous filaments
300	..Control means responsive to sensed condition or program
301	..Irregular, nonuniform, or patterned receiving surface
302	..Stratified or multilayer
303	..With divided fiber stream or separate handling of trash or fugitive fiber
304	..Fluid propelled to condenser
305	...With fiber liberation
306	....Gripping feed to fiber separator
307	.....Rotary condenser
308	...Rotary condenser
157	.Formed silvers
159 R	..Coiling
159 A	....Can changing
160	..Zigzag
161.1	.Formed web
163	..Zigzag

CLASS 23 CHEMISTRY, PHYSICAL PROCESSES

DECEMBER 1990

293 R	PHYSICAL PROCESSES
293 S	..Sulfur
293 A	..Flaking, spraying
294 R	.Sublimation
294 S	...Sulfur
295 R	.Crystallization
295 G	...Gel
295 S	...Solar
296	..Selective
297	...With extraction
298	...From natural sources
299	..With extraction
300	..With added material
301	...Seed
302 R	..Alkali metal and ammonium compounds
302 A	....Ammonium compounds
302 T	....Sodium compounds
303	...Common salt
304	..Alkaline earth metal and magnesium compounds
305 R	..Heavy metal or aluminum compounds
305 A	....Aluminum compounds
305 F	....Iron compounds
305 RE	....Rare earth compounds
306	.Concentration of liquids in liquids
307	..With direct heating
308 R	.Melting out
308 S	...Sulfur
313 R	.Agglomerating
313 AS	...Silicate
313 FB	...Fluidized bed
313 P	...Pan agglomeration
314	..Carbon

CLASS 24 BUCKLES, BUTTONS, CLASPS, ETC.

DECEMBER 1990

1	MISCELLANEOUS
2	ALBUM FASTENERS
2.5	GUN BAND TYPE
3 R	ARTICLE HOLDERS
3 A	..Arm and leg carried
3 B	..Neck supported
3 C	..Eyeglasses with retaining means
3 D	..Of wire
3 E	..Open ended
3 F	..Article holding receptacles
3 G	..Spectacle case with clip
3 H	..With pocket engager
3 J	..With spring clip
3 L	..With clip
3 M	..With flexible connector
3 K	..Key ring holder
4	.Chatelaine safety hooks
5	.Flower
6	..Pin attached
7	.Napkin
8	..Hook
9	..Neck inclosing
10 R	.Pencil
10 A	...Rule holder
11 R	..Clasp attached
11 FE	....Finger ear, belt attached pencil holder
11 PP	....Pencil holder with paper clip
11 CC	....Combined and convertible pencil holder
11 CT	....Container type pencil holder
11 HC	....Separate pencil holder and pocket engaging clip
11 S	....Sliding jaw pencil holding clip
11 C	....Wire pencil holder
11 F	....Flexible shank pencil-holder
11 M	....With movable catch (e.g., pin pivoted lever, roller, etc.)
11 P	....Pivoted jaw pencil holder
12	..Pin attached
15	.Sleeve
13	.Pin attached
16 R	BALE AND PACKAGE TIES, HOSE CLAMPS
16 PB	..Plastic band
17 R	.Packet holders
17 A	...Adjustable bands
17 B	...Closed loops
17 AP	...Plastic bands
18	..Cord
19	.With tighteners
268	..Wedge
269	..Winder
270	..Self-locking (dead center or snap action)
271	...Adjustable girth
272	....Rack bar
273	..Lever
274 R	..Worm and tooth
274 P	....Pivotal worm band clamp
274 WB	....Radial worm band clamp
275	..Integral thread
276	...External thread
277	....Both ends threaded
278	..Radial screw
279	..Tangential screw
280	...Adjustable girth
281	....Step adjustment
282	.....Plural separable parts
283	...Wire
284	...Plural separable parts
285	...Pivotal strap parts
286	...Plural wrap
20 R	.Metal bands
20 CW	...Circumferentially swagged band clamp
20 EE	...End-to-end integral band end connection
20 TT	...Ratchet and tool tightened band clamp
20 S	...Spring closed band clamp
20 LS	...Screw locked band clamp
20 W	...Swedged to lock band ends
21	..Separate connections
22	...One piece
23 R	....Sheet metal
23 B	......Buckle band connection
23 W	......Swedged sheet metal band connection
23 EE	......End-to-end integral with band connecting means
24	...Pivoted parts
25	...Wedging parts
26	...Wire
27	.Wire
28	..Separate connections
29	...Wire
30	.Wooden bands
30.5 R	BAG FASTENERS
30.5 W	..Swedged bag tie
30.5 P	..Plastic band bag tie
30.5 S	..Resilient slot bag tie
30.5 T	..Twist-to-close bag tie
30.5 L	..Slides to lock bag end within housing
31 R	BELT FASTENERS
31 B	..Butt connected belt ends
31 C	..V, round, trapezoidal belts
31 F	..Flanged belt ends, connector hold ends
31 L	..Lapped ends of endless belts
31 H	..Hinged ends of endless belts
31 W	..Wire strands reinforce belts
31 V	..Velcro and zipper belt end connection
32	.Tighteners
33 R	.Hinged
33 A	...Ring connected belt ends
33 F	...Bent over flanged ends
33 P	...Pintle pin connected belt ends
33 V	...V and round belts
33 L	...Overlapped belt ends
33 B	...Sheet metal knuckles, common pintle
33 C	...Wire knuckles, common pintle
33 K	...Knuckle integral with belt material
33 M	...Multiple pintles interconnected V-belt type
34	.Lacing
35	.One piece
36	..Deflecting prong
37	.Screw clamp
38	.Splices
39	.Wire
40	BUTTONERS
41	CUFF HOLDERS
42	.Adjustable
43	.Clasp button
44	.Clasp clasp
45	.Clasp hook
46	.Clasp pin
47	.Pin button
48	.Pin fastener
49 R	NECKTIE FASTENERS
49 CF	..Tie engaging loop with shirt or button engaging fastener
49 KC	..Knot engaging and collar attaching
49 K	..Key ornamented and article holder
49 M	..Magnetic, adhesive, snap connected tie and shirt fasteners
49 CC	..Clip and clasp connected
49 CP	..Clip and pin
49 S	..Slider
49 A	..Ornamental initials, arrows, cloth
49 P	..Pivotal jaws, pins
49 TS	..Tie stiffener with shirt fastener
49 C	..Resilient clasp
50	.Bands
51	..End-securing pin
52	..Gripping
53	..Depressors
54	...Button engaging
55	...Pin or spur

	NECKTIE FASTENERS
56	.Button engaging
57	..Adjustable
58	..Cord loop
59	..Pivoted or sliding jaw
60	..Pin attached
61	.Collar button combined
62	..Clasp attached
63	..Pin attached
64	..Separable fastener
65	.Tie, attached hook
67 R	PAPER FASTENER
67 AR	..Adhesive
67 CF	..Corner fastened
67 P	..Paper-penetrating
67.1	.With screw threaded or notch engaging securing means
67.3	.Resiliently biased
67.5	..Including means to open or close fastener
67.7	...Pivotally mounted on pintle
67.9	..One piece
67.11	...Mounted on support means
68 R	STRAP TIGHTENERS
68 J	..Jewelry
68 SB	..Seat belt
68 AS	..Accordion straps
68 PP	..Parallel poles clamp
68 FP	..Form panels for walls
68 CD	..Cargo tie down
68 CT	..Chain tighteners
68 BT	..Split band with tightener
68 TT	..Tire chain tighteners
68 SK	..Ski, boot and shoe fasteners
68 A	..Fixed jaw with sliding or pivoted jaw
68 B	..Rack and pinion and circular tighteners
68 C	..Circular flange container clamp
68 D	..Strap stretching tools, tighteners and sealers
68 E	..Buckle type
68 F	..Integral piece
68 T	..Toggle
68 SC	..Stocking top
69 R	.Cam lever and loop
69 ST	...Strap tighteners
69 TT	...Tie chain tighteners
69 CT	...Cargo tie down
69 CF	...Cover fasteners
69 T	...Chain tighteners
69 TM	...Strap tightener machine
69 TS	...Toggle actuated sliding jaw
69 J	...Jewelry
69 AT	...Split ring with tightener
69 FP	...Concrete form panels
69 SB	...Seat belt buckles
69 WT	...Chain, cable, wire tighteners and anchors
69 EF	...Envelope fasteners
69 SK	...Ski boot and garment fasteners
70 R	..Step adjusted
70 SK	....Ski boot and garment fasteners
70 T	....Split ring tightener
70 CT	....Chain and rope tighteners
70 TT	....Tire chain tighteners
70 ST	....Strap tighteners
70 J	....Jewelry
71 R	.Strap-attached folding lever
71 T	...Toggle latch
71 ST	...Strap tightener
71 TT	...Tire anti-skid strap tightener
71 SB	...Seat belts
71 A	...Split ring fasteners
71 J	...Jewelry-watch straps
71 TD	...Tie downs (covers, articles)
71 CT	...Cable, wire, rope tightener
71 SK	...Ski boot and garment fasteners
71 SD	...Dress hem raisers
71.1	.Midline
71.2	..Winders
71.3	...One-piece
72	TROUSER GUARDS AND STRAPS
72.5	BEDCLOTHES HOLDERS
72.7	T-HEAD NON-GRIPPING, FABRIC ENGAGING TYPE
381	ZIPPER OR REQUIRED COMPONENT THEREOF
382	.Plural zippers
383	..Zipper chain
384	..Having surface sealing structure
385	.Having slider or interconnected sliders with access opening for diverse-art-member
386	.Plural independently movable sliders
387	.With distinct, stationary means for anchoring slider
388	..And for aligning surfaces or obstructing slider movement
389	.With distinct member for sealing surfaces
390	.With distinct separable-fastener
391	.Having coiled or bent continuous wire interlocking surface
392	..With stringer tape interwoven or knitted therewith
393	..With stringer tape having specific weave or knit pattern
394	..With core encircled by coils or bends
395	..With mounting portion having structural formations complementary to stitching
396	..Attached by stitching
397	...String or stringer tape having distinctive property (e.g., heat sensitive)
398	..With stringer tape having distinctive property (e.g., heat sensitive)
399	.Having interlocking surface with continuous cross section
400	..Opposed interlocking surface having dissimilar cross section
401	.Having interlocking surface formed from single member with varying cross section
402	..Opposed surface having dissimilar cross section
403	.Interlocking surface constructed from plural elements in series
404	..Having either, noninterlocking element in, or interrupted, unequal length series
405	..With element structural feature unrelated to interlocking or securing portion
406	..Dissimilar opposed elements
407	..Wire element
408	..Preattached to mounting cord
409	..Having interlocking portion with specific shape
410	...Including symmetrical formations on opposite walls for engaging mating elements
411	...Including complementary formations on opposite walls for engaging mating elements
412	....Mating elements having reversed orientation of formations
413	..Having mounting portion with specific shape or structure
414	...Including embracing jaws
415	.Slider having specific configuration, construction, adaptation, or material
416	..Including relatively movable spaced wings (i.e., restraining walls)
417	..Including converging channel and relatively movable separator island

ZIPPER OR REQUIRED COMPONENT THEREOF
.Slider having specific configuration, construction, adaptation, or material
418 ..Including position locking-means attached thereto
419 ...Protrusion on pull tab directly engaging interlocking surfaces
420 ...Having surface engaging element shifted by reorientation of pull tab
421 ....Resilient or spring biased element
422 .....Selectively shifted by either of two pull tabs
423 .....With relatively movable link
424 .....Biased by distinct spring
425 .....Having aperture cooperating with guide post
426 ..Including means preventing bunching of Structure-to-be-secured or stringer
427 ..Having specific contour or arrangement of converging channel, separator island, or wing
428 ...Spaced segments of each wall of channel supported by different wings
429 ..Including pull tab attaching means
430 ..Including means for attaching components of slider together
431 ..With ornamental slider
432 .With means for concealing surfaces
433 .Including complementary, aligning means attached to ends of interlocking surfaces
434 ..Having specific mounting connection or reinforcing structure at connection
435 .Including means attaching interlocking surfaces together
436 .Including means for obstructing movement of slider
437 SLIT CLOSING MEANS INCLUDING GUIDES ON OPPOSITE EDGES OF SLIT AND SLIDABLE BRIDGING COMPONENT
438 .With hand-actuated lever for shifting bridging component
439 .Including structure linking and allowing variations in separation between opposite-guide-contacting portions of component
440 .Having bridging components attached in series along carrying element
441 .Having separate, independently movable, bridging components
442 INCLUDING READILY DISSOCIABLE FASTENER HAVING NUMEROUS, PROTRUDING, UNITARY FILAMENTS RANDOMLY INTERLOCKING WITH, AND SIMULTANEOUSLY MOVING TOWARDS, MATING STRUCTURE (E.G., "VELCRO")
306 .Combined with diverse fastener
443 .With distinct structure for sealing securement joint
444 .With feature facilitating, enhancing, or causing attachment of filament mounting surface to support therefor
445 .Having filaments formed from continuous element interwoven or knitted into distinct, mounting surface fabric
446 .Having filaments of varied shape or size on same mounting surface
447 .With feature facilitating or causing attachment of filament to mounting surface
448 ..Thermal or adhesive
449 .Having several, repeating, interlocking formations along length of filament
450 .Having opposed structure formed from distinct filament of diverse shape to those mating therewith
451 .Having filaments constructed from coated, laminated, or composite material
452 .Having mounting surface and filaments constructed from common piece of material
287 FREIGHT CONTAINER TO FREIGHT CONTAINER FASTENER
288 DRUM OR CAN SPACER FASTENER
289 TRIM MOLDING FASTENER
290 .Having externally threaded attaching means
291 ..And laterally extending biasing appendage
292 .Having laterally extending biasing appendage
293 .Resilient metal type
294 ..Strip formed
295 ..Sheet metal formed
296 ..Wire formed
297 .Plastic type
298 PLURAL FASTENERS HAVING INTERMEDIATE FLACCID CONNECTOR
299 .Chain connector
300 .Elastic connector
301 ..Strap connector
302 .Strap connector
303 HAVING MAGNETIC FASTENER
304 HAVING ADHESIVE FASTENER
305 COMBINED DIVERSE MULTIPART FASTENERS
307 .Buckle
308 ..And buckle
309 ...Having separate material adjustment means
310 ...Having separate disconnect means
311 ....Pivotal lever type
312 ...Having disconnect structure
313 ....Resilient cooperating means
314 ...And pin
315 ...Crossed belt accommodating
316 ..And clasp
317 ..And pin
318 ..And hook
319 ...Having disconnect means
320 ...Having penetrating prong
321 ...Buckle having plural receiving slots
322 ..And button
323 ..And separable fastenings means for attached fastener
324 ...Snap fastener
325 ..Having roller means
326 .Clasp
327 ..Having pivoted members
328 ...Cam type member
329 ...Plural clasps
330 ....And toggle operator
331 ....Spring biased
332 .....Coil
333 ....And cam
334 ...Coil spring biased
335 ..Plural clasps
336 ...Resilient type clasp
337 ....And cam
338 ....Spring biased jaw
339 ....Circular work engageable
340 ....And pin attachment
341 ....And disconnect means
342 ..And button
343 ..And hook
344 ...Having intermediate connector allowing movement
345 ....And adjustment means
346 ...Having gripping configuration on clasp jaw
347 ....Penetrating type
348 ...Having cam
349 ...Having separable jaws
350 ..And penetrating prong

	COMBINED DIVERSE MULTIPART FASTENERS
	.Clasp
351	..And pin
352	...Having separate pin loss prevention means
353	....Pin coextensive, coplanar and contiguous with clasp jaw
354	...Pin coextensive, coplanar and contiguous with clasp jaw
355	...Pin forms part of clasp jaw
356	.Pin
357	..And pin
358	...And disconnect means
359	....Hook and eye type
360	...And hook
361	....Having connector allowing movement
362	...Having intermediate connector allowing movement
363	..And hook
364	...Having intermediate connector allowing movement
365	....And adjustment means
366	...Hook having locking means
367	..And button
368	..And penetrating prong
369	.Hook
370	..And hook
371	...Having biasing spring
372	...Separately connected
373	...Having securing means
374	....Sliding
375	....Snap type
376	....Pivoted
377	..Having penetrating prong
378	..And button
379	.Button
380	.Penetrating prong
89	INTERCHANGEABLE BUTTON LOOP AND PIN
90 R	BUTTONS AND FASTENERS
90 A	..Ornamental buttons
90 B	..Tufting
90 C	..Fabric embracing
90 E	..Hollow with friction grip
90 HA	..Heat and adhesive secured
90 TA	..Thread-attached apertured buttons
90.5	.Loss-preventing devices
91	.Adjustable
92	.Cloth shanks and covers
93	.Multiple attachment
94	.Deflecting prong or rivet
95	..Anvil or plate
96	..Integral
97	.Hinged leaf
98	..Axially rotating
99	..Double
100	..Sliding
100.5	.Sliding bar
101 R	.Integral or rigid stud
101 B	...Bent sheet metal (integral)
102 R	.Link
102 A	...Integral rubber button, extendable shank
102 E	...Extendably connected
102 PL	...Pivoted leaf
102 SL	...Releasably locked
102 FC	...French cuff
102 T	...Tufting
102 P	...Integral piece
103	.Pin attached
104	.Separable
105	..Screw
106	..Spring
107	...Resilient head
108	...Resilient socket
109	...Rotating head
110	...With operatfng devices
111	.Separate thread bar
112	.Spiral fastener
113 R	.Covers
113 MP	...Metal or plastic caps
114	.Pads
712	DRAWSTRING, LACED - FASTENER, OR SEPARATE ESSENTIAL COOPERATING DEVICE THEREFOR
712.1	.Includes separate device for holding drawn portion of lacing
712.2	..Device engages tie in lacing
712.3	...And fully covers tie
712.4	..Device engages element or formation on lacing
712.5	..Having relatively movable holding components or surfaces
712.6	...With pivotal connection therebetween
712.7	...With integral resilient linking structure therebetween
712.8	....Formed from wire
712.9	..Having lacing wound thereabout or wedged therein
713	.With holding means fixedly mounted on lacing
713.1	..And forming lacing tips
713.2	.Includes lacing holding structure within directing means therefor
713.3	.Having diverse shaped directing means for lacing
713.4	.Having lacing directing means in particular pattern
713.5	.Includes lacing guiding roller within directing means
713.6	.Having eyelet type directing means
713.7	..With permanently deformed mounting structure
713.8	...Mounting structure formed from different material than directing passage
713.9	.Having hook shaped directing means
714	..And movable component or surface for closing throat
714.1	..Mounted by structure allowing bodily movement thereof
714.2	..Formed from wire
714.3	..With mounting structure formed from different material
714.4	..With permanently deformed mounting structure
714.5	...Expanding stud
714.6	.Having loop or sleeve shaped directing means
714.7	..Entirely formed from flaccid material
714.8	..Mounted by structure allowing bodily movement thereof
714.9	..Formed from wire
715	..With permanently deformed mounting structure
715.1	...Loop or sleeve closed when mounted
715.2	...Expanding stud
715.3	.Having elastic segment in lacing
715.4	.Having means covering tip of lacing
715.5	..Tasseled
715.6	..With plural components
715.7	..With permanently deformed mounting structure
114.5	STRAP CABLE OR PIPE BUTTON
115 R	CORD AND ROPE HOLDERS
115 A	..Bendable, ductible
115 F	..Safety release
115 G	..Alignable aperture and spring pressed moving element
115 H	..Loop, adjustable
115 J	..Snubbers, cleats by dielectric loss
115 K	..Loop engaging
115 L	..Ball or roller
115 M	..Sliding wedge
115 N	..Helical preform
116 R	.Chain
116 A	...Bead chain fasteners

	CORD AND ROPE HOLDERS
122.3	.Sheathed strand
122.6	.Plural-strand cord or rope
127	.Friction disk
128	.Knot engaging
129 R	.One-piece
129 B	...Sheet material
129 A	...Slack adjuster
129 D	...Rubber
129 C	...Wire
129 W	...Swagged, deformable
130	..Wedge slot
131 R	..Wire
131 C	....Cord runs thru center of coil
132 R	.Pivoted part
132 AA	...Pivotal means with plate aperture
132 WL	...Jaws locked together by cam, wedge, lever, or screw
133	..Lever tension
134 R	..Cam lever
134 KA	....Laterally shifted rope
134 KB	....Cam engaging or disengaging
134 L	....Fixed and movable jaws, movable jaw pulled
134 N	....Link-connected parallel jaws
134 P	....Dual cam
135 R	.Screw clamp
135 A	...Screw clamp with snubber
135 K	...Tangential bolt
135 L	...J- shaped bolt
135 N	...Bolt perpendicular to cable axis
136 R	.Sliding part or wedge
136 K	...Rope looped about movable member
136 L	...Rope clamped between cone and socket
136 A	...Sliding ball
136 B	...Screw actuated
163 R	BUCKLES
163 FC	..Fabric covered
163 K	..Ornamental and/or object supported
164	.Harness
165	..Combined buckles and snap hooks
166	..Lock
167	...Key
168	..Clamping
169	...One-piece
170	...Pivoted part or lever
171	...Sliding part or wedge
172	..Cross bails
173	...Pivoted stud plate
174	...Rigid stud
	..Penetrating tongue
175	...Guarded
176	...One-piece
177	...Multiple
178	...Pivoted
179	....Lever actuated
180	....Stud
181	...Sliding part or wedge
182	..Strap loops and attaching devices
183	..Loop shields
184	.Garment shielded
	.Combined pressure bar and guard
185	..Hook attached
	.Penetrating prong
186	..One-piece
187	...Hook attached
188	..Pivoted
189	...Hook attached
190	..Slide
191	.Pivoted lever
192	..Hook attached
193	..Looped strap
194	.Sliding part of wedge
195	..Hook attached
196	..Looped strap
197	.Looped strap
198	.One-piece
199	..Hook attached
200	..Looped strap
705	PIERCED EARRING FASTENER
453	INDEPENDENT, HEADED, APERTURE PASS-THROUGH FASTENER
454	FASTENER WITH REVOLVING COMPONENT WRAPPING STRUCTURE-TO-BE-SECURED ABOUT FASTENER
455	CLASP, CLIP, SUPPORT-CLAMP, OR REQUIRED COMPONENT THEREOF
456	.Gripping member adapted for tool actuation or release
457	.With specific mountng means for attaching to rigid or semirigid supporting structure or structure-to-be-secured
458	..For cooperating with aperture in supporting structure or structure-to-be-secured
459	.Dissociable gripping members
460	..Channel and inserted bar
461	...Having operator or locking means
462	...Resilient channel or bar
463	.Having gripping member actuated by fluid force
464	.Having inserted and receiving interlocking members connected by bendable, nonbiasing strap
465	..Discrete flaccid strap
466	...With distinct means for preventing separation of members
467	....Slidably mounted
468	...With separate flaccid flap or pocket for protecting structure-to-be-secured
469	...With separate, cavity-blocking gate on receiving member
470	...Resilient inserted or receiving member
471	....Inserted or receiving member substantially covered or coated for protection or to promote gripping
472	....Resilient inserted member
473	.....Having engaging face formed from nonmetallic material
474	......Having head and neck type engaging face
475	.......Having internal supporting or reinforcing element
476	........Circular head or neck
477	...Having wedge shaped, inserted and receiving members
478	...With specific means for attaching to flaccid strap or supporting strap
479	....On the inserted member
480	...Having necked button sliding along length of closed, variable width loop
481	.Having flaccid gripping member
482	..Formed from elastic material
483	.Encircling gripping member including semirigid band and operator for tightening
484	.Encircling gripping member including semirigid band and means for adjusting girth
485	.With specifically shaped, nongripping, rigid structure for connecting independently operable clasps, clips, or support-clamps
486	.Gripping member face integral with or rigidly affixed to screw-driving portion
487	.Having either discrete flaccid or thin, nonbiasing, integral, connecting hinge

CLASP, CLIP, SUPPORT-CLAMP, OR REQUIRED COMPONENT THEREOF

488 .Having equally spaced or continual gripping faces revolving about central axis
489 .Including pivoted gripping member
490 ..Pivoted member also slides
491 ...Tapered face
492 ..Pivoting gripping member either supports or coacts with sliding engaging face
493 ..Having three or more pivotally connected gripping members
494 ..Having toggle operator for moving
495 ..Having rigid linking arm pivotally connected to each gripping member
496 ...With extended lever portion
497 ....Having lever end modified for attachment to support
498 ..Pivoted gripping member applies camming force
499 ..Spring or resiliently biased about pivot
500 ...Distinct spring
501 ....Attached solely by spring
502 ....With operator for moving pivoted member
503 .....Camming or wedging element
504 ......Pivoted or rotated element
505 ....With position locking-means for gripping members
506 .....Including pivoted arm
507 ....Having specific surface material or irregularity on or along engaging face
508 ....Having specific handle structure
509 ....Coil Spring
510 .....Having coil portion coaxial or parallel with pivotal axis
511 ....Flat or leaf spring
512 ..Closed by gravity or weight of structure-to-be-secured
513 ..With operator for moving pivoted member
514 ...Threaded cylindrical rod and mating cavity
515 ...Camming or wedging element
516 ....Pivoted or rotated element
517 ..With position locking-means for gripping members
518 ...Integral locking-means
519 ..Having inserted and receiving interlocking engaging faces
520 ...Resilient gripping member
521 ..Having specific surface material or irregularity on or along engaging face
522 .Including track or way guided and retained gripping member
523 ..Biased by distinct spring
524 ..With operator for moving guided member
525 ...Threaded cylindrical rod and mating cavity
526 ..Track or way oblique to path of gripping member
527 ..With position locking-means for gripping members
528 ...Integral locking-means
529 ..With specific mounting means for attaching to flaccid supporting structure of structure-to-be-secured
530 .Having gripping member formed from, biased by, or mounted on, resilient member
531 ..Integrally combined, independently operable, diverse clasps, clips, or support-clamps
532 ..With specific means for mounting to flaccid supporting structure or structure-to-be-secured
533 ...Mounting means made entirely from integral wire portion of resilient gripping member
534 ....Wire coiled about flaccid support structure
535 ..With operator for moving biased engaging face
536 ...Camming or wedging element
537 ....Encircling sleeve type element
538 ....Pivoted or rotated element
539 .....Element pivoted or rotates in plane parallel to plane bisecting opposed engaging faces
540 .....Elongated element with pivot between cam and handle portions
541 ......For moving engaging face of U-shaped gripping member
542 ..With position locking-means for engaging faces
543 ...Integral locking-means
544 ...Pivoted lock member
545 ..Opposed engaging faces on gripping member formed from single piece of resilient material
546 ...Piece totally forms clasp, clip, or support-clamp and has shaped, wirelike or bandlike configuration with uniform cross section throughout its length
547 ....Opposed faces located in and bias towards common plane in nonuse position
548 ....Resilient gripping member having tightly twisted portion
549 ....Resilient gripping member having coiled portion
550 .....Convolutions of coil form faces
551 ....Relatively movable segments of resilient gripping member contact and cross in nonuse position
552 .....Segments form opposed engaging faces
553 ......Having specific handle structure
554 .....Having specific handle structure
555 ....Terminal end of resilient member having engagement or disengagement enhancing structural modifications
556 ....Having specific surface irregularity on or along engaging face
557 ...Having specific handle structure
558 ....Movably attached to gripping member
559 ...Interlocking faces
560 ...With reinforcing member
561 ...Having specific surface irregularity on or along engaging face
562 ....Corrugated or toothed face
563 ...Clasp, clip, or support-clamp cut or shaped from a single sheet of resilient, uniformly thick, planar material
564 ..Having specific surface material or irregularity on or along engaging face
565 ..Having specific handle structure
566 ..Including resilient biasing wire
567 ...Coiled wire
568 .Having gripping member shifted by operator
569 ..Threaded cylindrical rod and mating cavity
570 .Formed from single rigid piece of material
571 ..Having specific surface irregularity on or along engaging face

572	SEPARABLE-FASTENER OR REQUIRED COMPONENT THEREOF
573.1	.With third, detached member completing interlock
573.2	..And linking cavities in adjacent parallel panels
573.3	..Third member includes independently engaged hooks for linking spaced cavities
573.4	...And movably connected, noninserted gate for closing access throat of hook
573.5	..Third member includes relatively movable, separate components
573.6	...For parachute harness
573.7	..Third member consist of unitary elongated element
575	.Each mating member having similarly shaped, sized, and operated interlocking face
576	..Including elongated face having identical, parallel cross sections throughout its length
577	..Including elongated face having varying, parallel cross sections throughout its length
578	..Including complementary shaped and alternately useable interlocking faces
579.1	..Single piece hook-shaped member (e.g., mating garment hooks)
580	.Including member having distinct formations and mating member selectively interlocking therewith
581	..Formations positioned along wall forming mating-member-guiding cavity
582	...Formations member having movably attached or biased interlocking structure
583	..Formations member having movably attached or biased interlocking structure
584	..Selectively interlocking member having movably attached or biased interlocking component
585	...And cavity for guiding movement of formations
586	..Having mounting means allowing repositioning of member for facilitating interlock
587	.Including member having elongated, resilient, interlocking face with identical, parallel cross sections throughout its length
588	.Including receiving member having cavity and mating member having insertable projection guided to interlock thereby
589	..Having divergent interlock means distinct from cavity or projection of its member
590	..Projection or cavity rotates about axis of cavity access opening to interlock
591	...Having projection rotatably connected to its member
592	....And operator therefor
593	....And position locking-means therefor
594	.....Including notch or hump on projection axially biased by spring
595	.....Including radially biased element egnaging against relatively rotating surface at connection
596	....And spring for axially biasing projection
597	...Receiving member includes either movable connection between interlocking components or variable configuration cavity
598.1	..Projection passes through cavity then moves toward noninserted portion of its member to complete interlock (e.g., snap hook)
598.2	...Entire projection member forms loop or ring when interlocked
598.3	....Includes slidable gate closing entrance throat
598.4	...Hook type projection member
598.5	....Plural hooks entering opposite sides of same cavity
598.6	.....Hooks formed solely from wire
598.7	....Noninserted portion of projection member includes movably connected gate for closing access throat
598.8	.....Threaded gate
598.9	.....Revolvably mounted disc shaped gate
599.1	.....Pivotally connected gate
599.2	......Gate swings transversely to plane of hook
599.3	......Gate also slides relative to pivot
599.4	......Having means biasing gate about pivot
599.5	.......And position locking-means for gate
599.6	.......Includes distinct biasing spring
599.7	........Coil type spring
599.8	.........Coiled about pivotal axis of gate
599.9	......Having position locking-means for gate
600.1	.......Locking-means pivotally connected
600.2	.......Locking-means slidably mounted
600.3	......Gate closes when structure-to-be-secured is tensioned
600.4	.....Track or way guided gate
600.5	......Having means biasing gate
600.6	.......Guide of gate encircles shank
600.7	.......Cavity in shank forms track or way
600.8	........With position locking-means for gate
600.9	.....Resilient, self-biased gate
601.1	......With position locking-means for gate
601.2	......Gate and hook formed from plastic
601.3	......Gate and hook formed solely from wire
601.4	......Gate and hook formed from single piece of sheet metal
601.5	....Projection pivotally attached to shank or mounting structure
601.6	....Projection slidably mounted to shank or mounting structure
601.7	....Projection self-biased towards shank or mounting structure
601.8	.....And formed solely from wire
601.9	......Cooperating with relatively stationary wire gate
602	..Interlocking portion actuated or released responsive to preselected condition (e.g., heat, pressure)
603	..Having electric or fluid powered, actuation or release, of interlock
604	..Projection having movable connection between components thereof or variable configuration
605	...With additional, similar projection for engaging different cavity
606	...And operator therefor
607	....Including camming or wedging element on projection member
608	.....Pivotally attached element

SEPARABLE-FASTENER OR REQUIRED COMPONENT THEREOF

.Including receiving member having cavity and mating member having insertable projection guided to interlock thereby

..Projection having movable connection between components thereof or variable configuration

609 ...Including pivotal connection between projection components

610 ....Component slides relative to connection

611 ....And spring or resilient extension biasing about pivot

612 ...Including slidably guided connection between nonself-biasing projection components

613 ....And distinct spring biasing component

614 ...Including resiliently biased projection component or surface segment

615 ....Requiring manual force applied against bias to interlock or disengage

616 .....Having connected leading edge and separated trailing arms

617 ....Cooperating with cavity having side walls and axially biased component capping end

618 ....Forming total external surface of projection

619 .....And encircling hollow central area

620 ......Having separate mounting means inserted into area

621 ....Plastic deformation of means or surface required for mounting

622 ......Having separate mounting means encompassing cross section of projection

623 ......Having dome-shaped head and expansion slit along side

624 ....And connected surface at tip of head

625 .....Having inserted end formed by oppositely biased surface segments

626 .....Constructed from wire

627 ....Having both resiliently biased and rigid components forming external surface of projection

628 ..Projection member including noninserted spring for engaging and pushing against receiving member

629 ..Receiving member includes either movable connection between interlocking components or variable configuration cavity

630 ...With additional cavity for engaging different projection

631 ....Having common means actuating or releasing interlocking components or surfaces

632 .....And interlocking with independently associated or dissociated projection members

633 ...And operator therefor

634 ....For plural, oppositely shifting, similar interlocking components or segments

635 .....Operator includes camming or wedging element

636 ....Including pivotally connected element on receiving member

637 .....For shifting pivotally connected interlocking component

638 ......Element and component pivot about same axis

639 .....For shifting slidably connected and guided, nonself-biasing interlocking component

640 ....Including slidably connected and guided element on receiving member

641 .....For shifting pivotally connected interlocking component

642 .....For shifting slidably connected and guided, nonself-biasing, interlocking component

643 ...Having pivotally connected interlocking component

644 ....Blocking removal of formation on projection from complementary formation on side wall of cavity

645 ....And position locking-means therefor

646 ....And relatively movable handle therefor

647 ....Requiring manual force thereon to interlock or disengage

648 .....Plural, oppositely shifting, similar interlocking components

649 .....Having aperture therein alignable with parallel access opening

650 .....Having interlocking portion thereof housed continuously within cavity

651 ...Having cavity with side walls and axially biased component capping end

652 ...Having slidably connected, nonself-biasing interlocking component

653 ....Blocking removal of formation on projection from complementary formation on side wall of cavity

654 ....And position locking-means therefor

655 ....And relatively movable handle therefor

656 ....Requiring manual force thereon to interlock or disengage

657 .....Plural, oppositely shifting, similar interlocking components

658 .....Having closed aperture therethrough alignable with parallel access opening

659 ...Having flaccid component defining access opening of cavity

660 ....Component formed solely by flaccid cord

661 ....With nonflaccid component

662 ...Having resiliently biased interlock component or segment

663 ....Cavity or projection rotates about axis of cavity to dissociate

664 ....Requiring manual force applied against bias to interlock or disengage

665 .....And partially blocking separate, nonresilient access opening of cavity

666 ....And closed elongated access opening for guiding transverse projection travel after insertion

667 .....Nonresilient walls define opening

668 .....Formed from wire

669 ....And access opening with gap in perimeter for allowing movement of noninserted projection support therepast

670 .....Cavity constructed solely from wire

671 ....Partially blocking separate, nonresilient, access opening of cavity

672 .....And bodily shifted into or out of interlock location by manual force thereon

	SEPARABLE-FASTENER OR REQUIRED COMPONENT THEREOF
	.Including receiving member having cavity and mating member having insertable projection guided to interlock thereby
	..Receiving member includes either movable connection between interlocking components or variable configuration cavity
	...Having resiliently biased interlock component or segment
	....Partially blocking separate, nonresilient, access opening of cavity
673	.....Formed from wire
674	......Having curved or bent engaging section conforming to contour of projection
675	.......Similar, distinct sections
676	......Having distinct sections engaging projection at spaced points
677	....Including separate, nonprojection-engaging spring for biasing
678	....Biased component or segment entirely formed from wire
679	....Having portion of cavity deformed during mounting
680	.....And cooperating with separate mounting component
681	....Having axially extending expansion slit along side of cavity
682	..Means for mounting projection or cavity portion
683	...Allows bodily movement facilitating interlock
684	....About pivotal connection
685	....Includes resilient component separate from portion
686	...Allows relocation of portion
687	...Having component of means permanently deformed during mounting operation
688	....And formed from or fixedly attached to projection or cavity portion
689	.....Cooperates with detached component of means
690	.....Having shape facilitating impaling of mounting surface
691	....And inserted into or through cavity or projection
692	....And encircling cavity or projection
693	...Consisting of thermally fusible substance
694	...Having threaded formation
695	...Having specific structure for cooperating with stitching
696	...Having shape facilitating impaling of mounting surface
697.1	..Plural distinct cavities or projections
697.2	...Hook type
698.1	..Hook-shaped projection member passing through cavity
698.2	...Formed from single piece of sheet metal
698.3	...Formed solely from wire
700	..Cavity having specific shape
701	...Including closed elongated access opening for guiding transverse projection travel after insertion
702	...Having access opening with gapped perimeter for allowing movement of noninserted projection support therepast
706	PIN OR SEPARATE ESSENTIAL COOPERATING DEVICE THEREFOR
706.1	.With separately operable, manually releasable, nonpenetrating means for mounting (e.g., drapery hook)
706.2	.Having distinct guiding, holding, or protecting means for penetrated portion
706.3	..Means detachable from or flaccidly connected to pin (e.g., Hatpin type)
706.4	...For pin having plural penetrating portions
706.5	...Including relatively movable guiding, holding, or protecting components or surfaces
706.6	....Having operator for moving holding component or surface
706.7	.....Moves pivoting holding component
706.8	.....Moves slidably guided, nonself-biasing, holding component
706.9	....Having piercable (e.g., cork) or naturally resilient (e.g., rubber) surfaces
707	....With pivotal connection therebetween
707.1	....With slidable connection between nonself-biasing components
707.2	....Having resiliently biased component or surface
707.3	.....Coiled about longitudinal axis of held portion
707.4	.....And aperture therein alignable with another spaced aperture of means
707.5	.....And nonresilient structure for guiding portion thereto
707.6	...Including structure for cooperating with formation (e.g., cavity) formed on penetrating portion
707.7	..For pin having plural penetrating portions
707.8	...Each independently movable towards and into cooperation with means
707.9	..Including relatively movable guiding, holding, or protecting components of surfaces
708	...With connection allowing component to revolve about axis of held penetrating portion
708.1	...With pivotal connection therebetween
708.2	....Having position locking means therefor
708.3	....Spring or resiliently biased
708.4	...With slidable connection between nonself-biasing components
708.5	....Component slides parallel to axis of held penetrating portion
708.6	...Means engages formation formed on penetrating portion
708.7	...Having nonresilient and resilient components
708.8	...Means formed from single resilient wire
708.9	...Means formed from resilient sheet metal
709	..With independent, spaced, intermediate connections or formations (e.g., coils), about which portion or means moves
709.1	...Includes slidable connection
709.2	..With pivotal connection between penetrating portion and means
709.3	...Connection also permits sliding movement
709.4	...Resiliently biased about connection
709.5	..With slidable connection intermediate penetrating portion and means
709.6	..Having resilient bridging structure between portion and means

	PIN OR SEPARATE ESSENTIAL COOPERATING DEVICE THEREFOR
	.Having distinct guiding, holding, or protecting means for penetrated portion
	..Having resilient bridging structure between portion and means
709.7	...Means includes structure for cooperating with formation (e.g., cavity) formed on portion
709.8	...And penetrating portion formed from wire
709.9	....Bridging structure includes elongated nonwire element
710	....Wire also forms coiled bridging structure about which portion moves
710.1	.....Including distinct device for cooperating with coil
710.2	.....Having means also formed from same wire
710.3	.With cavity for guiding structure-to-be-secured towards penetrating portion (e.g., stocking support)
710.4	.Having penetrating portion retractable or of changeable length
710.5	.Having interconnected distinct penetrating portions
710.6	..Connection allows movement therebetween
710.7	...Slidable connection
710.8	...Resilient connection
710.9	..Formed from common wire
711	...And pointing in same direction
711.1	.Penetrating portion includes relatively movable structure for resisting extraction
711.2	.Having specific wire penetrating portion
711.3	..Wire curved or bent
711.4	.Having distinct head structure
711.5	..Movably connected to penetrating portion
265 R	STRAP-END-ATTACHING DEVICES
265 A	..Bendable sheet material
265 B	..Watch pintle connected
265 C	..Webbing to tube (lawn chair)
265 BC	..Buckle connected
265 EC	..End clasp
265 H	..Hook
265 AL	..Ring-loop
265 CD	..Cargo tiedown
265 WS	..Watch strap
265 EE	..Enlarged end epoxy
267	PIVOTED EDGE STAYS
703.1	FASTENER DESTRUCTIVELY SECURED BY RESHAPING DISTORTION FORCE (E.G., DUCTILE FASTENER)
703.2	.Distorted structure having shape facilitating impaling
703.3	..And distinct fastener structure cooperating with impaled structure
703.4	...Detached cooperating structure
703.5	..Including plural impaling elements
703.6	...Elements form single aperature (e.g., split shank type)
704.1	READILY INTERLOCKING, TWO-PART FASTENER REQUIRING EITHER DESTRUCTIVE OR TOOL DISENGAGEMENT
704.2	.Including additional fastener structure linking parts
716	HANGER OR PORTABLE ARTICLE SUPPORT FOR MANUAL ATTACHMENT THEREOF TO OVERHEAD SUPPORT (E.G., DRAPERY HOOK)

CROSS-REFERENCE ART COLLECTIONS

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900	SHIRT COLLAR HOLDERS
901	PENETRATING-TYPE PAPER FASTENER
902	TUFTING BUTTON FASTENER
903	ARMPIT SHIELD FASTENER
904	GLOVE FASTENER
905	WATCH CHAIN FASTENER (E.G., SWIVEL HOOK)
906	FASTENER FOR ATTACHING BAND TO WATCH OR SIMILAR ARTICLE (E.G., NAME PLATE)
907	PLASTIC HOOK
908	FISHLINE SUPPORTED ATTACHMENT HOOK

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DIGESTS

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DIG 8	Paper clips
DIG 9	.Sheet material
DIG 10	.Wire
DIG 11	Adhesive
DIG 13	Weighted clip or clamp
DIG 16	Multiflex strap
DIG 17	Multiflex axial
DIG 22	Jaw structures, teeth
DIG 26	Fluid pressure
DIG 28	Co-planar flat clip
DIG 29	Laundry device

CLASS 26 TEXTILES, CLOTH FINISNING

DECEMBER 1990

1	MISCELLANEOUS
2 R	PILE FABRICS
2 E	..Electrifiers
3	SINGEING
4	.Articles
5	..On attached form
6	.Heated contact element
7	CUTTING
8 R	.Pile loops
8 C	...Rotary cutters
9	..With simultaneous feeding
10 R	...With stopping
10 C	.....Rotary cutters
10.4	.Weft end or selvage float loop removal
11	.Float threads
11.4	..Venetian blind tapes
12	..With feeding
13	.Double pile fabric
14	..Loom type
15 R	.Shearing
15 L	...With lubrication
15 FB	...With flexible bed
16	..Ornamental
17	..With seam detector
18	..Automatic extension rests
18.5	SHRINKING
18.6	.Thread compacting
19	.Fulling
20	..Continuous web machines
21	...Pleating type
22	..Beater type
23	...Gravity stroke
24	..Stopping
25	BEATING
26	.Beetling
27	RUBBING
28	.Abrasive
29 R	NAPPING
29 P	..With pneumatic lint removal
30	.Ornamental
31	.Napping surface feature
32	..Machines
33	.Planetary
34	..Including drive feature
35	...Drives
36	.Reciprocating napping element
37	.Single fixed-position napping roll
51	STRETCHING OR SPREADING AND WORKING
51.3	.Weft angle adjusting
51.4	..Automatically controlled
51.5	...With photoelectric scanning or detecting means
52	.Traveling clamp or hook type
53	..Reciprocating frames
71	EXPANDING DEVICE FOR TEXTILE WEBS
72	.Biaxial expansion
73	..By successively accelerating spreader members of traveling set
74	.Web-condition-responsive operation control
75	..Responsive to edge location to control spreader
76	...To adjust tenter frame
77	...To adjust angle of selvage-engaging roller spreader
78	...Roller spreader pair nip control
79	...To activate traveling spreader member responsive to removal from feeler
80	.Tubular-fabric-enclosed spreader
81	..Including heater or dryer
82	..With slitter, for opening up
83	..With rotary feeder or bearing at spreader ends
84	...Driven
85	....Multi-dimensional spreader (e.g., tube or spider)
86	.Overfeed arrangement; or rotary pinner for traveling pin spreader set
87	.Spreader
88	..Acting on fabric edge only
89	...Edge-retaining traveler set (i.e., tenter)
90	....Edge-entraining wheel
91	....Laterally adjustable tenter frame
92	....With heater or dryer
93	....Set is series of traveling clamps
94	.....Including clamp manipulator
95	.....And mating pin series set
96	....Set is traveling pin series
97	...Roller spreader
98	...Edge straightener; e.g., uncurler
99	..Roller spreader
100	...Axially slidable sections
101	...Bowed
102	....Plural member roller
103	.....Multi-spindle
104	......Covered
105	...Bi-helical
106	.Including heater or dryer
69 R	ORNAMENTAL
69 A	..By shrinking
69 B	..By fiber removal
69 C	..By scraping
70	INSPECTING
	*******************************
	DIGEST
	*******************************
DIG 1	Edge and/or uncurling; stiffening

CLASS 27 UNDERTAKING

1	MISCELLANEOUS
2	COFFINS
3	.Composite
4	.Foldable sections
5	.Metal and wood
6	.Metallic
7	.Plastic material
8	.Glass
9	.Canopy
10	.Corner structures
11	.Corpse preserving
12	.Corpse-raising devices
13	.Headrests
14	.Lids
15	..Sliding panel
16	..Swinging
17	..Joints
18	..Supports
19	.Linings and coverings
20	.Shields
21.1	BODY PREPARATION
22.1	.Embalming process or composition
22.2	..Using specific embalming composition
23.1	.Embalming chamber
24.1	.Injector and ejector
24.2	..Drainage tube
25.1	.Chin support
26	CASKET GRAVE RESTS
27	CASKET CARRIERS
28	CORPSE CARRIERS
29	GRAVE LININGS
30	GRAVE COVERINGS
31	LIFE SIGNALS
32	LOWERING DEVICES
33	.Hand straps
34	..Releasers
35	PORTABLE COFFIN CASINGS
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
	DIGEST
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
DIG 1	Coffin lid fasteners

100 TEXTILE PRODUCT FABRICATION OR TREATMENT
101 .Cross laying by rotatable or revolving flyer
102 .Cross laying by divergent thread conveying members
103 .Fiber entangling and interlocking
104 ..By fluid jet needling or perforating
105 ...Through backing and support members
106 ..To form perforations
107 ..Needling
108 ...To chain entangle
109 ...To form decorative article or fabric
110 ...To form endless or tubular article or fabic
111 ...Distinct needling stations
112 ...With treatment
113 ...With relative movement of needles
114 ...With compound motion of needles or supply
115 ...Needle or needle board feature
116 ..Compressive manipulation
117 ...To unite discrete articles or fabrics
118 ...Tampon shaping
119 ....With ejecting
120 ....With string attaching
121 ...Compacted fiber article encasing
122 ...With treatment
123 ...Of nonplanar article or fabric
124 ....While on form
125 ....Coil or circular article manipulation
126 .....By roller pocket
127 ......With progressive feed
128 ......Discontinuous roller surface
129 ....With curved or tapered contour
130 .....By driven and opposed surfaces
131 ......With compound movement of driven surface
132 ......Reciprocating or oscillating opposed surfaces
133 .....Internally of container
134 ...By multiroller manipulation
135 ....With plural multiroller stations
136 ....Having plural superimposed beds
137 ....With compound roller motion
138 ...By cylinder and opposed conforming bed
139 ...By reciprocating member, e.g., platen
140 .Of thread interlaced article or fabric
141 ..Splicing or repair
142 ..Endless or tubular fabric
143 ..Article
144 ...Chenille
145 ...Fringe
146 ....By fraying or raveling
147 ...Tuft, tassel or pompon
148 ...Slit interlaced
149 ...By utilizing thread frame
150 ....Rosette or lace
151 ....Woven
152 .....Warp and weft retention
153 ...Garment
154 ....Hosiery
155 ..Elastic or crepe fabric
156 ...By differential shrinkage
157 ...Bias or diagonal thread orientation
158 ..Multi-ply fabric
159 ..Pile fabric
160 ...Discontinuous or patterned surface
161 ...Separable fastener type
162 ...Napped or teased
163 ..Ornamental or surface textured fabric
164 ...By sewing
165 ..Treating
166 ...By pretreatment of component
167 ...By fluid contact
168 ....To remove transitory component
169 ....Coating or dyeing
170 ...By cutting or transitory thread removal
171 ...By article or fabric disassembly
172 R WARP PREPARING OR HANDLING
172 A .With drawing or stretching
173 .Clearing
174 ..Singeing
175 .Chain formation or manipulation
176 ..Wrapping or unwrapping
177 ..Linking
178 .With fluid treatment, e.g., sizing
179 ..With drying
180 ...By noncontacting heating means
181 ...With preseparation
182 ..By immersion
183 ...With squeezing rollers
184 .Pattern setting
185 .With means responsive to sensed condition
186 ..Stopping
187 ...Electrical
188 ...By arrestable oscillator or vibrator
189 ....Pivoted detector
190 .Reeling or beaming
191 ..Section building
192 ..Narrow warps
193 ..Supply replenishing
194 ..Tensioning means
195 ..Traversing
196 ..Having means contacting beamed warp sheet
197 ...Warp engaging drive means
198 ..Leasing
199 ...By reed or comb
200 ..Having drive means
201 .Machine replenishing
202 ..Warp selecting and separating
203 R ..Drawing
203 A ...Hand implement
204 ...Mechanical reeding
205 ...Heddle or detector manipulation
206 ....By indexing blade-type thread guide
207 .....By distortion of blade-type thread guide
208 ..Warp end or machine element handling means
209 ..Uniting
210 ...Twisting
211 ...Tying
212 .Thread guide, e.g., comb
213 ..Expansible
214 PILE TUFTING, PATTERN SETTING
215 .With loom replenishing
216 PILE TUFTING, LOOM REPLENISHING
217 THREAD FINISHING
218 .Fabrication-defabrication
219 .Surface modification of running length
220 ..Diverse finishing operations
221 ...Including stuffer box texturing
222 ..Clearing
223 ...Combined clearing operations
224 ....Gap or slot type
225 ...With stopping
226 ...Clamping, severing or shearing
227 ....By electronic or pneumatic detection of knot or slub
228 ....By feeler engagement with knot or slub
229 ....By knot or slub biased wedging member
230 .....Arcuately contoured wedge
231 ....By knot or slub deflecting slot
232 ....By opposed, gap defining surfaces, e.g., stripping guide
233 .....Selectively usable gaps
234 .....Including toothed or serrated surface
235 .....Adjustable slot forming surface

THREAD FINISHING
.Surface modification of running length
..Clearing
...Clamping, severing or shearing
....By opposed, gap defining surfaces, e.g., stripping guide
.....Adjustable slot forming surface
236 ......By eccentric mount
237 ......By pin and slot mount
238 ......By internally threaded surface
239 ...By singeing
240 ..Stretching
241 ...Control means responsive to sensed condition
242 ....With stopping
243 ...Variable denier
244 ...Progressively lengthening lateral path
245 ...Between spaced, differentially driven surfaces
246 ....With intermediate treating
247 ..Texturing, e.g., crimping
248 ...Control means responsive to sensed condition
249 ....Temperature
250 ....Plug or wad control
251 .....By alternation of drive
252 ...Discontinuous or irregular
253 ....By shifting thread or texturing device to or from contact
254 ...Jet feed to impact surface
255 ....Plug impact surface
256 .....Traveling plug conveying means
257 ....Traveling impact surface
258 ...Diverse texturing operations
259 ...Asymmetric
260 ....By knife edge
261 .....With treating
262 ...Axial compression
263 ....Stuffer box
264 .....Internal chamber retarder
265 .....With treating
266 ......Post treatment
267 ......By direct fluid application to chamber plug
268 .....Thread feeding feature
269 ......Nip roll mount or construction, e.g., wear plate
270 ....Including traversing
271 ...Fluid jet
272 ....With threading
273 ....Flow restrictor type, e.g., venturi, etc.
274 ....Having orthogonally arranged flow paths
275 .....Opposed resonance chamber
276 .....Plural opposed fluid passageways
277 ...Peening
278 ...Shaping member
279 ....Opposed intermeshing traveling members
280 .....Relatively movable sinkers
281 ...Latent bulk or crimp development
282 ..Tow opening or spreading
283 ...By fluid
284 .Bobbin, cheese or cop
285 ..With thermal treating
286 ...Including bulking, crimping or shrinking
287 .Hank or skein
288 ..With positive feed
289 PACKAGING
290 .Wound package
291 ..Hank or skein
292 BOBBIN STRIPPING
293 .By unwinding
294 ..Fluid assist or removal
295 .By cutting
296 .By stapilizing
297 .By axial removal of thread residue, e.g., slipping off
298 ..Traveling stripping jaws
299 MISCELLANEOUS

CLASS 29 METAL WORKING

1.1	ARMS MAKING
1.11	.Ordnance
1.2	PROJECTILE MAKING
1.21	.Hollow
1.22	.Bullets or shot
1.23	..Jacketed or composite
1.3	CARTRIDGE CASE MAKING
1.31	.Heading
1.32	.Trimming
2	BATTERY-GRID MAKING
2.1	BIAS CUTTING OF TUBULAR STOCK
2.11	.Including orbital cutter means
2.12	..Within stock support
2.13	..With orbiting strip accumulator
2.14	.Including means to inflate stock
2.15	.With means to feed stock along support or mandrel
2.16	..Single means produces compound motion
2.17	...Endless belt
2.18	..Axially
2.19	..Rotatably
2.2	.With means to rotate stock supply
2.21	..Axis of rotation parallel to support or mandrel
2.22	.With means for arcuate shift of mandrel
2.23	.Including means to handle strip or web
2.24	..With common adjustment for cutter
2.25	.Processes
3	BUCKLE MAKING
4	BUTTON-FASTENER MAKING
4.51	SHREDDING METAL OR METAL WOOL ARTICLE MAKING
4.52	.Metal wool making
4.53	..Shaving or longitudinal cutting
4.54	...Soap-pad making
4.55	.Metal wool bundling
4.56	..Soap-pad making
4.6	CORD HEDDLE MAKING
5	COTTER-PIN MAKING
6.01	CRANKSHAFT MAKING APPARATUS
6.1	EXPANDED METAL MAKING
6.2	.Reciprocating perforator
7	EYEBOLT AND HOOK MAKING
7.1	FENCE BARB MAKING
7.2	.Reciprocating cutter and dies
7.3	.Rotary cutters and dies
8	FINGER-RING FORMING AND SIZING
9	FISHHOOK MAKING
10	GEM AND JEWEL SETTING
11	HINGE MAKING AND ASSEMBLING
12	LACING-STUD MAKING
13	PAPER-FASTENER MAKING
14	PLOW AND CULTIVATOR IRONS, MAKING
15	PUDDLERS' BALLS, WORKING
16	RAILWAY-CHAIR MAKING
17.1	FOIL OR OTHER THIN SHEET-METAL MAKING OR TREATING
17.2	.Process
17.3	..Composite or clad product making
17.4	..With pack formation or pack treatment
17.5	...Using transitory solid cover material
17.6	...Including bond prevention treatment
17.7	...Opening or separating pack
17.8	..By shaving or longitudinal cutting
17.9	..Using transitory material
18.1	.Apparatus for opening or separating pack
20	SPECTACLE-FRAME MAKING
20.1	SPIRAL CUTTING OF FLAT STOCK
21	STEREOTYPE-PLATE FINISHING
21.1	CLENCH-TONGUE FORMING (E.G., TIEBAND TONGUE)
22	TIRE UPSETTING, CUTTING, PUNCHING, ETC.
23.1	TOOTHED-CYLINDER MAKING APPARATUS
23.51	IMPELLER MAKING APPARATUS
24	TYPE FINISHING AND GROOVING
24.5	VENETIAN BLIND ASSEMBLY
25	UMBRELLA-FRAME MAKING
25.01	BARRIER LAYER OR SEMICONDUCTOR DEVICE MAKING PROCESS AND APPARATUS
25.02	.BARRIER LAYER DEVICE MAKING
25.03	..ELECTROLYTIC DEVICE MAKING; E.G., CAPACITOR
25.35	PIEZOELECTRIC DEVICE MAKING
25.41	ELECTRIC CONDENSER MAKING
25.42	.Solid dielectric type
76.1	FILING
76.2	.Of key article
76.3	.Continuous band type
76.4	.Reciprocating type
77	.File-blank strippers
81.01	SCALE REMOVER OR PREVENTOR
81.02	.For hollow workpiece
81.021	..Interior surface
81.03	.Rolling deformation or deflection
81.04	..For wire or rod
81.05	.With rotary head
81.06	.Fluid impingement
81.07	..With heater
81.08	..Liquid jet
81.09	..Airblast
81.1	.Chainer
81.11	.Scraper or scalper
81.12	.Brush type
81.13	.Mechanically powered operator
81.14	..Tack or needle type
81.15	..Hammer
81.16	..Blade or chisel
81.17	.Hand tool
89.5	BURNING-IN, WEARING-IN, AND OIL BURNISHING
90.01	BURNISHING
90.1	.Of water laid fibrous article (e.g., paper)
90.2	..Heated burnishing member
90.3	...Burnishing tool reciprocates across work surface
90.5	.Continuous feed
90.6	.Of gear article
90.7	.By shot peening or blasting
91	UPHOLSTERY MAKING
91.1	.Process
91.2	.Tufting
91.3	..Plus means to clench fastener
91.4	..Plus means to insert guide pin or fastener
91.5	.Cover stretching
91.6	.Edge-roll forming
91.7	.Form and/or holder
91.8	..With follower
400.1	PROCESS OF MECHANICAL MANUFACTURE
592.1	.Electrical device making
593	..Including measuring or testing of device or component part
594	..Acoustic transducer making
595	..Indicating transducer making
596	..Dynamoelectric machine making
597	...Commutator or slip ring assembly
598	...Rotor
599	..Superconductor making
600	..Antenna or wave energy "plumbing" making
601	...With other electrical component
602.1	..Electromagnet, transformer or inductor
603	...Magnetic recording reproducing transducer (e.g., tape head, etc.)
604	...Data storage inductor or core
605	...By winding or coiling
606	...By assembling coil and core
607	...Including permanent magnet or core
608	....From comminuted material
609	....Laminated
609.1	...Acoustic transducer
610.1	..Resistor making
611	...Heater type
612	...Thermally variable

	PROCESS OF MECHANICAL MANUFACTURE
	.Electrical device making
	..Resistor making
613	...With envelope or housing
614	....Filling with powdered insulation
615	.....With direct compression of the powdered insulation
616	....Powdering the insulation
617	.....By oxidation
618	....With winding
619	....Applying terminal
620	...Coating resistive material on a base
621	...Applying terminal
621.1	...Strain gage making
622	..Switch making
623	..Fuse making
623.1	..Electric battery cell
623.2	...Including sealing
623.3	...Including laminating of indefinite length material
623.4	...Including adhesively bonding
623.5	...Including coating or impregnating
825	..Conductor or circuit manufacturing
826	...Brush
827	...Beam lead frame or beam lead device
828	...Co-axial cable
829	...On flat or curved insulated base, e.g., printed circuit, etc.
830	....Assembling bases
831	....Assembling formed circuit to base
832	....Assembling to base an electrical component, e.g., capacitor, etc.
833	.....By utilizing optical sighting device
834	.....With component orienting
835	......And shaping e.g., cutting or bending, etc.
836	......Different components
837	.....By inserting component lead or terminal into base aperture
838	......With deforming of lead or terminal
839	.......Including metal fusion
840	.....By metal fusion
841	.....With encapsulating, e.g., potting, etc.
842	....Assembling terminal to base
843	.....By metal fusion bonding
844	.....By deforming or shaping
845	......With shaping or forcing terminal into base aperture
846	....Manufacturing circuit on or in base
847	.....With selective destruction of conductive paths
848	.....With molding of insulated base
849	......Simultaneous circuit manufacturing
850	.....By using wire as conductive path
851	.....With sintering of base
852	.....By forming conductive walled aperture in base
853	......With deforming of conductive path
854	...Assembling electrical component directly to terminal or elongated conductor
855	....With encapsulating
856	.....By molding of insulating material
857	...Assembling terminal to elongated conductor
858	....With molding of electrically insulating material
859	.....By shrinking of cover
860	....By metal fusion bonding
861	....By deforming
862	.....Of ferrule about conductor and terminal
863	.....Of terminal
864	......With forming eyelet from elongated conductor
865	......With penetrating portion
866	.......Through insulation
867	......With insulation removal
868	...Assembling elongated conductors, e.g., splicing, etc.
869	....With end-to-end orienting
870	.....Including fluid evacuating or pressurizing
871	.....Including deforming of joining bridge
872	....With overlapping orienting
873	.....Including oppositely facing end orienting
874	...Contact or terminal manufacturing
875	....By powder metallurgy
876	....By assembling plural parts
877	.....With bonding
878	......Of fused material
879	.......Metal
880	........By impregnating a porous mass
881	.....By elastic joining
882	.....With deforming
883	.....With molding of insulation
884	.....Forming array of contacts or terminals
885	....With coating
631	..Insulator making
631.1	..Electret making
888	.Prime mover or fluid pump making
888.01	..Internal combustion I.C. engine making
888.011	...Repairing, converting, servicing or salvaging
888.012	...Rotary or radial engine making
888.02	..Fluid pump or compressor making
888.021	...Repairing, converting, servicing or salvaging
888.022	...Scroll or peristaltic type
888.023	...Screw or gear type, e.g., moineau type
888.024	...Centrifugal type
888.025	...Vane type or other rotary, e.g., fan
888.03	..Valve lifter making
888.04	..Piston making
888.041	...Repairing, converting, servicing or salvaging
888.042	...Multi-element piston making
888.043	....Utilizing a high energy beam, e.g., laser, electron beam
888.044	...With assembly or composite article making
888.045	....With thermal barrier or heat flow provision
888.046	....With fiber reinforced structure
888.047	....By composite casting or molding
888.048	....By coating or cladding
888.049	...Ring groove forming or finishing
888.05	...Gudgeon pin, wrist pin, piston pin, or boss therefor
888.051	...With other attaching provisions for connecting rod
888.06	..Cylinder, cylinder head or engine valve sleeve making
888.061	...With lining, coating or sleeve
888.07	..Piston ring or piston packing making
888.071	...Including forging or hammering
888.072	...Including casting or molding
888.073	...Including rolling or die forming, e.g., drawing, punching
888.074	...Including coating or plating
888.075	...Including grinding or honing
888.076	...Including machining or angular cutting
888.08	..Crankshaft making
888.09	..Connecting rod making
888.091	...Including metallurgical bonding
888.092	...Including metal forging or die shaping
888.1	..Camshaft making
888.2	..Push rod or rocker arm making

	PROCESS OF MECHANICAL MANUFACTURE
	.Prime mover or fluid pump making
888.3	..Seal or packing making
888.4	..Poppet or I.C. engine valve or valve seat making
888.41	...Valve guide making
888.42	...Repairing, converting, servicing or salvaging
888.43	...Valve tappet making
888.44	...Valve seat making
888.45	...Composite or hollow valve stem or head making
888.451	....Including forging
888.452	....Including extruding
888.453	....Including casting
888.46	...With assembly or composite article making
889	.Impeller making
889.1	..Repair or disassembly
889.2	..Turbomachine making
889.21	...Assembling individual fluid flow interacting members, e.g., blades, vanes, buckets, on rotary support member
889.22	...Assembling fluid flow directing devices, e.g., stators, diaphragms, nozzles
889.23	...Shaping integrally bladed rotor
889.3	..Axial blower or fan
889.4	..Centrifugal blower or fan
889.5	..Fluid coupling device
889.6	..Propeller making
889.61	...Utilizing hollow tube blank
889.7	..Blade making
889.71	...Composite blade
889.72	...Hollow blade
889.721	....With cooling passage
889.722	.....Passage contains tubular insert
890	.Catalytic device making
890.01	.Rocket or jet device making
890.02	.Burner, torch or metallurgical lance making
890.03	.Heat exchanger or boiler making
890.031	..Repairing, converting, servicing or salvaging
890.032	..Heat pipe device making
890.033	..Solar energy device making
890.034	..Regenerator or recuperator making
890.035	..Cooling apparatus making, e.g., air conditioner, refrigerator
890.036	..Tube inside tube
890.037	..Tube wound about tube
890.038	..Tube joined to flat sheet longitudinally, i.e., tube sheet
890.039	..Sheet joined to sheet
890.04	...With inserted tubes
890.041	...Utilizing bond inhibiting material
890.042	....With subsequent fluid expansion
890.043	..Tube joint and tube plate structure
890.044	...Including conduit expansion or inflation
890.045	..Tube with heat transfer means
890.046	...Finned tube
890.047	....Common fin traverses plurality of tubes
890.048	....Helically finned
890.049	....Internally finned
890.05	....Made from unitary workpiece, i.e., no assembly
890.051	..Boiler making
890.052	..Header or manifold making
890.053	..Tube making or reforming
890.054	..With metallurgical bonding
890.06	.Accumulator making
890.07	.Condenser, evaporator or vaporizer making
890.08	.Muffler, manifold or exhaust pipe making
890.09	.Fluidic or fluid actuated device making
890.1	.Fluid pattern dispersing device making, e.g., ink jet
890.11	.Tapping device making
890.12	.Valve or choke making
890.121	..Repairing, converting, servicing or salvaging
890.122	..Valve seat forming
890.123	..Valve stem or tire valve making
890.124	..With assembly, disassembly or composite article making
890.125	...Joining plural semi-circular components
890.126	...With material shaping or cutting
890.127	....Including molding or casting
890.128	....Including machining or drilling
890.129	....Including metallurgical bonding
890.13	....Including metal deforming
890.131	...Including metallurgical bonding
890.132	..Including metal shaping and diverse operation
890.14	.Gas and water specific plumbing component making
890.141	..Plumbing fixture making
890.142	..Nozzle making
890.143	...Sprayer
890.144	..Flexible conduit or fitting therefor
890.145	..Flue connector device making
890.146	..Trap making
890.147	..Return connector device making
890.148	..T-shaped fitting making
890.149	..Elbow or L-shaped fitting making
890.15	..Ferrule making or reforming
891	.Agricultural device making
891.1	..Traction apparatus, e.g., for tractor
891.2	..Harvester guard
892	.Pulley making
892.1	..Assembly
892.11	...With shaping
892.2	..Disc splitting to form pulley rim groove
892.3	..Groove forming in sheet metal pulley rim
893	.Gear making
893.1	..Assembly of gear into force transmitting device
893.2	..Gear mounting
893.3	..Gear shaping
893.31	...Worm gear
893.32	...Roll forming
893.33	...Punching or stamping
893.34	...Die-press shaping
893.35	...Gear tooth cutting
893.36	...Gear blank making
893.37	...With specific gear material
894	.Wheel making
894.1	..Steering wheel
894.2	..Material winding, e.g., reel, spool
894.3	..Land wheel
894.31	...Assembling tire to wheel body
894.32	...Disc type wheel
894.321	....Assembling wheel disc to rim and hub
894.322	....Assembling wheel disc to rim
894.323	.....With disc shaping
894.324	....Integral rim and disc making
894.325	....Disc shaping
894.33	...Tensioned spoke type wheel making
894.331	....Tensioning all spokes simultaneously
894.332	....Tensioning spokes in series
894.333	....Tensioning spokes individually
894.34	...Compression, e.g., nontension, spoke type wheel making
894.341	....Joining spokes to rim and hub
894.342	....Joining spokes to rim
894.343	....Joining spokes to hub
894.344	....Making plural spokes from a single blank
894.345	....Individual spoke making

	PROCESS OF MECHANICAL MANUFACTURE
	.Wheel making
	..Land wheel
894.35	...Rim making
894.351	....With assembly
894.352	.....Demountable rim making
894.353	....Die-press shaping
894.354	....Rolling forming
894.36	...Hub making
894.361	....With assembly
894.362	....Hub shaping
894.37	...Tire making
894.38	...Wheel trim making, e.g., wheel covers, hubcaps
894.381	....With means for retaining trim member on wheel
895	.Roller making
895.1	..Repairing or servicing
895.2	..Assembling preformed components
895.21	...Work contacting surface element assembled to core
895.211	....Work contacting surface wound about core
895.212	....With prestressing of component by heat differential, e.g., shrink fit
895.213	....Work contacting surface having annular axial sections
895.22	...Work contacting surface element assembled to end support members
895.23	...Includes securing removable cover on roller
895.3	..Fabricating and shaping roller work contacting surface element
895.31	...Toothed roller
895.32	...With coating or casting about a core
895.33	..One-piece roller making
160	.Grilles
160.6	.Jewelry and dentistry
161	.Knobs and knob shanks
163.6	.Multiperforated metal article making
163.7	..Coil wound wall screen
163.8	..Filter
168	.Railway car wheels
169.5	.Sound devices
172	.Spring-head clips
173	.Springs
175.1	.Turnbuckle making
177	.Watches and clocks
178	..Arbors, pinions and balances
179	..Cases, crowns, and pendants
897	.Structural member making
897.1	..Restoring existing member, e.g., reinforcement, repair
897.2	..Vehicular structural member making
897.3	..Static structure, e.g., a building, component making
897.31	...Openwork, e.g., a truss, joist, frame, lattice-type or box beam
897.312	....Frame component
897.32	...Panel
897.33	...Columnar member
897.34	...Metal reinforcement member for nonmetallic, e.g., concrete, structural element
897.35	...Beam or girder
898	.Process for making bearing or component thereof
898.01	..Repair
898.02	..Fluid bearing
898.03	..Linear bearing
898.04	..Rotary bearing
898.041	...Thrust bearing
898.042	...Plain bearing
898.043	....Self-adjusting or self-aligning, including ball and socket type, bearing and component making
898.044	.....Deforming socket to secure ball
898.045	......Die-press shaping
898.046	.......Having liner
898.047	.....Having liner
898.048	.....Socket making
898.049	......By molding or casting
898.05	......Nonmetallic socket
898.051	......By assembly
898.052	.....Ball making
898.053	......With metallurgical bonding
898.054	....Sleeve or bushing making
898.055	.....Nonmetallic
898.056	.....Strip or blank material shaping
898.057	......Die-press shaping
898.058	.......Having inner lining layer
898.059	.....Having liner
898.06	...Anti-friction bearing or component thereof
898.061	....Assembly of race, cage and rolling anti-friction members
898.062	....Assembly of race and rolling anti-friction members
898.063	.....With race making
898.064	....Assembly of cage and rolling anti-friction members
898.065	.....With cage making
898.066	....Race making
898.067	....Cage making
898.068	....Roller making
898.069	....Ball making
898.07	..Mounting
898.08	..Demounting
898.09	..Pre-usage process, e.g., preloading, aligning
898.1	..Lubrication
898.11	..Sealing
898.12	..Coating or casting
898.13	..Bearing surface treatment
898.14	..Specific metallic composition
898.15	..Nonmetallic bearing element
899	.Ball making
899.1	..Hollow ball
401.1	.Converting
402.01	.Repairing
402.02	..Seal or element thereof
402.03	..With disassembly
402.04	...Including reconditioning of part
402.05	....By shaping
402.06	.....Removing of material
402.07	......And metallurgical operation, e.g., welding, casting
402.08	...Replacement of defective part
402.09	..By attaching repair preform, e.g., patching
402.11	...And removing damaged material
402.12	....Mechanically attaching preform with separate fastener
402.13	....Metallurgically attaching preform
402.14	...Preform mechanically attached with separate fastener
402.15	....Screw threaded fastener
402.16	...Preform metallurgically attached
402.17	...Screw threaded preform
402.18	..By applying fluent material, e.g., coating, casting
402.19	..By shaping, e.g., bending
402.21	...Including heating
403.1	.Including scrap recovery or utilization
403.2	..Metalworking to consolidate scrap
403.3	..Separating materials one from another
403.4	...By burning or use of heat
404	.During simulated operation or operating conditions
405	..Temperature
406	.Center locating and shaping
407	.With testing and/or indicating
408	.Of slide fasteners
409	..Of slider
410	..Of interlocking element

	PROCESS OF MECHANICAL MANUFACTURE
411	.Obtaining plural pieces from preassembled blanks
412	.Obtaining plural pieces from unitary piece
413	..Breaking through weakened portion
414	..Dividing through modified portion
415	..Dividing on common outline
416	..Coacting pieces
417	..Dividing sequentially from leading end
418	.Providing transitory integral holding portion
419.1	.Shaping fiber or fibered material
419.2	.Magnetic shaping
421.1	.Shaping by direct application of fluid pressure
421.2	..Explosive
422	.Shaping container end to encapsulate material
423	.Utilizing transitory attached or associated separate material
424	..Temporary protective coating, impregnation, or cast layer
425	.Shaping mating parts for reassembly in different positions
426.1	.Disassembly
426.2	..With other than ancillary treatment or assembly
426.3	..With conveying of work or disassembled work part
426.4	..By alteration or destruction of work part or connector
426.5	..By application of force
426.6	...To elastically deform work part or connector
428	.Assembly and/or joining
429	..Progressively advancing of work assembly station and/or assembled portion of work
430	...Advancing work to successive stations (i.e., assembly line)
431	...Advancing station
432	..Punching, piercing or reaming part by surface of second part
432.1	...With shaping
432.2	....Of first part
433	..By stringing
434	..Retaining clearance for motion between assembled parts
435	...Between tube-forming helical coils
436	...Through resilient media
437	...By deforming interlock
438	....By folding part into plural ears
439	....By wrapping around
440	.....Of link closure
441.1	....Of sphere in socket
441.2	.....Ball point pen making
442	.....Allowing only single plane motion
443	....Of flange into tubular socket
444	....Outwardly deforming internally fitted rod
445	..Sizing mating parts during final positional association
446	..With prestressing of part
447	...By heat differential (e.g., shrink fit)
448	...Of skin on frame
449	....By flexing
450	...Elastic joining of parts
451	....Confining elastic part in socket
452	...Prestressing rod, filament or strand
453	...By snap fit
454	..Of flexible wall, expansible chamber devices (e.g., bellows)
455.1	..Spaced wall tube or receptacle
456	..Of separate helix (e.g., screw thread)
457	..Ribbing
458	..With coating previous to assembly
459	...To roughen surface
460	..Subsequently coating
461	..With spreading of cable strands
462	..Joining plate to frame
463	..Peripheral joining of opposed mirror image parts to form hollow bodies
464	..Associating parts by use of aligning means (e.g., fixture)
465	...Registering mating opposed tool parts (e.g., punch and die)
466	...By multiple cooperating fixtures
467	...Sequential association of parts on single fixture
468	...By manipulating single fixture
469	..Assembling two or more subassemblies
469.5	..Metal deforming with nonmetallic bonding
505	..Joining by deforming
506	...Securing cup or tube within axially extending double walled annulus
507	....By expanding inner annulus
508	....By constricting outer annulus
509	...Over-edge clamping of seated part
510	....By necking in cup or tube walls
511	.....At cup or tube ends
512	....By flaring inserted tube end
513	....By bending over projecting prongs
514	...Of parallel side-by-side elongated members
515	...Inward deformation of aperture or hollow body walls
516	....Hollow body is axially joined sleeve or cap
517	.....To rod or elongated member
518	......With lapping of ends of plural rod or members
519	......After thinning
520	....By axially applied force
521	...Surface interlocking
522.1	...Expanding part in cavity, aperture or hollow body
523	....Radial expansion of internally fitted tube
524	....Peripheral edge joining of abutting plates
524.1	....Riveting
525	..By driven force fit
525.1	..By application of separate fastener
525.2	...Riveting
526.2	.With separation of localization of as cast defects in ingots (e.g., anti-pipe)
526.3	..Compressing ingot while still partially molten
526.4	..Removal of defects
526.5	...From center of ingot to leave hollow blanks
526.6	...After deforming
527.1	.With applying or shaping of fluent material
527.2	..Coating
527.3	...And casting
527.4	...Subsequent to metal working
527.5	..Metal casting
527.6	...Followed by cutting or removing material
527.7	...Including rolling
530	..Filling openings
557	.Shaping one-piece blank by removing material
558	..Successive removal operations
559	.Work holding
568	TRANSFER MEANS BETWEEN STORAGE AND WORK STATION FOR PLURAL, SEPARATE, TOOLS
560	CONVERTIBLE METAL WORKING MACHINES
560.1	.Vise type

33 R	PLURAL DIVERSE MANUFACTURING APPARATUS INCLUDING METAL SHAPING AND/OR ASSEMBLY
33 A	..Flash removers
33 B	..Welding strip ends
33 C	..Casting and working
33 D	..Tube making
33 E	..Covering
33 F	..Wire working
33 G	..Radiator making
33 H	..Printing plates
33 J	..Turret
33 K	..Assembly
33 L	..Armatures
33 M	..Electrical connectors and terminals
33 N	..Tire valve and spark plug
33 P	..Multiple station with conveyor
33 Q	..Multiple stations working strip material
33 S	..Continuous strip
33 T	..Work on tubes
33.2	.Slide fastener or slide fastener element
33.5	.Binding or covering and cutting
33.52	..Cutting covering material only
	.Type of machine
26 R	..Drill press
26 A	....Drilling and other
26 B	....Portable
27 R	..Lathe
27 A	....Convertible
27 B	....Commutator
27 C	....Lathe and tool
28	...Grinding attachment
29	...Pulley and wheel
30	..Planer
34 R	.Forging and bending, cutting or punching
34 A	...Fasteners (zipper)
34 B	...Riveting
34 C	...Ball making
34 D	...Wire working
561	.With means to feed work during tool contact
562	..Including nonrotary flying tool
563	.With means to feed work intermittently from one tool station to another
37 R	..Stock turret
37 A	....Swiss type
38 R	..Blank turret
38 A	....Rotary work - vertical axis
38 B	....Rotary work - horizontal axis
38 C	....Stationary work
38 D	....Belt drive
38 E	....Crankshaft
38 F	....Collapsible tube
38.9	..Endless belt
564	.Separate tool stations for selective or successive operation on work
564.1	..Including assembly or disassembly station
564.2	...And means to machine work part to fit cooperating work part
564.3	...And means to sever work prior to disassembly
564.4	....Comprising means to strip insulation from wire
564.5	...And means to stake electric wire to commutator or armature in assembling of electric motor or generator
564.6	...And means to sever work from supply
564.7	...And means to machine product
564.8	....To sever product to length
565	.Common reciprocating support for spaced tools
566	.Including composite tool
566.1	..Including severing means
566.2	...To sever electric terminal from supply strip
566.3	...To trim electric component
566.4	....Means comprising hand-manipulatable implement
35.5	.With turret mechanism
36	..Multiple turret
39	..Tool turret
40	...Rotary tool holder
41	...Sliding tool holder
42	...Fluid operated
	...Cam operated
43	....Longitudinal turret axis
44	....Transverse turret axis
45	...Lever operated
46	...Rack-and-pinion operated
47	...Screw operated
48.5 R	..Including rotating and/or locking means
48.5 A	....Lock means for tool or work turrets
49	...Frictional and positive
50	.Multiple-tool holder
51	..Laterally movable stock holder
52	..Axial tool and transversely movable slide rest
53	...Rotary tool spindle
54	..Longitudinally and transversely movable
55	...Rotary tool spindle
56	..Oscillating tool
56.5	.Including machining means
56.6	..And work-holder for assembly
57	.Attachments
64	.Speed controllers
65	.Carriage stop mechanisms
650	PLURAL DIVERSE MANUFACTURING APPARATUS
700	MEANS TO ASSEMBLE OR DISASSEMBLE
701	.With means to regulate operation by use of templet, tape, card or other replaceable information supply
702	..With comparator
703	...Computer input
704	..Web or strand-carried information supply
705	.With means to test work or product
706	.With randomly actuated stopping or disabling means
707	..Responsive to condition of work or product
708	..Responsive to operative (e.g., safety device, etc.)
709	.With control means energized in response to activator stimulated by condition sensor
710	..Including means to divert defective work part
711	..Multiple station assembly or disassembly apparatus
712	...Including position sensor
713	..Responsive to timer
714	..Responsive to work or work-related machine element
715	...With means to fasten by deformation
716	....Self-piercing work part
717	...With means to fasten by elastic joining
718	...With means to fasten by frictional fitting
719	...Including means to apply magnetic force directly to position or hold work
720	.With signal, scale, illuminator, or optical viewer
721	..For work-holder for assembly or disassembly
722	.Including means to provide a controlled environment
723	.Nuclear device

MEANS TO ASSEMBLE OR DISASSEMBLE
724 .Roller or ball bearing
725 ..Including deforming means
726 .Heat exchanger
726.5 ..Including means to manipulate heat exchanger tube bundle
727 ..Including deforming means
728 .Means to place sheath on running-length core
729 .Means to assemble electrical device
730 ..Storage cell or battery
731 ...Including deforming means
732 ..Motor or generator
733 ...Means to assemble commutator
734 ...Means to position insulation
735 ...Means to stake wire to commutator or armature
736 ...Including deforming means
737 ..Magnetic memory device
738 ..Laminated device
739 ..Means to fasten electrical component to wiring board, base, or substrate
740 ...Chip component
741 ...Multilead component
742 ..Multiple station assembly apparatus
743 ..Means to apply vacuum directly to position or hold work part
744 ..Means to apply magnetic force directly to position or hold work part
745 ..Conductor
746 ...Electrode
747 ...Terminal or connector
748 ....Assembled to wire-type conductor
749 .....Means to simultaneously assemble multiple, independent conductors to terminal
750 .....Means comprising hand-manipulatable implement
751 ......Fastening by deformation
752 ......Fastening by elastic joining
753 .....Means to fasten by deformation
754 .....Means to fasten by elastic joining
755 ...Multiple, independent conductors
756 ...Switch or fuse
757 ..Means to simultaneously fasten three or more parts
758 ..Means comprising hand-manipulatable implement
759 ..Means to align and advance work part
760 ..With work-holder for assembly
761 ..Means to fasten by deforming
762 .Means to disassemble electrical device
763 ..Storage cell or battery
764 ..Means comprising hand-manipulatable implement
765 .Means to place traveler on ring or ring on bobbin of a textile machine
766 .Slide fastener
767 ..Means to assemble stop onto stringer
768 ..Means to assemble slider onto stringer
769 ..Means to assemble teeth onto stringer
770 ..Disassembly means
771 .Means to interrelatedly feed plural work parts from plural sources without manual intervention
772 ..Box or pallet assembly means
773 ..Means to assemble container
774 ...Handle to container
775 ...Label to container
776 ...Pressurized dispensing container
777 ...Hypodermic syringe
778 ...Including fluid component
779 ..Running-length work
780 ...Means including orbiting running-length work supply
781 ...Pipe section
782 ...Assembled to article
783 ..Multiple station assembly apparatus
784 ..Including assembly pallet
785 ..Including turret-type conveyer
786 ..Including converging conveyers
787 ..And means to fasten work parts together
788 ...By deforming
789 ...By elastic joining
790 ...By friction fit
791 .Multiple station assembly or disassembly apparatus
792 ..Including turret-type conveyer
793 ..Including converging conveyers
794 ...And primary central conveyer
795 ..Means to fasten work parts together
796 ...By deforming
797 ...By elastic joining
798 .Means to drive self-piercing work part
799 .Including assembly pallet
800 .Including provision to utilize thermal expansion of work
801 .Means to assemble or disassemble container and fluid component
802 .Vehicle wheel
803 ..Railway wheel
804 .Tumbler lock
805 .Toy doll
806 .Film or tape cartridge
807 .Crystal to watch or clock
808 .Means to insert or extract pen point
809 .With magazine supply
810 ..And magnetic work-holder or positioner
811.2 ..Assembling means comprising hand-manipulatable implement
812 ...One work part comprising living tissue
812.5 ...Comprising driver for snap-off-mandrel fastener; e.g., Pop (TM) riveter
813 ...One work part comprising nut or screw
814 ...One work part comprising paper clip
815 ...Means to assemble tire stud into tire tread
816 ...Means to fasten by deforming
817 ....Fastening sinker to fishing line
818 ..Means to fasten by deforming
819 .Running-length work
820 ..Assembled on core
821 .Including means to vibrate work
822 .Including work conveyer
823 ..Including transporting track
824 ...And work carrying vehicle
213.1 .Valve applying and removing
214 ..Engine valve unit pullers or appliers
215 ..Engine, valve spring compressors, only
216 ...Plural spring engagement
217 ...Screw operated
218 ....Parallel or tong type, side entrance
219 ...Lever operated
220 ....Single jaw or valve engagement
221 ....Plier type
221.5 ..To or from wheel rim of resilient tire or tube
221.6 ..Removal tool
222 .Piston ring inserters and removers
223 ..Plier-type operation
224 ...With ring encirclement
225 .Spring appliers and removers
226 ..Transmission spring
227 ..Helical springs
228 ..Flat spiral spring (e.g., watch and clock type)
229 ..Circular springs
230 ..Leaf springs
231 .Staking watches and clocks
232 ..Plier type
233 .Lining to brake shoes
234 .Tube and coextensive core

	MEANS TO ASSEMBLE OR DISASSEMBLE
235	.Applying and removing resilient articles (e.g., tubes, sleeves, etc.)
235.5	..Nipples to nursing bottles
236	..Well protectors to sucker rods
237	.Couplings to conduits
237.5	.Loose-leaf sheet binder
238	.Compressing parts together face to face
239	.Spreading parts apart or separating them from face to face engagement
240	.By rotation of work part
240.5	..Helix inserting and/or removing
241	.By stringing
242	.Tool handles and tools
243	.Tool chucks and tools
243.5	.overedge assembly
243.51	..Belt-hook attacher
243.517	..Annular work
243.518	...With radially acting tool inside annular work
243.519	...With second workpiece inside annular work one workpiece moved to shape the other
243.521	....Comprising driver for snap-off-mandrel fastener; e.g., Pop (TM) riveter
243.522	.....Including near side fastener shaping tool
243.523	.....Pneumatic- or fluid-actuated tool
243.524	......Liquid
243.525	.......And gas
243.526	.....Having rotary drive mechanism
243.527	.....Having allochiral actuating handles
243.528	.....Having repositionable annulus engaging tool
243.529	....Including near side fastener shaping tool
243.53	..Riveter
243.54	...Single header
243.55	....Pipe joiner
243.56	..Clip applier
243.57	..Binding or covering
243.58	...Edge binding
244	.Pullers or pushers, contained force multiplying operator
245	..Hubcaps
246	..Battery terminals
247	..Cotter pins
248	...Plier type
249	..Valve stem pins and keys
250	..Machine keys
251	..Arbor-type pressers
252	..Fluid operator
253	..Wedge operator
254	..Percussion or explosive operator
255	...Tube, sleeve, or ferrule inserting or removing
256	..Screw operated
257	...C-frame
258	...Central screw, work-engagers around screw
259	....Work-engager arms along or parallel to screw
260	.....With arm connecting engaging means
261	.....Pivotal arms
262	.....Pivotal grippers on screw
263	....Tubular or tube segment form work-engagers
264	.....Screw threaded work-engager
265	.....Movable grippers on screw
266	.....Plate or bar form work-engagers
267	..Lever operator
268	...Plier type
269	.Piston ring group contractors and holders
270	.Hand-manipulatable tools
271	..Aligners or centers
272	...Tube with tube
273	...Auto wheel with auto chassis
274	...Clutch plates
275	..Impact receiving tools
276	...C-frame
277	...Thread protectors (e.g., wheel axle type)
278	..Hand grippers for direct push or pull
279	...Centrifugal separators
280	...Tube sleeve or ferrule applying and removing
281	....Thread-tapping grip
281.1	.With work-holder for assembly
281.2	..For assembling a luminescent mantle
281.3	..And assembly press (e.g., truss assembly means, etc.)
281.4	..Having means to permit support movement while work is thereon
281.5	.Including means to relatively position plural work parts
281.6	.Work-supported apparatus
282	.Tube, sleeve or ferrule
283	.Work grippers, anvils and elements
283.5	.By deforming
78	FILES AND RASPS
79	.Sectional
80	.Holders
110	ROLLS OR ROLLERS
110.5	.With handle
111	.With guage
112	.With signal or indicator
113.1	.With inflatable chamber
113.2	..Anti-deflection
114	.With fan
115	.Combined (e.g., with driving gear here)
116.1	.Rotatable relative to supporting shaft
116.2	..Anti-deflection
117	.With internal wedging expander
118	.With sheet edge holder
119	..End ring
120	.With pile or nap surface
121.1	.With surface indentations, projections or slits
121.2	..Plural direction alignment of sets, e.g., checkerboard type
121.3	...Outer screenlike layer over skeleton or perforate core, e.g., "Dandy Roll"
121.4	..Helically aligned
121.5	..Axially aligned
121.6	..Radially aligned
121.7	...With minor interruptions
121.8	..Irregular and/or uneven arrangement, e.g., sandblast type
122	.Tapering
123	.With end rings or reinforcement
124	.With segmental sections
125	.With annular axial sections
126	.With leaf or coil spring member
127	.With helical member
128	.With spiral member
129	.With internal anchor for annular member
129.5	.Single annular member only
130	.With plural annular members
131	..With cloth annular member
132	.Compositions and materials
1.01	MISCELLANEOUS APPARATUS
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	CROSS-REFERENCE ART COLLECTIONS
	********************************
900	METHODS AND APPARATUS FOR ASSEMBLY BY ELECTROSTATIC ATTRACTION
901	BALANCING METHOD
902	FILTER MAKING
903	FIREARM BOLT MAKING
904	LAMINATED METAL ARTICLE MAKING
905	MAKING COIL WOUND WALL SCREEN
906	NUCLEAR DEVICE MAKING

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DIGESTS

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DIG 1	Methods and apparatus involving adhesives
DIG 2	Methods and apparatus using aluminum
DIG 3	Methods and apparatus with bending
DIG 4	Methods and apparatus with brazing
DIG 5	Methods and apparatus with casting
DIG 6	Methods and apparatus with centrifugal casing
DIG 7	Methods and apparatus with cleaning
DIG 8	Methods and apparatus with composite casing
DIG 9	Methods and apparatus with cup formed and bottom removed
DIG 10	Methods and apparatus with die casting
DIG 11	Methods and apparatus with drawing
DIG 12	Methods and apparatus with electroplating
DIG 13	Methods and apparatus with electric heating
DIG 14	Methods and apparatus with enameling
DIG 15	Forming article on end of long stock and then cutting off
DIG 16	Methods and apparatus with etching
DIG 17	Methods and apparatus with making flow lines; crystals
DIG 18	Methods and apparatus with forging
DIG 19	Methods and apparatus with grinding
DIG 20	Methods and apparatus for double blank
DIG 21	Methods and apparatus for heating
DIG 22	Methods and apparatus with indium
DIG 23	Methods and apparatus with knurling
DIG 24	Methods and apparatus with local heating
DIG 25	Methods and apparatus with particular materials
DIG 26	Methods and apparatus with machining
DIG 27	Methods and apparatus with magnesium
DIG 28	Magnetic recording digest
DIG 29	Molding with other steps
DIG 30	Ornamenting with other steps
DIG 31	Pressing powder with other steps
DIG 32	Rolling with other steps
DIG 33	Scoring with other steps
DIG 34	Scaling with other steps
DIG 35	Shrink fitting with other steps
DIG 36	Shot blasting with other steps
DIG 37	Stamping with other steps
DIG 38	Spot welding with other steps
DIG 39	Spraying with other steps
DIG 40	Strips of repeated articles - cut up later
DIG 41	Taper tube making
DIG 42	Tension applied during working
DIG 43	Upsetting and flanging tube ends
DIG 44	Vacuum
DIG 45	Titanium
DIG 46	Vibration
DIG 47	Extruding with other steps
DIG 48	Welding with other steps
DIG 49	Work hardening with other steps
DIG 50	Cutting fluid application and debris control
DIG 51	Power stop control for movable element
DIG 52	Chip breakers
DIG 53	Workpiece and debris separators
DIG 54	Fluid control interrelated with machine tool mechanism
DIG 55	With cutter drive
DIG 56	With shield or hood movements
DIG 57	With cutter feed
DIG 59	Hood actuated by tool or work approach
DIG 60	Progressive displacement of hood
DIG 61	Plural-type debris removers
DIG 62	Rubbing transfer of solid coating to rotating element
DIG 63	Fluid conveyor or applicator
DIG 64	Ambulatory cutter with fluent conduit
DIG 65	Cutter contained supply reservoir
DIG 66	Fluid flow to channeled cutter
DIG 67	Rotating cutter
DIG 68	Hollow spindle contains
DIG 69	Fluid spreader contacts cutter
DIG 70	Rotary or oscillating fluid applicator
DIG 71	Complete immersion of cutter
DIG 72	Dip or splash supply
DIG 73	Chain or belt conveyor
DIG 74	Partial immersion of cutter
DIG 75	Adjustable liquid level
DIG 76	Movable liquid-carrying trough
DIG 77	With separator or filter
DIG 78	Air blast and/or vacuum conveyor
DIG 79	Removable debris receptacle
DIG 81	Gas as a conveyor
DIG 82	Air current generated by cutter
DIG 83	Fan coaxial with cutter
DIG 84	Vacuum exhaust type
DIG 85	With fluid control valve
DIG 86	Hood encased cutter
DIG 87	Multiple fluid paths
DIG 88	By projecting, squirting or dripping
DIG 89	Gas entrained liquid supply
DIG 90	Elevated tank supply
DIG 91	Plural discharge openings
DIG 92	Fluid channel in cutter
DIG 93	Plural discharge loci
DIG 94	Debris removers, catchers and deflectors
DIG 95	Magnetic or electrostatic
DIG 96	Mechanical removal assistant
DIG 97	Cutter engaging cleaner
DIG 98	Rotating, reciprocating or oscillating cleaner
DIG 99	Flexible conveyor
DIG 100	Screw or cam conveyor
DIG 101	Pans, beds and tables
DIG 102	Debris chutes
DIG 104	Tool or work attached
DIG 105	Assembly, magnetic or indicia tools

PRESSURE FLUID SOURCE AND MOTOR

384 .Expansible chamber type volumetric responsive measuring device in series with or driven by output motor operates the motor controller

385 .Manual pump pressurizes fluid to position output motor motive fluid control valve

386 ..Manual pump supplies motive fluid to output motor when power motive fluid pump is inactive

387 .Distinct structure metering and dispensing a stroke length determining volume of motive fluid to the motor

388 .Full range correspondence of position of external manipulator and motor positioned member effected by feedback linkage

389 ..Positioned member is displacement controller of second motor pump

390 ..Electrical feedback means

391 ..Feedback linkage controls variable displacement pump

392 ..Feedback includes plural movable valve parts

393 .Manipulator for motive fluid control valve having load feel or motor pressure feedback

394 .Having apparatus control by timer or delay means

395 .Control relative to independently driven oscillator, speed standard or pacer device

396 .Utilizing lubricant, starter motor, cooling fluid, or fluid used for combustion in an internal combustion engine

397 ..Vacuum generated by internal combustion engine intake manifold powers motor

398 .Utilizing natural energy or having a geographic feature

399 .Unsafeness, unreadiness or disarray prevent manual change or operative state

400 .Selective or simultaneous power and manual energy inputs

401 ..Fluid motor and directs manual drive of output device

402 ..Separate manual and motor driven pumps supply motive fluid to output motor

403 .Apparatus having means responsive to or ameliorating the effects of breakage, plugging, mechanical failure or power failure

404 ..Stand-by stored energy means activated responsive to malfunction or power failure

405 ..Second motive fluid supply means takes load responsive to failure of first

406 ..Output means locked, positioned or released on failure of motive fluid supply means

407 .Pneumatic motor with gas supply or removal device

408 ..Convertible motor-pump device selectively charges and is driven by gas from storage vessel

409 ..Having automatic control

410 ...Responsive to condition in gas storage vessel

411 ...Suction pressure on motor regulated

412 ..Having pump device

413 .With control means for structure storing work driving energy (e.g., accumulator, etc.)

414 ..Energy of braking or of reversed load on motor stored

415 ..Accumulator pressurized by gas pump or external gas supply

416 ..Plural accumulators

417 ..Stroke device driven by successively operated energy input structure and stored energy structure

418 ..Control by sensor of accumulator condition

419 .Motor driven by motive fluid of system drives pump pressurizing motive fluid of system

420 .Having condition responsive control in a system of distinct or separately operable outputs or output drive units

421 ..With plural pump or motive fluid source relationships selected by multiway valve

422 ..Independently actuatable outputs with condition responsive means insuring sufficiency of feed of motive fluid

423 ..Including means for controlling or for reversing input pump drive

424 ..Serially connected motors controlled to establish parallel operation or to by-pass a motor means of the series

425 ..Condition responsive means establishes number of motor sections driving a common output

426 ..Speed of, pressure in, or position of one output motor or motor section controls another

427 ..With manual control or selection of motor, motor speed or motor load

428 .Having condition responsive control in a system of separately operable power input pumps, pump motors, pump cylinders or pressure fluid sources

429 ..With externally operated multiway valve changing the relationships of the motive fluid pressurizing or supplying means

430 ..Pressure or volume responsive means shifts the relationship

431 .Condition responsive control of or by input to input pump drive means

432 ..Pump drive means deactivated responsive to position of output stroke device

433 .Having correlated or joint actuation of controller of input to motive fluid pressurizer and of controller of motive fluid floow

434 ..Interlinked pump drive controller and manipulator of stroke device

435 .Having a mechanical clutch or brake device in the power train

436 ..Correlated control of device and motive fluid flow controller

437 ..Selective fluid and mechanical drive of output from input

438 ...Condition responsive selection

439 ..Device acts on intermediate reactive rotor to modify speed ratio or direction

440 ...Condition or direction responsive device

441 ..Condition or direction responsive device

442 ..Device holds output in adjusted position

443 .Servo-motor having externally operated control valve sets motor or pump displacement

PRESSURE FLUID SOURCE AND MOTOR
.Servo-motor having externally operated control valve sets motor or pump displacement
444 ..Having auxiliary pump or external source of motive fluid supplying servo-motor
445 .Condition responsive control of pump or motor displacement
446 ..Pump displacement varied responsive to position of motor or output device
447 ..Control actuated by a servo-motor fed by a speed indicating auxiliary pump
448 ..By means sensing rotational speed of output motor
449 ..By means sensing rotational speed of prime mover or pump
450 ..Choke in motor feed or discharge line establishes displacement control pressure (e.g., rate of flow responsive, etc.)
451 ..Controlled by torque of motor or motor discharge pressure
452 ..Pump displacement controlled by pump discharge or motor feed pressure
453 .With means purging, cleaning or separating undesirables from motive fluid
454 ..Solids from liquid separator
455 .Having leakage collecting structure
456 .Having distinct cooling or lubricating structure
457 .Collapsible joined device having fluid trapping valve in joint
458 .Having assembly or repair structure
459 .Condition responsive control of motive fluid flow
460 ..Holding or braking valve in motor exhaust line controlled by pressure in motorfeed line
461 ..Discharge from contracting cylinder of double-acting motor controlled
462 ..With externally operable multiway valve means directing flow to a stroke device
463 ...Sensor of external condition controls valve
464 ..Of motive fluid transfer between a reservoir and a recirculating path of a pump motor loop
465 ..Having externally operable means for setting motor or pump displacement or direction of rotation
466 ..Of braking or holding valve in motor discharge line
467 ..Stroke cylinder open to exhaust responsive to position of output member
468 ..Of by-pass of motor, pump or flow control element
469 .Having means controlling or attenuating shock vibration, sticking or chattering
470 .Externally operated multiway valve or interconnected control elements control motive fluid for a limited stroke to-and-fro device
471 ..Having plural distinct or separately operable output means
472 ..Flow to opposed expansible chambers having a common output reversed
473 .Pump means moves motive fluid from one chamber to an opposite chamber of opposed expansible chambers having a common output
474 ..Valve or restriction controls gravity or spring return of output
475 ..With means compensating for charge leakage or volume difference between discharging and receiving chambers
476 ..Reversible delivery from pump means
477 .Ram driven by fluid pumped from reservoir
478 ..Having means pressurizing, vacuumizing or venting reservoir
479 ..Having selective or variable pump displacement or pump drive leverage
480 ..Telescopic ram
481 ..Having fluid trapping means with a manual release or by-pass holding ram
482 ...Release valve and pump actuated by a common handle
483 .Having selecting means distributing motive fluid between plural motors or cylinders rotating a common output shaft
484 .Having plural energy outputs (e.g., plural motors, etc.)
485 ..Unit having coaxial rotary output shafts and pump means in a common housing (e.g., automobile differential, etc.)
486 .Having plural energy input means, pumps or diverse pump outlets
487 .Input pump and rotary output motor system having displacement varying type of direction or speed selector
488 ..Including auxiliary system feed pump
489 ..Having valve means controlling flow between pump and motor
490 ..Both motor and pump have displacement adjustment means
491 ...Having common or intercontrolled adjuster actuating means
492 ....Motor swash plate and pump swash plate intercontrolled
493 .Valve means reverses flow from pump to reversible rotary motor
494 .Including by-pass or restrictor controlling flow circuit
495 MOTOR HAVING A BUOYANT WORKING MEMBER
496 .With means to vary buoyancy of working member
497 .Working member actuated by the rise and fall of a surface of a body of fluid
498 ..Having tide responsive working member positioning means
499 ..Having means responsive to lateral impulse of fluid
500 ..Having articulated buoyant members
501 ..Motor is free floating unit
502 ..Having fluid flow or wave controlling, confining or directing means
503 ...In which the control means is variable
504 ..Having flexible strand working member motion transmitting means
505 ..Having relatively movable working members
506 ..Working member pivotally supported
507 ..Having one-way clutch power transmission means, e.g., ratchet, etc.
685 MOTOR HAVING EXHAUST FLUID TREATING OR HANDLING MEANS
686 .Having condition responsive control of exhaust structure or by exhaust condition
687 .Motor-exhaust assembly with stress relieving or absorbing structure
688 .Water mingled with exhaust steam
689 .Exhaust fluid mingled with non-exhaust fluid
690 .Motor and indirect heat exchanger

MOTOR HAVING EXHAUST FLUID TREATING OR HANDLING MEANS
.Motor and indirect heat exchanger
691 ..Boiler feed water heated by exhaust
692 ..Having condensate pump
693 ..Plural heat exchangers
694 .Including exhaust flow directing or dividing device
695 ..Device directs exhaust of air motor into atmosphere
696 ..Device is draft structure of hydraulic motor
697 ..Turbine discharge directed to flow line
698 SYSTEM HAVING PLURAL MOTORS OR HAVING DIVERSE TYPES OF ENERGY INPUT
699 .Spring type motor and internal combustion engine motor
700 .Motors intercontrolled responsive to angular speed differential of rotatable output shafts
701 ..Hydraulic or pneumatic intercontrol system
702 ..Electrical intercontrol system
703 .Control including pacer, oscillator, punch card, template or tape
704 .Control including clock, retarder or programmer
705 .Signal, indicator or inspection means
706 .Having condition responsive control
707 ..Of branched flow of motive fluid through serially connected motors
708 ..Of or by motor cooling, ventilation, or brake system
709 ..Of or by disconnect or load release means to output means or between motors
710 ..Intercontrol of internal combustion engines responsive to relative fuel or manifold conditions
711 ..First motor load share adjusted relative to the load share of a second motor driving a common load, responsive to a condition of the second motor or of the load
712 .Engine apparatus or system actuatable selectively or simultaneously by internal combustion of fuel and by expansion of motive fluid
713 .Plural motors having brake means for motor or output means
714 .Plural motors having supply or control of cooling, lubricating, or scavenging fluid
715 .Plural motors, connected for serial flow of motive fluid
716 .System of plural motors having a common output structure
717 ..And another output
718 ..Having disconnect means between a motor and the output
719 .Interrelated or group control operating means for plural motors or outputs
720 .Unitary support for plural motors
721 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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900 EXCESS AIR TO INTERNAL COMBUSTION ENGINE TO ASSIST EXHAUST TREATMENT
901 EXHAUST TREATMENT SPECIAL TO ROTARY INTERNAL COMBUSTION ENGINES
902 ROTARY REACTOR, SEPARATOR OR TREATER OF EXHAUST OF AN INTERNAL COMBUSTION ENGINE
903 CLOSURES OPERATORS
904 PROPELLER OR AIR PLANE SYSTEM
905 WINDING AND REELING
906 ENGINE SPEED RESPONSIVE THROTTLE CONTROL SYSTEM
907 WORKING MEMBER POSITIONED AGAINST COUNTERFORCE BY CONSTANTLY APPLIED MOTIVE FLUID
908 WASHING MACHINE SYSTEM
909 REACTION MOTOR OR COMPONENT COMPOSED OF SPECIFIC MATERIAL
910 FREE PISTON
911 FLUID MOTOR SYSTEM INCORPORATING ELECTRICAL SYSTEM
912 COOLING MEANS
913 COLLECTION OF REGGIO PATENTS
914 EXPLOSIVE
915 COLLECTION OF GODDARD PATENTS
916 UNITARY CONSTRUCTION
917 SOLID FUEL RAMJET USING PULVERIZED FUEL

1 CONSUMABLE PRODUCTS PRODUCED BY COOLING
3.1 USING ELECTRICAL OR MAGNETIC EFFECT
3.2 .Thermoelectric; e.g., peltier effect
3.3 ..Heat pump, selective heating and cooling
3.4 ..Including dehumidifying and condensate handling
3.5 ..Made with flexible heat exchanger material; e.g., blanket, wearing apparel, etc.
3.6 ..Interior of enclosure cooled; e.g., refrigerator
3.61 ...Having vehicle feature; e.g., cooling cart, car, truck, boat, etc.
3.62 ...Portable, having transporting feature; e.g., handle
3.63 ...Icemaker
3.64 ...Beverage dispenser
3.7 ..Including specific circuitry or heat exchanger material
4 CHEMICAL REACTION OR SOLIDS DISSOLVING
5 VORTEX TUBE, E.G., RANQUE
6 GAS COMPRESSION, HEAT REGENERATION AND EXPANSION, E.G., STIRLING CYCLE
7 UTILIZING FUEL AS REFRIGERANT
8 SOLIDIFIED OR LIQUIFIED GAS (E.G., CRYOGEN) PRODUCT MANUFACTURING FROM A GAS
9 .Processes, e.g., liquefying per se
10 ..Solidifying gas as consumable product
11 ..Extracting a component from a mixture of gases by liquefaction and separation
12 ...With solidification
13 ....Extracting solids prior to rectifying
14 .....With filtration
15 ....Extracting by filtration
16 ...Retrograde condensation
17 ...Sorption
18 ....By solid sorbent
19 ...Selecting diverse operations
20 ...Contacting with a treating material
21 ...Modulating
22 ...Obtaining a rare atmosphere gas, e.g., argon, krypton, neon, xenon
23 ...Plural separations
24 ....Including rectification
25 .....Spaced initial charging
26 ......Repressurizing
27 .....Returning contacting component to separator
28 ......To same separator
29 .....Downstream intermingling of separated components
30 ......Repressurizing
31 .....Utilizing product of separator as indirect heat exchanging medium in rectification
32 ...Rectification
33 ....Supplemental withdrawal
34 ....Intermediate heat exchanging
35 .Solidified gas shaping means, e.g., press
36 .Liquefied gas producing and separating apparatus
37 ..With condition sensing means
38 ..Flow line connected expansion engine and treater
39 ...Downstream of separator
40 ..With external refrigeration producer
41 ..Forcing means downstream of separator, e.g., liquid pump
42 ..Separator, e.g., rectifier
43 ...Dividing and recombining feed prior to separator
44 ...With feed treater upstream of rectifier-separator
45.1 STORAGE OF SOLIDIFIED OR LIQUIFIED GAS (E.G., CRYOGEN)
46.1 .With sorbing or mixing
46.2 ..Mixing of substance with hydrogen
46.3 ..Sorbing into capillary material
47.1 .With conservation of cryogen by reduction of vapor to liquid within storage receptacle
48.1 .With vapor discharged from storage receptacle
48.2 ..And subsequently restored to receptacle as liquid
48.3 ..And subsequently used to cool receptacle
48.4 ..Discharge caused by ignition of combustible gas
49.1 .With measuring
49.2 ..Of liquid level
50.1 .Liquified gas transferred as liquid
50.2 ..With vaporizing of liquified gas downstream of storage
50.3 ...Energy converted to work (e.g., used to drive prime mover)
50.4 ...Operates valve which controls flow of liquid
50.5 ...In phase separator
50.6 ..Specific pump structure
50.7 ..Specific conduit, valve, or coupling structure
51.1 .Including cryostat
51.2 ..Utilizing Joule-Thomson effect
51.3 ..Helium-type
52.1 .Spraying of cryogen
53.1 .Underground or underwater storage
53.2 .Storage in modified vehicle (e.g., ship, truck, etc.)
54.1 .Cryogen stored in both phases (e.g., as slush or gel)
54.2 .Controlled conversion of solidified gas to another phase
54.3 .Storing solidified gas
55.5 LOW PRESSURE COLD TRAP PROCESS AND APPARATUS
56 PROCESSES
57 .Suspending in upwardly directed current
532 .Fractionally solidifying a constituent and separating the same
533 ..Including direct contact with added refrigerant
534 ...Liquid refrigerant converted to vapor phase during cooling
535 ....Spent refrigerant vapor used in direct contact to melt solidified component or heat product liquid
536 ...Refrigerant remains liquid during cooling
537 ..Utilizing a constituent of the original mixture or solution as refrigerant
538 ..Solidifying or purifying in a pulsed column or using sonic vibration
539 ...With control of pulsed column process parameter
540 ..With measured parameter responsive control
541 ..With separated constituent recycle
542 ..Using melted solid to wash solidified constituent
543 ..With squeezing or compression of solidified component
544 ..With stirring, agitating or scraping of the solidification zone
545 ...With externally scraped drum or helix or screw
59 .Accumulating holdover ice in situ
60 .Packaging
61 .Utilizing motion of vehicle
62 .Treating an article

PROCESSES
.Treating an article
63 ..Moving through cooling zone during cooling
64 ..By contacting with liquid
65 ..Diverse sequential temperatures, e.g., precooling
66 .Congealing flowable material, e.g., ice making
67 ..With filtering or gravitational separating
68 ..Agitating
69 ...Introducing gas, e.g., air
70 ....By injecting
71 ..Removing product from congealing surface
72 ...Flexing supporting surface
73 ...By heating
74 ..Spraying or dripping
75 ..Sequential stages, e.g., composite block making
76 .With preliminary refrigerant manufacturing
77 .Assembling, charging, or repairing of refrigeration producer
78 .Deodorizing, antisepticizing or providing special atmosphere
79 .Exchanging heat between plural systems, e.g., disparate
80 .Defrosting or frost inhibiting
81 ..By utilizing working fluid of refrigeration producer
82 ..By utilizing fluid strange to system
83 .Preventing slugging to compressor
84 .Lubricant handling
85 .Separating or preventing formation of undesirables
86 .Reducing pressure on compressed gas
87 ..Converting energy of expansion to mechanical movement
88 ...With reheat of gas stream
89 .Circulating external gas
90 ..With reheating
91 ..With adding of moisture
92 ...With removing of moisture
93 ..With removing of moisture
94 ...By sorption
95 ..Plural cooling, e.g., precooling by exhaust
96 ..Indirect cooling using closed circuit heat transfer fluid
97 ..Combining streams having diverse temperatures
98 .Fluid external of refrigeration producing cycle
99 ..Indirect by using heat transfer fluid external of cycle
100 .Vacuumizing an open outlet chamber
101 .Evaporation induced by sorption
102 ..Using diverse refrigerants
103 ..With modulated flow rate of fluid
104 ...By varying heat input or output
105 ...Varying non-refrigerant fluid flow
106 ..Intermittent operating of generation and sorption cycle
107 ..With absorption liquid circulation aided by system generated pressure
108 ..With liquid refrigerant transfer to evaporator against gravity
109 ..Cooling by evaporation of refrigerant from sorption solution
110 ..With diffusion of refrigerant into inert gas
111 ...With forced circulation between evaporator and sorber
112 ..Utilizing particular refrigerant and/or sorbent materials
113 .Transferring heat between diverse function portions of refrigeration cycle
114 .Employing diverse materials or particular material in refrigeration circuit
115 .Compressing, condensing and evaporating
116 ..Utilizing motive energy of fluid to compress
117 ..Dividing refrigerant flow, e.g., bypass parallel units
118 .Pumping fluid in closed circuit
119 .Condensing and evaporating
120 .Spaced cooling steps
121 .Gas and liquid contact
122 .Combining fluids having diverse temperatures
123 SEPARATOR FOR SOLIDIFIED CONSTITUENT OF LIQUID MIXTURE
124 .With heater for liquid mixture container
125 WITH INDICATOR OR TESTER
126 .Operatively correlated with automatic control
127 .Diverse function indicators or testers
128 .Atmospheric condensation accumulation, e.g., frost
129 .Condition sensing
130 ..External cooled material
131 .Position or extent of motion of movable element
132 AUTOMATIC CONTROL
133 .Responsive to vehicle body motion or traction
134 ..Electrical generator
135 .By congealed removable product condition
136 ..By change of consistency, e.g., viscosity or overrun
137 ..By accumulation of product
138 ...On heat absorber
139 .By accumulation on freezing surface, e.g., ice
140 ..By frost, i.e., atmospheric condensate
141 .Of closed system sorbent type
142 ..Discontinuous operation of refrigerant or sorbent container unit
143 ...Of intermittent generator-sorber unit
144 ....Plural unit sequence or alternation
145 .....Serially connected type
146 ....Of cooling fluid
147 .....Including sorbent refrigerant flow
148 ..Of heating means
149 .Withdrawing or adding refrigerant from or to normally closed system
150 .Preventing, removing or handling atmospheric condensate
151 ..Defrosting
152 ...Limited area, e.g., preferred zone
153 ...By storage compartment closure actuated means
154 ...By energy input actuated means
155 ...Including time or program actuator
156 ...By temperature
157 .Time or program actuator
158 ..Time delay of condition sensing or control operation
159 .Selective heating or cooling
160 ..Reversible cycle machine
161 .With correlated manual or external operator and condition sensing means, e.g., cutoff or reset
162 ..Manual initiate with sensor terminate
163 ..Selective
164 ..Manual reset or sensor operates additional element
165 .Solidified gas
166 ..Diverse control or response

	AUTOMATIC CONTROL
	.Solidified gas
167	..Of heater, heat transmitter or secondary fluid
168	..By temperature
169	.Vacuumized chamber with open outlet
170	..Evacuating means, e.g., jet pump
171	.Gas-liquid contact cooler, fluid flow
172	.Air compessor, cooler and expander
173	.Of external fluid reheating
174	.Trapping and discharging refrigerant batches
175	.Diverse, cascade or compound refrigeration-producing system
176.1	.Humidity sensor
176.2	..Having defrost control related to humidity
176.3	..Controlling variable compressor capacity
176.4	..Controlling gas-liguid contactor for air
176.5	..Control of air heater, e.g., reheat pump
176.6	..Plus air temperature sensor exerting a control
177	.Of external fluid or means
178	..Diverse control or response
179	...Plural external fluids or means controlled
180	...External fluid and refrigeration producer
181	....Condenser cooling fluid flow
182	....Sequential
183	..Cooling fluid for heat rejecter, e.g., condenser
184	...By refrigerant
185	..Indirect heat transfer liquid, e.g., brine
186	..Air controller or director
187	...Damper between storage compartments
188	..By lever, e.g., float-controlled valve
189	..By fluid flow, e.g., check valve
190	.Refrigeration producer
191	..Of or by jet-type compressor
192	..Lubrication
193	...Of or by compressor
194	...Lubricant aspirator in evaporator liquid level control chamber
195	..Impurity removal
196.1	..Bypass, e.g., compressor unloading
196.2	...For plural compressor cylinders
196.3	...Direct bypass of compressor
196.4	...Condensor bypass
197	...Of expansion zone
198	....Of serially arranged evaporator
199	....Through an evaporator, i.e., parallel
200	.....Individual flow controllers and sensors
201	..By external cooled liquid or holdover
202	..Including external thermal source modifying sensor action
203	..Plural refrigerating producing elements and plural sensors
204	...Including expansion valve or variable restrictor
205	....Plural variable restrictors in flow line
206	.....High and low side
207	..Diverse function refrigeration elements controlled by single sensor
208	..Single refrigeration producer controlled by plural sensors
209	...Compensating or modifying
210	....Expansion valve or variable restrictor
211	.....External condition sensor
212	.....Plural sensors at low side
213	...Alternative or selective sensors
214	..Single sensor mounted or formed to respond to plural conditions, e.g., compensators
215	...Controlling compressor or its drive, e.g., torque or speed
216	..Of or by evaporation zone
217	...Back flow or pressure regulator
218	...Valve or restrictor by liquid lever
219	....Low side float
220	.....Float chamber at suction line
221	......Valve isolated from float chamber
222	...Of expansion valve or variable restrictor
223	....By external condition
224	....By condition at low side
225	.....At or beyond evaporator outlet, i.e., superheat
226	...Compressor or its drive controlled
227	....By conducted evaporator temperature
228.1	..Compressor or its drive controlled
228.2	...For ice or ice cream maker
228.3	...By refrigerant pressure
228.4	...By variable speed motor or pulley type mechanism
228.5	...By variable compressor output, e.g., unloading, staging, etc.
229	...By external cooled gas
230	...By condition of power source
231	TIME OR PROGRAM ACTUATOR
232	.Closed system sorbent type
233	.Congelation product maker
234	.Defrosting
235	RINK
235.1	UTILIZING SOLAR ENERGY
236	WITH ALTERNATELY USABLE ENERGY SOURCES
237	SEPARABLE AMBULANT COOLED ENCLOSURE AND POWER OR COOLING SOURCE
238.1	DISPARATE APPARATUS UTILIZED AS HEAT SOURCE OR ABSORBER
238.2	.With vortex tube, thermoelectric, Stirling or air cycle
238.3	.With sorption
238.4	.With power vapor generator
238.5	.With distillation, ice maker, or freeze separation
238.6	.With vapor compression system
238.7	..Reversible, i.e., heat pump
239	WITH VEHICLE FEATURE
240	.Ship
241	.Utilizing motion of vehicle
242	..Axle drive
243	.Vehicle contained common power supply
244	.Occupant-type vehicle
245	.Melt control
246	DISPLAY TYPE
247	.With means dispersing or evaporating liquid into atmosphere
248	.Means removing or preventing condensate on transparent panel
249	.With feature extraneous to cabinet or cooler
250	.With material conveyer or transporter, e.g., for ice or goods
251	.Stepped, e.g., shelves
252	.Plural storage compartments
253	..Formed by hollow imperforate cooled partition
254	..Including nondisplay storage compartment
255	.With air controlling or directing means
256	..Spaced elongated air inlet and outlet type, e.g., air curtain
257	.Bottom cooling means, e.g., cooled floor
258	WITH MEANS FORMING NON-COOLED WORK SURFACE, E.G., COUNTER, TABLE, SIDEBOARD

259.1	STRUCTURAL INSTALLATION
259.2	.With electrical component cooling
259.3	.With body applicator
259.4	.With evaporative type cooler
260	.Geographic, e.g., subterranean feature
261	.Article of furniture, e.g., bed cover or canopy
262	.Window connected or mounted
263	.Vertical partition or wall mounting feature
264	WITH ILLUMINATING OR RADIANT ENERGY MEANS
265	COMPARTMENT ACCESS OR USE AND AIR BLOCKING
266	.Including article conveyer or transporter
267	INTERLOCKED DIVERSE FUNCTION ELEMENTS
268	VACUUMIZED CHAMBER WITH OPEN VAPOR OR GAS OUTLET
269	.Including sorbent agent
270	.System, i.e., multiple treating or fluid handling means
271	ATMOSPHERE AND SORBENT CONTACTING TYPE
272	WITH MEANS PREVENTING OR HANDLING ATMOSPHERIC CONDENSATE RELATIVE TO HEAT ABSORBER
273	.Operating on insulation, e.g., vent to refrigerated compartment
274	.With means to add moisture to cooled space
275	.By external heater
276	..Heating principal heat absorber, e.g., evaporator
277	.Means utilizing heat developed by refrigeration producer
278	..Bypassing or reversing internal fluid flow
279	..Means conducting atmospheric condensate to heat rejecter
280	...Pump or thrower for condensate
281	.With porous or foraminous atmospheric condensate receiver
282	.Means contacting heat absorber with fluid strange to system
283	.Moisture condensing means distinct from principal heat absorber
284	.Wiper or scraper
285	.Retainer or flow director for atmospheric condensate
286	..Adjustable position or selectively usable
287	..Wetted inner surface type refrigerator
288	..With flow director directing condensate to retainer
289	...Retainer exterior of refrigerated space
290	..Plural distinct flow directors acting in parallel
291	..Condensate retainer
292	WITH MEANS FOR CHARGING CLOSED REFRIGERATION PRODUCING SYSTEM
293	HAND MANIPULABLE TOOL
294	CONTAINER CUTTER OR PUNCH-TYPE OPENING MEANS
295	RESILIENTLY SUPPORTED POWER AND/OR HEAT REJECTING ELEMENT
296	MUFFLER OR SOUND DAMPENER
297	EXTERNAL SUPPORT FOR REFRIGERATOR HOUSING
298	WITH REPAIR, ASSEMBLY OR DISASSEMBLY MEANS
299	.Detachable valve and coupling
300	.Means releasing mold from support
301	..With grid or cube release means
302	.Sliding or rolling on guide means
303	WITH CLEANING MEANS FOR APPARATUS
304	MATERIAL COOLING MEANS INCLUDING GAS-LIQUID CONTACTOR
305	.Cooling heat rejector of refrigeration producer
306	.Means feeding gas into pressurized receiver
307	.Submerged gas inlet
308	..Drop tube type
309	.Gas recirculated relative to enclosure
310	.Fluid recirculating means
311	.Diverse treating means
312	..Ice holder and ice melt-gas contactor
313	...Elongated vertical passage for melt and air
314	.With gas forcing or directing means
315	.Porous wall liquid container or flow line
316	.Porous cover member
317	WITH SEPARATOR-CLARIFIER FOR COOLING FLUID OR ICE MELT
318	.For liquid
319	..Isolated from coolant
320	WITH COMMINUTOR OR CUTTER
321	.Including means utilizing product
322	DISPARATE SERIALLY ARRANGED PRODUCT TREATING APPARATUS
323.1	WITH INTERNAL-COMBUSTION ENGINE
323.2	.With cooling apparatus other than gas compressor
323.3	.With electrical motor drive
323.4	.With clutch or variable speed transmission controlling compressor drive
324.1	REVERSIBLE, I.E., HEAT PUMP
324.2	.With cooling apparatus other than gas compressor
324.3	.With product treatment
324.4	.With refrigerant collection and intermittent discharge
324.5	.With atmospheric condensate removal or prevention
324.6	.With flow control or compressor details
325	.External fluid flow reversed
326	CONVERTIBLE
327	.Storable or variable capacity ice bunker
328	..Bunker wall movable to chamber wall
329	.Movable partition within cooled compartment
330	WITH REFRIGERANT OR COOLANT MANUFACTURING MEANS
331	COMBINED
332	DIVERSE SYSTEMS, E.G., ICE AND MECHANICAL
333	.Primary and secondary dependent circuits
334	..Secondary evaporator contacting inner liner, e.g., two zone cold wall
335	PLURAL PAIRED DIFFERENT FUNCTION REFRIGERATION PRODUCING ELEMENTS, E.G., CASCADE
336	MATERIAL HANDLERS OF DIVERSE TYPES
337	COOLED ARTICLE STORAGE COMPARTMENT AND COOLED ISOLATED MATERIAL HANDLER
338	.Liquid container or flow line within cooled enclosure
339	..Including inlet flow line connection
340	MEANS PRODUCING SHAPED OR MODIFIED CONGEALED PRODUCT
341	.With article press means
342	.With means for working congealing material, e.g., beater
343	..Diverse blades
344	.With product receiving and storing means
345	.Freezing surface mounted for movement during freezing
346	..Drum
347	.With raw material projector, e.g., spray

MEANS PRODUCING SHAPED OR MODIFIED CONGEALED PRODUCT
348 .With means to precool or recirculate raw material
349 .Thawing means
350 ..Attached to hand-manipulable mold
351 ..Electrical heater
352 ..Means using refrigerant or coolant as heating fluid
353 .Heat absorber with product remover
354 ..Moving scraper
356 .Mold with means to absorb heat, e.g., brine tank
371 PORTABLE, COMMODITY-CONTAINING
372 .Mutually supported commodity and solid coolant
373 LIQUID CONTACTING DISCRETE COMMODITY
374 .With article conveyer or transporter
375 ..With liquid recirculating means
376 .With liquid recirculating means
377 ARTICLE HOLDER MOUNTED ON DOOR OR PIVOTED PARTITION
378 ARTICLE MOVING MEANS
379 .Solid refrigerant
380 .Continuous longitudinal-type conveyor
381 .Rotary about fixed axis, e.g., rotary shelf or scraper
382 .Drawer, tray or track-guided type; horizontally movable
383 MOVABLE THERMAL MEANS VARYING HEAT TRANSMISSION
384 COOLER UTILIZING SOLIDIFIED GAS
385 .Sublimed gas entering insulation or within hollow wall
386 .Means cooling withdrawable liquid
387 .External as circulator or director
388 .Means dispersing sublimed gas into cooled enclosure
389 WITHDRAWABLE LIQUID, E.G., DISPENSER
390 .With plural liquid outlets or sources, e.g., distributing system
391 .With withdrawn liquid receiver
392 .With agitator for withdrawable liquid
393 .With intermediate indirect heat transfer fluid container or conductor
394 .Refrigerant evaporator surrounding or within a container
395 ..Between cooled liquid container and insulation
396 .In indirect heat exchanging relationship to coolant
397 ..Barometric feed-type liquid container
398 ..Cooled liquid container supporting ice
399 ..Helical or spiral coil
400 ..Ice holder and cooled liquid container concentrically nested
401 AIR COMPRESSOR, COOLER AND EXPANDER TYPE
402 .Motor-type expander
403 ..Reciprocating element-type motor, e.g., piston
404 GAS CONTROLLER OR DIRECTOR
405 .Isolated gas compartment, e.g., cold air jacket
406 .Gas passage over or through indirect heat-transfer container or holdover
407 .Cooled gas directed relative to cooled enclosure
408 ..With adjustable gas flow controller
409 ...For exterior port
410 ..Exterior port, i.e., ventilating
411 ...With additional means causing flow, e.g., blower
412 ...Inlet and outlet ports
413 ..Means verging gas streams within storage space
414 ...Gas flow forcing means
415 ...Space cooler units in separate streams
416 ....Above storage space and adjacent opposed walls
417 ..With imperforate partition forming storage compartments
418 ..Foraminous gas distributor flow connected to cooler unit
419 ..Gas forcing means
420 ..Directed relative to ice container
421 ...Foraminous wall or bottom ice container
422 ....Melt collector over storage space
423 .....Storage space along container side
424 ...Gas flow passage means under ice container
425 .Gas flow through ice compartment contacting ice
426 .Gas forcing means, e.g., cooler unit
427 ..Plural gas inlets, e.g., recirculated and fresh air
428 ..Means directing gas over heat rejector
429 ...Unitarily driven plural blowers
430 INTERMEDIATE FLUID CONTAINER TRANSFERRING HEAT TO HEAT ABSORBER OR HOLDOVER
431 .Side-by-side or superimposed cooled compartments
432 ..Different temperature arrangements
433 ..With top access to each compartment, e.g., ice cream cans
434 .Flow line connected transfer fluid supply and heat exchanger
435 .With indirect fluid pump or agitator
436 .Connected distinct sections for indirect fluid
437 .Non-liquid heat accumulator
438 .Forming cooled storage compartment
439 .Unitary jacket surrounding coolant line
440 COOLED ENCLOSURE
441 .Plural cooled compartments
442 ..Coolers in parallel for plural compartments
443 ..Cooler integral with or forming dividing wall
444 ...Exterior wall
445 ...With non-dividing cooler
446 ...Forms plural sides of a storage compartment
447 ..Insulating dividing wall
448 .Movable unit of refrigeration producing assembly
449 ..Unit includes movable wall section, e.g., door
450 ...Unit includes condenser fan
451 .Flowing coolant container covered by insulation means or within hollow wall of enclosure
452 .With heat rejecting element enclosure or cooling feature
453 ..Heat rejector contacting enclosure wall
454 ..With ventilation means therefor
455 ...Forced circulation
456 ...Vertical flue venting bottom compartment
457.1 .Portable receptacle
457.2 ..With holdover material
457.3 ...Drinking container
457.4 ...For beverage receptacle
457.5 ....For multiple receptacles
457.6 ..Cooled serving dish
457.7 ..Picnic/lunch box type cooler
457.8 ..Wine server/cooler
457.9 ..Cooled by means other than ice (e.g., mechanical, electrical, absorption, cryogenic, etc.)
458 .Access surface open to atmosphere
459 .Ice support, e.g., container

	COOLED ENCLOSURE
	.Ice support, e.g., container
460	..Flowing ice melt heat exchanger within cooled enclosure
461	...Lateral ice melt distributor
462	..Valve or trap within ice melt flow line
463	..Partially surrounding storage compartment
464	..Top access to ice compartment
465	.With particular internal element support
466	..Resilient
467	REFRIGERATION PRODUCER
468	.With lubricant handling means
469	..Of unitary motor-compressor in casing
470	..Lubricant separator
471	...At evaporator or evaporator-discharge line
472	....With lubricant heating means
473	...At condenser or receiver
474	.With refrigerant treater
475	..Means for discharging impurity from system
476	.Sorbent type
477	..Absorber-still, e.g., intermittent
478	...Evaporator-condenser unit
479	...With means returning sorbent from evaporator
480	...With solid sorbent
481	...With sorber-generator cooling means
482	....Internal liquid flow to external cooler
483	..Pump means forcing gas or vapor relative to sorber
484	..Vapor-liquid contact in reabsorber forming liquid refrigerant
485	..Means causing cooling fluid contact with sorber and/or condenser
486	..Means cooling liquid refrigerant flow line to evaporator
487	..Internally generated pressure or capillary means moving sorption liquor
488	...Transfer vessel, e.g., liquid trap
489	..Means attempering flow line between sorber and generator
490	..Inert gas
491	...Gas-liquid contactor within inert gas circuit
492	....In evaporator
493	...Means cooling inert gas flow line from sorber to evaporator
494	..Particular gas-liquid contact in sorber
495	..Sorbent vapor separator between generator and condenser
496	...Submerged gas-liquid contact means
497	..With means to enhance separations in generator
498	.Compressor-condenser-evaporato r circuit
499	..Unitarily movable connected units
500	..Jet powered by circuit fluid
501	..External fluid actuates compressor and exchanges heat
502	..Diverse fluids
503	..With liquid trap or disperser in suction line
504	..Means to apportion refrigerant to evaporator
505	..Cooling motor and/or compressor by refrigerant
506	..External cooling fluid contacts heat rejector
507	...Air cooled
508	....Motor-compressor in common housing
509	..Condensed liquid receiver, e.g., surge tank
510	..Plural compressors or multiple effect compression
511	..Fixed restrictor
512	.Distinct vapor liquid separator and separated liquid recycle
513	.Heat exchange between diverse function elements
515	.Evaporator, e.g., heat exchanger
516	..Enclosure forming
517	...With closure
518	...Surrounds inner container
519	...Plural distinct sections or diverse zones
520	....Shelf is evaporator
521	...Shelf, shelf or receptacle support
522	....Integral or attached shelf
523	...Corrugated or embossed wall
524	..Plural distinct sections
525	...With particular flow distributor to sections
526	...Serially connected
527	..Flow controller or boiling expeditor
528	...Adjustable controller
529	REFRIGERANT OR COOLANT, STORER OR HANDLER
530	.Envelope type
531	MISCELLANEOUS
	******************************
	DIGESTS
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DIG 1	Radiant cooling
DIG 2	Refrigerant pumps
DIG 5	Aircraft cooling
DIG 7	Vacuum plates
DIG 10	Tool cooling
DIG 11	Hydrator receptacles
DIG 13	Insulation
DIG 16	Roof and ceiling located coolers
DIG 17	Condenser pressure control
DIG 19	Ionic Thompson effect
DIG 20	Materials used to prevent corrosion in refrigeration system
DIG 21	Evaporators where refrigerant covers heat exchange coil
DIG 22	Free cooling
DIG 23	Explosive digest

CLASS 63 JEWELRY

1.1	COMBINATION ARTICLES
2	MISCELLANEOUS
3	BRACELETS
4	.Chain
5.1	.Expansible
5.2	..Continuous coil spring
6	..Two part
7	.Single hinge
8	..Spring
9	.Multiple hinge
10	.Swiveled
11	.Resilient
12	EARRINGS
13	.Pendant jewel
14.1	.Nonpiercing
14.2	..Having guard
14.3	..Having clamp pad
14.4	..Pivoted arm clamp
14.5	...Spring actuated
14.6	..Screw-type clamp
14.7	..Slide clamp
14.8	..One-piece clamp
15	FINGER RINGS
15.1	.Plural, separable
15.2	..With separate connector
15.3	..With integral interlock
15.4	...Nested
15.45	.Contractable
15.5	.Variable internal size
15.6	..By internal abutment or element
15.65	..Plural adjustment
15.7	.Peripheral or segmental sections
15.8	.Shield
18	LOCKETS
19	.Hinged covers
20	ORNAMENTAL PINS
21	WATCH AND CHAIN ATTACHMENTS
22	.Bars
23	.Charms
24	.Safety watch guards
25	..Automatically operated
26	GEM SETTING
27	.Crown
28	.Multiple
29.1	.Detachable
29.2	..Magnetic
30	..Exhibiting
31	.Movable
32	GEMS
	******************************
	DIGESTS
	******************************
DIG 1	Adhesive jewelry
DIG 2	Perfumed jewelry
DIG 3	Plastic jewelry

1 FILAMENT OR FIBER MAKING
2 .Processes
3.1 ..With coating
3.11 ...Having components with different refractive indices, (e.g., optical fibers, optical wave guides, etc.)
3.12 ....By reacting metal compound, chemical vapor or soot deposition, or using plasma
3.13 ....Multiple crucible process
3.14 ....With ion exchange to change refractive index of outer layer
3.15 ....Leaching preform
3.2 ...Glass coating
3.3 ...Metal coating
3.31 ....With vapor deposition of metal compound
3.4 ...Resin, rubber, or asphalt coating
3.41 ....Silicon in coating (e.g., silane, silicone, etc.)
3.42 ....Asphalt coating
3.43 ....Thermosetting resin coating
3.44 ....Thermoplastic resin coating
4.1 ..With joining of fibers or filaments
4.2 ...Having components with different refactory indexes, e.g., optical fiber, etc.
4.21 ....Utilizing preformed fibers or filaments other than for attenuating stock material
4.3 ...Forming and joining in parallel alignment
4.4 ...To form mat
5 ..Fiber formation by utilization of fluid blast
6 ...During slinging or rotary-centrifugal distribution
7 ...Fluid blast comminution of solid filament
8 ..By slinging or rotary-centrifugal distribution
9 .With felting means
10 .With assorting means
10.1 .With winding means
10.2 .With severing means
11.1 .Combined
12 .Means for heating or cooling formed filament or fiber
13 .From rod stock
14 .By slinger and fluid blast means
15 .By slinger
16 .By fluid blast means
17 PROCESS
18.1 .With shaping of particulate material and subsequent fusing of particles
18.2 ..Including flame or gas contact
18.3 ..Employing nonoxide additive
18.4 ..With treatment subsequent to fusing
19 .Slag, utilization
20 ..Foaming of slag
21.1 .Self-supporting particle making (e.g., bead, ball, granule, etc.)
21.2 ..By molten glass comminuting
21.3 ..Spheroidizing or rounding of solid glass particles
21.4 ..Hollow or porous particle
21.5 ..With mechanical shaping or subdividing
22 .With pore forming in situ
23 .With destruction or delamination of transitory attached or associated separate material
24 .Utilizing parting or lubricating layer
25.1 ..Providing a gaseous layer between glass and apparatus
25.2 ...Sheet
25.3 ....Formed from molten glass
25.4 ....Reshaping
26 ..Coating of apparatus
27 .Repairing or cleaning of apparatus; or batch dust prevention or control
28 .With glass reclaiming, repairing or crack run interruption
29 .With testing or inspecting
30.1 .With chemically reactive treatment of glass preform
30.11 ..To enhance the ability to darken or change color in response to radiation exposure (e.g., photochromic)
30.12 ..To hydrate the glass
30.13 ..With metal ion penetrating into glass (i.e., ion exchange)
30.14 ...To temper or strengthen the glass
31 ..By etching or leaching
32.1 .Operating under inert or reducing conditions
32.2 ..With bonding or sealing
32.3 ..With crystallization or photochromism or phase separation
32.4 ..With coating
32.5 ..With forming glass from molten state, with treatment of molten glass, or with drawing of glass in softened state
33 .Devitrifying or vitrifying crystalline glass
34 .With sealing off of gas evacuating opening
35 .With vibrating, oscillating or agitating a preform
36 .Fusion bonding of glass to a formed part
37 ..Lens making
38 ...With bonding of at least three formed parts
39 ...With molding or reshaping of glass to assume shape of configured lens part during bonding
40 ..Dielectric or joule effect heating of work
41 ..With annealing or tempering of glass
42 ..Bonding of sub-assembly with subsequent assembly and bonding (formed parts only)
43 ..By or with coating at joint interface of a formed part prior to bonding
44 ..With embossing or corrugating
45 ..With glass part forming from shapeless molten glass
46 ...With blowing to shape glass
47 ...In mold cavity
48 ....And bonding to part in same mold cavity
49 .....Bonding to metal formed part
50 ...Forming and bonding glass sheet to metal part
51 ....Contacting metal with molten glass prior to forming sheet
52 .....Forming of plural glass sheets
53 ...Forming plural sheets or sheet-like streams from same source
54 ..With reshaping glass preform prior to assembly or subsequent to bonding
55 ...Prior to assembly
56 ..With severing, perforating, or breaking of glass
57 ..Relative rotation of work and heating means
58 ..Of parts having opposed facing areas out of contact, e.g., building blocks
59.1 ..Of glass to metal part
59.2 ...Maintaining cavity in glass
59.21 ....Glass applied in powdered (i.e., frit) form

	PROCESS
	.Fusion bonding of glass to a formed part
	..Of glass to metal part
	...Maintaining cavity in glass
59.22	....Named fusible bonding material employed
59.23	....With firing in vacuum, in inert atmosphere, or in pumped in gas
59.24	....Metal part outside of glass part
59.25	....Metal part inserted through hole or into groove in glass part
59.26	....Metal part forced through or into softened glass part (e.g., pinch sealing, etc.)
59.27	....Metal part coaxial with and inside of glass part
59.28	....Relative movement or manipulation of parts during or immediately preceding fusion
59.3	...More than two parts in overlaying series (noncavity)
59.31	....Metal part inserted through hole or into groove in glass part
59.32	....Metal part forced through or into softened glass part (e.g., pinch sealing, etc.)
59.33	....Relative movement or manipulation of parts during or immediately preceding fusion
59.34	....Metal part outside of glass part
59.35	....Metal part coaxial with and inside of glass part
59.4	...Metal part outside of glass part
59.5	...Glass applied in powdered (i.e., frit) form
59.6	...Metal part coaxial with and inside of glass part
59.7	...Metal part forced through or into softened glass part (e.g., pinch sealing, etc.)
60.1	.With coating
60.2	..Plural diverse layers
60.3	..Organic coating
60.4	..Free metal coating
60.5	..Oxide coating
60.51	...From inorganic metal salt
60.52	...From organic metal compound
60.53	...From inorganic oxides or hydroxides
60.6	..Free carbon containing coating
60.7	..Inorganic metal salt containing coating
60.8	..Silicon containing coating
61	.With wearing away of surface material, e.g., abrading or grinding
62	.Combined
63	.Sequentially forming, reheating and working
64	..Reshaping
65	.Forming and fire polishing or product
66	.Forming product or preform from molten glass
67	..Converting sheet to hollow product or hollow product to sheet
68	..Initial forming of hollow product or preform in mold cavity
69	...With annealing or tempering
70	...With severing of formed product
71	...Spreading of molten glass by rotation
72	...With charging of mold cavity
73	....By suction from upper surface of "pool"
74	.....With sequential blowing in charged cavity
75	....Through orifice in bottom wall of dispenser
76	....With additional diverse shaping step
77	...With additional forming step

78	....Diverse
79	.....Press and blow
80	......In separate lines
81	...By differential gas pressure
82	..Reshaping of hot parison in mold cavity to form hollow article
83	..With positive cooling of product or molten glass at forming area
84	...By direct gaseous contact
85	...Of glass product
86	..Drawing and simultaneously forming hollow stock from molten glass
87	...With additional shaping, or severing, or perforating
88	...Vertically drawing upwardly while applying fluid internally of stock
89	..Forming hollow stock by surface filming
90	..Sheet
91	...With application of lateral tension to edge portion of moving sheet
92	...With smoothing subsequent to sheet formation
93	...With reshaping or surface deformation
94	....Subsequent to formation
95	...With annealing or tempering
96	....Conveying at different rate than speed of formation
97	...With severing or perforating
98	...Simultaneously forming plural separate sheets
99.1	...By or with pouring molten glass onto forming surface
99.2	....Utilizing molten metal forming surface
99.3	.....Maintaining molten metal temperature
99.4	.....Treating or removing impurities in molten metal or glass
99.5	.....Maintaining or adjusting sheet width or thickness
99.6	......By nonmechanical means
100	....Onto moving roll or platen
101	.....Through bite of rolls
102	.Reshaping or surface deformation of glass preform
103	..Utilizing heat shield or heat-sink
104	..With annealing, tempering or fire-polishing
105	..With severing or perforating
106	..Reshaping of planar sheet
107	...By sagging by gravity on mold surface
108	..Reshaping of tubular preform, retaining cavity
109	...During rotation
110	...Utilizing vacuum or gas pressure
111	.Glass preform treating
112	..With severing or preforating
113	...By or with flame
114	..Tempering
115	...Differential or localized
116	...Quenching in liquid bath
117	..Annealing
118	...During conveying
119	....Annealing by direct contact with gaseous heat exchange medium
120	..By flame
121	.Blending of separate molten glass streams
122	.Charging of molten glass into mold cavity
123	..By gravity and severing subsequent to charging mold cavity
124	..By suction
125	.Gathering from upper surface of glass pool
126	.Discharging molten glass downwardly through orifice

PROCESS
.Discharging molten glass downwardly through orifice
127 ..With gob shaping or treating subsequent to discharge through orifice
128 ..With temperature modification at orifice
129 ..Regulating or arresting of flow into or out of orifice
130 ...With or by differential gas pressure
131 ....With segregation prior to discharge
132 ...With segregation prior to discharge
133 .Severing of molten glass stream
134 .Purifying or homogenizing of molten glass
135 ..Melting in separate zone of glass container, e.g., tank furnace
136 ..Fining by heating
137 .Cooling of molten glass
138 ELECTRONIC ENVELOPE HEADER, TERMINAL OR STEM MAKING MEANS
139 .With means inserting wire into glass
140 .By press mold
141 MELT DISINTEGRATOR AND SOLIDIFIER INCLUDING FLUID-MELT CONTACT MEANS
142 PARTICULATE BEAD OR BALL MAKING APPARATUS, E.G., PIN HEADING
143 .By rolling means
144 MEANS SHAPING PREFORM FROM GRANULAR MATERIAL WITH FUSION MEANS
145 PLURAL SOURCES FEEDING DIVERSE GLASS MELTS TO COMMON FORMING MEANS
146 WITH MEANS TO FEED DIVERSE MATERIAL TO GLASS WORKING MEANS
147 .Wire laminating means
148 ..Sheet rolling means
149 ...Sandwiching wire between opposed glass feeds
150 ...Roll coacting with platen
151 ....Embedding means on roll
152 FUSION BONDING MEANS
153 .Concentric body making, e.g., vacuum bottle making, etc.
154 .Glass to metal
155 .Electronic device making
156 .With article molding means
157 MEANS PROVIDING SPECIAL ATMOSPHERE
158 WITH SIGNAL, INDICATOR, INSPECTION MEANS, REGISTER, OR RECORDER
159 WITH APPARATUS SAFETY MEANS
160 CONTROL RESPONSIVE TO CONDITION SENSING MEANS
161 .Glass working fluid or treating fluid control
162 .Temperature or heater control
163 .Speed control
164 .Molten glass dispenser or gatherer control
165 WITH REJECT CATCHER, DEFLECTOR OR HOLDER
166 PERFORATOR FOR ARTICLE OR PREFORM
167 CONVERTIBLE TO DIFFERENT OPERATION
168 WITH POSITIVE CLEANING MEANS FOR APPARATUS
169 WITH MEANS PROVIDING PARTING MATERIAL
170 WITH APPARATUS LUBRICATING MEANS
171 WITH REPAIR, ASSEMBLY OR DISASSEMBLY MEANS FOR APPARATUS
172 .To replace worn or damaged parts
173 .To provide alternately used parts
174 WITH MECHANICAL CUTTER, SCORER OR SCRIBER FOR ARTICLE OR PREFORM
175 .With annealing means
176 .Running length
177 .Associated with article mold
178 WITH AGITATOR FOR MOLTEN OR SOFT GLASS
179 .Delivery area associated
180 ..Orifice associated
181 COMBINED
182.1 WITH FLUID SUPPORT FOR ARTICLE OR PREFORM
182.2 .Gaseous support
182.3 .Means for treating or maintaining molten metal
182.4 .Including preform width maintaining or stretching mean
182.5 .Structure or composition of lining material or arrangement with shell
183 EXTRUSION DIE FORMER WITH UPSTREAM DISCHARGE ASSISTANT
184 MEANS CHARGING CONTINUOUS FILM OR STRIP TO SEPARATE AND DISTINCT FORMER
185 .Into sheet rolling means
186 ..With auxiliary heating or cooling means upstream of rolling means
187 MEANS DRAWING TUBE OR ROD STOCK FROM BATH
188 .Drawing vertically upward
189 ..With product take-down means
190 ..Means correlating air supply and bait movement
191 ..With internal core or centering means
192 ..Air injection means extending through bath
193 MEANS DRAWING SHEET FROM BATH
194 .With annealing or tempering means
195 .Means dividing and recombining melt in draw chamber
196 .Vertically upwardly with means bending sheet to horizontal
197 ..With moving endless drawing or flattening table
198 ..With coacting roll contacting surface of supply bath
199 .With width maintaining and/or lateral stretching means
200 ..Stretching means
201 ..Adjustable width maintaining means
202 .With pivoted lip tile
203 .With auxiliary heating means for draw pot or drawing chamber
204 .With cooling means in drawing chamber
205 .With radiant heat reflector in draw pot or drawing chamber
206 .With skimmer
207 GOB CHARGING MEANS WITH SHAPE IMPARTING RECEPTACLE MEANS
208 .With glass treating means
209 .By fluid pressure discharge assistant means
210 .By suction gatherer mounted above supply
211 ..With means correlating movable pool-closure
212 ..Gatherer moving transversely from orbit of traveling mold, i.e., ram type
213 ..Mold is gatherer
214 ...Parison mold
215 ....With plunger movable relative to mold
216 .....With separate, distinct blow mold
217 ......Diverse molds traveling concentric orbits
218 ....Finish mold pivotally mounted below parison's orbit
219 ....With blow means
220 .....Sequentially used, distinct molds
221 .By delivery from tank feeder
222 ..To parallel mold tables
223 ..With press means
224 ...With diverse molding
225 ..With gob guide means
226 .With press means
227 DIVERSE DISTINCT GLASSWORKING APPARATUS
228 .Marvering means with blow means

DIVERSE DISTINCT GLASSWORKING APPARATUS
229 .Press means with blow means
230 ..With reheating means therebetween
231 ..Blank mold encaseable in finish mold
232 ..With mold inverting means
233 ...With pneumatic charge compacting means
234 ....Settle-blow means
235 ...Neck mold inverting
236 ....With parison mold inverting
237 ..Diverse molds traveling concentric orbits
238 **...With diverse motion of mold**
239 ...With movable work transfer means between orbits
240 ..Plural traveling mold carriers
241 ...With movable intermediate work transfer means
242 ..Reciprocating mold bottom
243 PLURAL DISTINCT GLASSWORKING APPARATUS
244 .Spaced preform reheating means with reshaping means
245 .Sheet rolling means
246 .Plural presses
247 ..Plungers sequentially coacting with same mold
248 ..With relative rotation between plunger and mold during withdrawal
249 ...Plungers oppositely disposed
250 ..Plungers oppositely disposed
251 ..Plungers orbiting above orbiting molds
252 .Fire-polishing means
253 ROLLING MEANS TO FORM SHEET OR STRIP
254 .With treating means
255 .With corrugating or surface imprinting means
256 .Roll coacting with planar platen
257 ..Reciprocating platen
258 SHEET CASTING AND RECEIVING MEANS
259 .With pot handling means
260 WITH MEANS ABOVE MOLD TO TAKE-OUT OR TRANSFER PRODUCT
261 BLOWING MEANS WITH BLOW MOLD
262 .With treating means
263 .Combined with vacuum means
264 .Traveling mold
265 ..With means heating and/or cooling apparatus
266 .Mold rotary about own axis
267 .With means heating and/or cooling apparatus
268 PREFORM RESHAPING MEANS WITH TREATING MEANS
269 GLASSWORKING OR PREFORM BY OR WITH REHEATING MEANS (E.G., FLAME SEVERING)
270 .Envelope tipping off type
271 .Heating means movable relative to work during shaping operation
272 .Work, workholder or tool correlated burner control
273 .Planar sheet preform
274 .With spaced preheating means
275 .Mechanical means to reshape preform
276 ..Tubular type preform
277 ...By resizing mandrel
278 ...Means supporting and orbiting preform
279 ....Preform supported horizontally
280 ....Preform supported vertically
281 ...By bending means
282 ...By internal forming means
283 ...By stretching means
284 .Fire-polishing means
285 .To reshape preform by flame pressure or gravity
286 PREFORM RESHAPING MEANS
287 .Sheet bending mold
288 ..With heat shield or heat sink
289 ..Including auxiliary movable sheet support or movable sheet guide means
290 ...Movable mold section
291 ..Having movable section
292 .Cylindrical preform
293 ..By threading means
294 ..By expansible mandrel
295 ..By crimping means
296 ..By internal and external forming means
297 ...Both rotary driven
298 ...Rotary internal, stationary external
299 ..By flaring means
300 MEANS APPLYING PNEUMATIC PRESSURE INSIDE OF DISCRETE CHARGE, I.E., BLOW MEAN
301 .With selective control means
302 ARTICLE FORMING MEANS UTILIZING MOLD MOTION, E.G., CENTRIFUGAL CASTING
303 GOB SHAPING OR TREATING MEANS DOWNSTREAM OF GOB SEVERING MEANS
304 WITH GOB HANDLING MEANS
305 PRESS MOLDING MACHINE
306 .With product treating means
307 .Mold ring or baffle laterally and movably supported
308 .Plunger coacting with successively presented molds
309 ..Relative rotation between plunger and orbiting mold
310 ...Independent dies actuated by common plunger
311 ..Means providing orbiting mold with diverse motion
312 ..Mold orbiting about horizontal axis
313 ..Vertically segmented orbiting mold
314 .Plural motors coaxial with plunger
315 .With core drawing means
316 .With means to rotate plunger during withdrawal
317 .Means reciprocating or oscillating female mold member
318 .With means varying plunger pressure during pressing
319 .With means for heating or cooling apparatus
320 .Selectively operated plural plungers
321 .Plunger penetrating superimposed mold table
322 .With means to adjust plunger stroke
323 PRODUCT OR PARISON CENTERING MEANS, OR MOLD AND/OR CORE ALIGNING MEANS
324 MOLTEN GLASS DISPENSING MEANS (E.G., FEEDER OR LADLE)
325 .Discharge orifice below melt level
326 ..With auxiliary heating or cooling means
327 ...At orifice
328 ..Plural plunger-type discharge assistants or discharge orifices
329 ..By differential gas pressure
330 ..By reciprocating plunger-type discharge assistant
331 ...With diverse motion
332 ...With severing means
333 .Discharge lip with discharge assistant
334 WITH MOLTEN GLASS CHARGE CUTTING OR SCRAPING MEANS
335 GLASS FURNACE WITH FURNACE CHARGING MEANS
336 GATHERING OR DRAWING POOL TYPE FURNACE
337 .Supplemental heating or heat exchange means associated with pool
338 ..With deputer, draw ring or draw shield
339 .Separate and distinct means defining pool (e.g., floor-supported dam)
340 ..Movably mounted
341 ..Cascadingly connected
342 ..By bridge
343 ...Floating bridge

GATHERING OR DRAWING POOL TYPE FURNACE
.Separate and distinct means defining pool (e.g., floor-supported dam)
344 ..With deputer, draw ring or draw shield
345 ..By suspended baffle
346 GLASS CONDITIONING CHANNEL SECTION
347 MELTING POT OR FURNACE WITH STRUCTURALLY DEFINED DELIVERY OR FINING ZONE
348 PRODUCT COOLING MEANS, E.G., TEMPERING
349 .With preceding reheater
350 ..Plural spaced reheaters
351 ..Plural spaced cooling means
352 DRAWING BAIT
353 .With air supply means
354 ..With heating or cooling means
355 MEANS HEATING OR COOLING APPARATUS
356 .Internally positioned
357 MOLD WITH SEPARATING MEANS OR CLAMPING MEANS
358 .Core drawing means
359 .With mold support or carrier
360 ..Pivoted mold sections
361 MOLD WITH SUPPORTING OR CARRYING MEANS
362 PLUNGER
374.1 APPARATUS MADE OF SPECIAL MATERIAL
374.11 .Metal-nonmetal composite
374.12 .Metallic
374.13 .Ceramic material
374.14 .Asbestos containing
374.15 .Elemental carbon containing (e.g., graphite, charcoal, etc.)
375 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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900 DRYING, DEHYDRATION, MINIMIZING OH GROUPS
901 LIQUID PHASE REACTION PROCESS

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DIGESTS

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DIG 1 Lens envelope
DIG 3 Cracked glass
DIG 4 Electric heat
DIG 5 Foil glass
DIG 6 Glass electrode
DIG 8 Quartz
DIG 9 Tube
DIG 10 Stemware
DIG 11 Encapsulating
DIG 12 Reed switch
DIG 13 Computer control
DIG 15 Nonoxygen containing chalogenides
DIG 16 .Optical filament or fiber treatment with fluorine or incorporating fluorine in final product

CLASS 66 TEXTILES, KNITTING

DECEMBER 1990

1 R	MISCELLANEOUS
1 A	..Hand knitting and crotcheting aids
1.5	REKNITTING
2	DARNING
3	LOOPER PIN AND HOOK
4	.Hand
5	UNITED NEEDLE KNITTING AND INDEPENDENT NEEDLES
6	.With independent needle knitting
7	INDEPENDENT-NEEDLE MACHINES
8	.Circular
9 R	..Incorporating unknit or fleece-type materials
9 A	....Core covering
9 B	....With carding
10	...Warp and weft type
11	...Laterally displaceable needle
12	...Varied needle
13	..Special-type machines
14	...Double-ended needle
15	...Swing jack needle, dial and cylinder
16	...Axially reciprocating actuator
17	..Multiple-needle bank
18	...Opposed conical
19	...Dial and cylinder
20	....Varied needle, frequently with special stitch
21	....Pocket welt, frequently with special stitch
22	.....Two-ply simultaneously knit
23	.....With stitch-length variation
24	....To or from rib or rib change
25	....Special stitch
26	.....Racking
27	....Stitch-length variation
28	....Dial and cylinder connections
29	...To or from rib or rib change
30	...Narrowing and widening
31	..Dial
32	...Narrowing and widening
33	....Laterally displaceable needle
34	..Conical
35	..Laterally displaceable needle
36	...Special stitch
37	...Narrowing and widening
	..Varied needle
38	...Separate cam paths
39	....Narrowing and widening
40	...Special stitch
41	....Welt or antiravel
42 R	....Multifeed
42 A	......Eyelet prevention
43	.....Suture forming
44	....With varied latch
45	...Hand coverings, forming
46	...Narrowing and widening
47	....With needle-actuated pickers
48	.....Rotary needle carrier
49	...Splicing
215	..Special stitch
216	...Having butt selection means
217	....Control of sinkers
218	....Electrical control type
219	.....Magnetic
220	......Butt translation
221	......And pivoted butt-engaging member
222	....Simultaneous control of multiple butt levels
223	.....Including permanent selection means
224	.....Including drum having integral plural level pattern
225	......Selection by axial movement of element with multiple butt levels
226	......Drum contact with butts
227	......Having additional butt-engaging member control means
228	....Having pattern at rotating member engaging butts at single level
229	.....Inclined rotating member with integral pattern
230	....Having butt-engaging members limited to other than rotary motion about the periphery and longitudinal axis of the needle cylinder
51	..Narrowing and widening
52	...With needle-actuated pickers
53	....Needle-actuated pickers
54	..Stitch-length variation
55	...Axial cylinder adjustment
56	..Cylinder movement or speed change
57	..Needle-cam construction
58	..Preparing for transfer
59	...Including axial cylinder movement
60 R	.Straight
60 H	...Manually operated knitting machine
61	..Incorporating unknit or fleece-type materials
62	..Special-type machines
63	...Double-ended needle
64	..Multiple-needle bank
65	...Hand coverings, forming
66	...Laterally displaceable needle
67	....Narrowing and widening
68	...Varied needle
69	...Racking
70	...Narrowing and widening
71	...With stitch-length variation
72	..Laterally displaceable needle
73	...Narrowing and widening
74	..Varied needle
75.1	..Special stitch
75.2	...Fluid pressure, electric or magnetic stitch selector control means
76	..Narrowing and widening
77	..With stitch-length variation
78	..Needle-cam construction
	UNITED NEEDLE MACHINES
79	.Circular
80	..Incorporating unknit or fleece-type materials
81	..Warp
82 R	.Straight
82 A	...Motor control
82 S	...Stitch length control
83	..Incorporating unknit or fleece-type materials
84 R	...Warp
84 A	.....Mechanism for incorporating unlooped weft extending from selvage to selvage
85 R	....Crotchet type
85 A	......Quilting
203	..Warp
204	...Means to control motion of needle, or needle cooperating element
205	....Individual transducer for particular element
206	....Presser means
207	....Guide bar
208	....Needle bar
209	...Let off
210	....Means controlling rate of let off
211	.....By means sensing strand tension
212	.....By means responsive to radius of beam
213	....Strand-tensioning means
214	...Yarn guides
87	...Multiple-needle bank
88	..Multiple-needle bank
89	..Narrowing and widening, frequently with loop traversing
90	NEEDLE COOPERATING ELEMENTS
91	.Pile loop formers
92	..For needle dial and cylinder machines

		NEEDLE COOPERATING ELEMENTS
		.Pile loop formers
93		..Radially slidable
94		.Wheels, nonlooping, fleece type
95		.Loop traversers or holders
96	R	..For straight machines
96	W	....Welt turners
97		..Wheel
98		.Beard pressers
99		..With press-off preventers
100		..Needle displacement
101		..Individually movable
102		...Sliding
103		..Special stitch wheels
104		.Sinkers or web holders
105		..Wheel
106		..Pivoted
107		..Radially slidable
108	R	...Movable cam sections
108	A	.....Knitting above nebs
109		..For straight machines
110		...Transversely slidable
111		.Pivoted latch actuators
112		..Gap closers
113		.Wheel
114		NEEDLE BEDS
115		.Independent needle
116		NEEDLES
117		.Hand
118		..Crochet
119		.Spring beard
120		.Sliding latch
121		.Pivoted latch
122		..Latch pivots
123		.Shanks
124		..Self-frictioning
125	R	FEEDING
125	A	..With yarn treatment
125	B	..Throat plates
126	R	.Traversing guides, straight machine
126	A	...Feed fingers
127		..Alternately idled guides
128		..Partial traverse
129		...With additional strand
130		..Shock reducers
131		.Close-feed devices
132	R	.Positive
132	T	...Tape
133		.Additional strand idled guide
134		..With clamp or cutter
135		..Needle-wrapping type
136		.Plating
137		..Reversible
138		.Alternately idled guides
139		..Sliding
140	R	..With clamp or cutter
140	S	....With suction
141		.Nonidling or nonplating guides
142		..With clamp or cutter
143		...Starting by strand interengagement
144		....Uniting
145	R	.With clamp or cutter
145	B	...For straight machine (i.e., straight bar)
145	S	...With suction
146		.Strand tensions
147		FABRIC MANIPULATION
148		.Transferring fabric
149	R	.Take-ups
149	S	...Suction take-ups
150		..Special-shape work
151		..Winding, from rotary needle bank
152		..Continuous
153		...From rotary needle bank
231		PATTERN SYSTEM
232		.Electrical signal type
233		.Flexible member type
234		..Chain
235		...Chain being horizontally fed to drive sprocket
236		...Having coaxial pattern member
237		.Multiplier or divider
238		PATTERN STORAGE DEVICE
239		.Drum type
240		..Having removable pin
241		..Having jack
242		.Flexible type
157		STOPPING
158		.Strand controlled
159		..With strand severing
160		..With tension relieving
161		...Electrical
162		...Moving actuator
163		..Electrical
164		..Moving actuator
165		.Needle cooperating element controlled
166		.Fabric controlled
167		.Length control
168		CLEANING ATTACHMENTS
169	R	FABRICS OR ARTICLES
169	A	..Run resistant fabric
170		.Articles
171		..Garments
172	R	...Border or antiravel portions, frequently hosiery
172	E	.....Elastic
173		....Pocket welt
174		...Hand coverings
175		...Union, trunk, and nether
176		...Trunk
177		...Nether
178	R	....Hosiery
178	A	......Stretch and support hosiery
179		.....Suture seam
180		.....Ornamental stitch
181		......With mock seam
182		.....Reinforced
183		.....Combined foot structure and fashioned calf
184		......With heel or toe
185		.....Foot structure
186		......With heel or toe
187		.......Heel or toe
188		.....With rib leg and foot
189		...Fashioned
190		.Incorporated unknitted materials
191		..Fleece or pile type
192		..Warp
193		...With crochet stitch
194		.Fleece or pile type
195		.Warp
196		.Multi-ply
197		..Rib
198		.Traversed or doubled loop
199		..To or from rib or rib change
200		.Rib
201		.Strand change
202		.Materials

CLASS 68 TEXTILES, FLUID TREATING APPARATUS

DECEMBER 1990

1 WASTE RECLAIMING APPARATUS
2 CARBONIZING APPARATUS
3 R MACHINES
3 SS ..Supersonic vibrator
4 .Convertible
5 R .With gas, steam or mist treating
5 A ...Limited area application
5 B ...Relative movement of applicator and textile
5 C ...In chamber
5 D ...Continuous textile feed and discharge
5 E ...With chamber seal
6 ..Static devices
7 ...With fabric carrying cylinder
8 ..Textile on cylinder
9 .With successive fluids and plural tubs
10 ..Relatively transferable textile holder
11 .Plural tubs and relatively transferable textile worker
12 R .Single tube and automatic sequential operation
12 FA ...Fluid actuated control
13 R .Combined
13 A ...With water softener
14 ..With scrub-board
15 ..With tank heater
16 ...Tumbler drum
17 R ..With soap supply
17 A ....Dispenser on agitator
18 R ..With solvent recovery
18 C ....Using condenser
18 D ....Using decanter
18 F ....Using filter
18 FA .....Filter on agitator
19 ..With liquid extractor
19.1 ...Disparate extractors
19.2 ....Centrifugal extractor and gaseous drier
20 ...Gaseous drier
21 ...Squeezer extractor
22 R ....Roller
22 A ......Domestic with wringer
22 B ......Roller serves as reservoir
23 R ...Centrifugal extractor (e.g., centrifuge)
23 A .....Guard ring on basket
23.1 ....With means to control or isolate vibration
23.2 .....Including counterbalance
23.3 .....Vertical axis centrifuge
23.4 ....Including additional fluid handling means actuated by rotation of centrifuge
23.5 ....Including fluid supply means
23.6 ....Including impulsing means (e.g., agitator) within and independent of centrifuge
23.7 .....Oscillating type
24 ....Horizontal or nonvertical axis tumbler and centrifuge
25 ....Shiftable to vertical axis centrifuge
26 ....Independent vat and centrifuge
27 .Plural fluid treating machines
28 .Combined operations
29 ..With free element
30 ..Tumbling, scrubbing and squeezing
31 ..Scrubbing and squeezing
32 ...One work element reciprocable longitudinally of a roll axis
33 ...Cooperating movable work element
34 ....One movable with tub
35 ...Single movable work element
36 ....Pivotally movable
37 ....Rectilinearly movable
38 ..Scrubbing and liquid flowing
39 ...Endless apron and scrubber
40 ....Scrubber reciprocable longitudinally of apron
41 ...Horizontal axis pivoted carrier scrubber
42 ...Carrier roll and platen
43 ..Squeezing and liquid flowing
44 ...Squeezer and endless belt
45 ....Single endless belt
46 ...Roll and carrier roll
47 ...Roller bed and carrier roll
48 ...Movable tub, tray or cage
49 ....With shuttle squeezer
50 ....Vertically movable
51 ...Mechanical liquid pump
52 ..Squeezing and dragging
53 ..Impulsing and liquid flowing
54 ..Impulsing and scrubbing
55 ..Dragging and liquid flowing
56 ..Dragging and scrubbing
57 ...Drag on vertical axis
58 ..Tumbling and liquid flowing
59 ...Spurting nozzle, thermal flow
60 ..Tumbling and scrubbing
61 ..Tumbling and squeezing
62 ..Liquid flowing and liquid applying
63 .Scrubbing
64 ..Scrubber and bed, reciprocatory
65 ...Bed reciprocable about a roll periphery
66 ...Both movable
67 ....On horizontal axis
68 .....Vertical scrubbers
69 .....Unitary tub and bed
70 ....On vertical axis
71 .....Tub movable with scrubber
72 ....Rectilinearly
73 .....In vertical plane
74 ...Scrubber, only, movable
75 ....On horizontal axis
76 .....Plate scrubber transverse to axis
77 .....Plural scrubbers
78 ......Individually pivoted scrubbers
79 ....On vertical axis
80 .....Downwardly directed scrubbing face
81 ....Rectilinearly
82 ...Bed, only, movable
83 ....On vertical axis
84 ..Rotary
85 ...Brush roller and roll
86 ...Roll and platen
87 ....Brush roll or brush platen
88 ....Resiliently mounted platen
89 ...Vertical axis scrubber
90 ...Horizontal axis scrubber
91 ..Fixed scrubber and bed, movable carrier
92 ..Scrubbers
93 ..Scrubber bed or cage
94 .Squeezing
95 ..Squeezer and textile cover
96 ..Deformable receptacle
97 ..Roll type
98 ..Planetary
99 ...Roll and roll
100 ...Roll and roller bed
101 ....Resiliently mounted roller bed
102 ...Rectilinearly reciprocable roll and bed
103 ....Fixed bed
104 .....Single roll
105 ...Fixed axis roll and reciprocable bed
106 ...Oscillating roll and bed
107 ....Single roll
108 ..Chasers
109 ...Nonrotatable bed
110 ..Squeezer and bed, both movable
111 ...Vertically reciprocable squeezer and vertically pivoted bed

		MACHINES
		.Squeezing
		..Squeezer and bed, both movable
112		...Opposed receding and approaching squeezers
113		..Squeezer, only, movable
114		...Cradled
115		...Plural horizontally pivoted squeezers
116		....Bilateral squeezing faces
117		...Single horizontally pivoted squeezer
118		....Bilateral squeezing faces
119		....Edge pivoted horizontal plate
120		...Rectilinearly movable squeezer
121		....Bilateral squeezing faces
122		....Vertically
123		.....With squeezer displacement
124		.....Successively acting squeezers
125		..Mountings
126		...For roll squeezers
128		..Squeezer roll strippers
129		..Nonrotary squeezers
130		...With plungers or valves
131		.Impulsing
132		..Oscillatory or rotary on vertical axis
133		...Bottom drive
134		..Impellers
135		.Dragging
136		..Oscillatory or rotary on vertical axis
137		...Top drive
138		..Dollies
139		.Tumbling
140		..Cage type tumbler supports, bearings or drive
141		..Wobbly cage
142		..Cage construction
143		...Compartmented
144		..Imperforate receptacle type
145		...Compartmented
146		...Fixed inclined axis
147		.Liquid flowing
148		..Liquid displacement and movable cage or carrier
149		...Rotatable skein-supporting sticks
150		...Wound package, central liquid flow
151		...Vertically pivoted cage-pump or carrier-pump
152		..Movable cage or perforate tray
153		...Oscillatable cage or tray
154		....Vertical axis
155		...Rectilinearly reciprocable cage or tray
156		....Vertically reciprocable
157		..Movable carrier in vat
158		...Continuous textile feed and discharge
159		...Skein carrying stick or frame in liquid receptacle
160		....Rotatable skein stick
161		.....With skein stretching means
162		....Rotatable carrier for sticks or frames
163		.....Rotatable skein stick
164		......With skein stretching means
165		....Reciprocable carrier for sticks or frames
166		.....Rotatable skein stick
167		....Traversing skein stick
168		.....Endless belt stick carrier
169		......With skein stretching means
170		...Vertically reciprocable carrier
171		..Movable liquid receptacle
172		...Rockable or oscillatable liquid receptacle
173		....Fixed axis
174		.....Vertical axis
175		..Fixed liquid receptacle
176		...Helical textile course
177		...Web or rope pleating in receptacle
178		....Conditioning chutes
179		...Conditioning chutes
180		...Jiggers
181	R	...With liquid supply and efflux
181	D	.....Diaper washer
182		....Rotating stock strainer
183		...With gas supply to liquid
184		...With liquid pump
185		....And interconnecting sampler
186		.....And textile holddown
187		....And textile holddown
188		....Skein supporting sticks
189		....Wound package, central liquid flow
190		....Surgers
191		....Thermal flow
192		.....Surgers
193		.....Tubular conductors
194		...Textile holddowns
195		...False bottoms
196		...Covers
197		...Elevatable textile supports
198		...Hollow wound package holders
199		...Carriers
200		.Liquid applying
201		..Needle injectors
202		..Roller
203		...Intermittent liquid applicator
204		..Endless belts
205	R	..Tricklers and sprinklers
205	D	....Diaper washer
205	E	....Reel type
206		...With skein supporting sticks
207		.Liquid supply or vapor supply to liquid
208		.Drains and overflows
209		.Fire or explosion preventers or fume removers
210		.Loaders, unloaders or dumpers
211		.Limited area clamps
212		.Elements
213		IMPLEMENTS
214		.Combined
215		.Pounders
216		..With plunger
217		...And valve
218		..Valved
219		..With material receptacle
220		.Scrubbers
222		.Steamers
223		.Washboards
224		..Brandboards, soap holders and soap supply
225		..Splash guards and breast boards
226		..Rubbing surfaces
227		...Brush type
228		...Sheet or slab
229		....Surface design or elevation
230		...Of slats, bars, or tubes
231		...Of rollers
232		.Tubs
233		..With scrub surfaces
235	R	ACCESSORIES
235	D	..Diaper washer
236		.Combined wash bench and wringer support
237		.Washtub or wash boiler attachments
238		..Wringer supports
239		.Wringer supports
240		.Clothes supporting or spotting boards
241		.Wringers
242		..Flexible diaphragm squeezers
243		..Twisters
244		..Roller type
245		...Combined
247		...Enclosable
248		...Rolls in horizontal plane
249		...Interconnected functional units
250		....Guide, roll pressure and clamp
251		....Roll pressure and clamp
252		....Guide and clamp
253	R	....Roll pressure and drive

	ACCESSORIES
	.Wringers
	..Roller type
	...Interconnected functional units
	....Roll pressure and drive
253 A	......Main frame release type
253 B	......Electrical interconnection
253 C	......Roll or bearing interconnection
254	....Drive and drain
255	....Drive and wringer rotation lock
256	...Pressure applying or release mechanisms
257	....Roll separation against spring pressure
258	....Power mechanisms
259	....Release through abnormal roll separation
260	....Plural manipulative pressure adjustors
261	.....And auxiliary release
262 R	....Single manipulative pressure adjustor
262 A	......Toggle
262 B	......Slow adjusting
263 R	.....And auxiliary release
263 A	.......Toggle
263 B	.......Main frame release type
264	...Guards, guides and feeds
265	....Movable guide or feed
266	.....Feed or idler roll
267	.....Apron between rolls
268	.....Apron to or from rolls
269 R	...Gearing and bearings
269 B	.....Bearing structure
269 C	.....Stop or reversal control
269 CA	......Main frame release type
270	...Strippers
271	...Drains
272	...Mountings
273	....On horizontal axis
274	....On vertical axis
275	....On horizontal track
276	..Clamps

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CROSS-REFERENCE ART COLLECTIONS

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900	FOAM TREATMENT
901	HIGH FREQUENCY TREATMENT
902	DEVICES FOR STORAGE AND REUSE OF SOAP SUDS
903	PERFORATED DRUM AND CONTINUOUS TEXTILE FEED AND DISCHARGE

CLASS 69 LEATHER MANUFACTURES

1	MACHINES
1.5	.Belt-stretching
3	.Horse collar shaping
4	.Horse collar stuffing
17	.Strap-finishing
2	.Cutting and/or impressing
6	.Rounding
6.5	.Roughing
7	.Seam-pressing
7.3	.Pounding
7.5	.Searing
7.7	.Edge-finishing
8	.Forming and pressing
9	.Skiving or splitting
9.1	..Evening and grading
9.3	..Combined or plural diverse
9.5	..Rotary tubular knife
10	..Belt knife
16	..Rotary disk knife
15	..Reciprocating knife
11	..Fixed knife
12	...Reciprocating feed
13	...Roller feed
23	.Fur treatment
24	..Coarse hair-removing
25	...Clipping
26	...Plucking
27	..Fur-orienting or smoothing
28	..With fluid
29	.Fluid-treating apparatus
30	..Rotary drum
31	..Liquor agitation
32	..With hide, skin or leather moving means
33	.Hide folding, flexing, suppling or crumpling
34	..Staking
35	..Boarding
36	.Band-type knife
37	.Rotary tool
38	..With tool grinder or cleaner
39	..Rotating about vertical axis, horizontal work support
40	..With additional translating motion during treatment
41	..Belt-type work support
42	..Cylinder work support
43	...Smooth roll only
44	..Moving work support
45	.Pivoted tool
46	.Translating tool
47	.Moving work support
48	.Presses
19	WORK STRETCHER OR HOLDER
19.1	.Stretcher
19.2	..Cased hide or skin type
19.3	..With adjustable tensioning means
20	TOOLS
21	PROCESSES
21.5	.Skiving or splitting
22	.Fur

CLASS 70 LOCKS

DECEMBER 1990

1 MISCELLANEOUS
1.5 ATTACK-ACTUATED DEFEATING MECHANISMS
1.7 .With reset mechanisms
2 HASP
3 .Combination lock
4 ..Hasp-carried
5 ..Keeper-carried
6 .Key lock
7 ..Hasp-carried
8 ...Keeper-encasing
9 ....Dead bolt
10 ....Latching bolt
11 ...Dead bolt
12 ...Latching bolt
13 ..Keeper-carried
14 PORTABLE
15 .Fetters
16 ..Manacles and cuffs
17 ...Nippers
18 ..Shackles
19 .Clamps
20 .Padlocks
21 ..Combination and/or key-controlled
22 ..Combination-controlled
23 ...Non-shackle type
24 ...Rigid shackle
25 ....Sliding
26 .....Removable
27 ....Pivoted
28 .....Sliding detent
29 .....Swinging detent
30 ...Flexible shackle
31 ..Key-controlled
32 ...Non-shackle type
33 ....Housing extension and cooperating detent
34 ....Single stem or shank
35 ...Rigid shackle
36 ....Divided shackle
37 .....Divided jaw type
38 R ....Sliding
38 A ......Both legs engaged
38 B ......Short leg engaged
38 C ......Long leg engaged
39 .....Removable
40 .....Arcuate locus
41 ....Pivoted
42 .....Sliding detent
43 ......Free end only engaged
44 ......Pivoted end only engaged
45 .....Swinging detent
46 ......Free end only engaged
47 ......Pivoted end only engaged
48 .....Arcuate locus
49 ...Flexible shackle
50 ..With seal
51 ..Parts, accessories, attachments and adjuncts
52 ...Housings
53 ...Shackles
54 ...Protectors
55 ....Sheaths
56 ....Shields or canopies
57 SPECIAL APPLICATION
57.1 FOR ANTITHEFT SIGNALING DEVICE ON PROTECTED ARTICLE
58 .For portable articles
59 ..Canes, umbrellas, apparel
60 ..Robes
61 ..Tools
62 ..Supporting stands
63 ..Receptacle
64 ...Bag
65 ....Collapsible throat
66 ....Pivoted rigid jaw
67 ....Attache or briefcase, portfolio
68 .....Interengageable slide fastener type
69 ...Trunk and/or suitcase
70 ....Projecting fixed or movable lug type
71 ....Bolt type
72 .....Hasp controlled
73 ....Link and lever of hasp type
74 ....Hasp type
75 .....Hasp-carried lock
76 ....Loop type
77 .For closures
78 ..Cabinet
79 ...Projecting lug type
80 ....External catch
81 ...Projectable bolt
82 ....Multiple bolts
83 ....Multidirectional displacement
84 ....Swinging and hooked end
85 ..Drawer
86 ...Dead bolt
87 ...Till
88 ....Combination
89 ..Window
90 ...Sliding sash
91 ..Door
92 ...Emergency exit
93 ...Links to limit opening
94 ...Braces
95 ...Sliding door
96 ....Extending keeper
97 .....Rigid or fixed
98 .....Extensible
99 ....Projecting or extending bolt
100 ....Projectable bolt
101 ...Swinging door
102 ....Interfitting lock housing and keeper
103 .....Multiple dead bolts
104 .....Sliding dead bolt
105 .....Swinging dead bolt
106 .....Locking latch bolt, biased
107 ....Combined dead bolt and latching bolt
108 .....Multiple dead bolts
109 .....Multiple latch bolts
110 .....Dead bolt, dogged latch bolt
111 .....Manually dogged latch bolt
....Dead bolts
113 .....Multiple
114 ......Sliding and swinging
115 ....Combination operable only
116 ....Key operable only
117 ......Sliding and rotary
118 ......Sliding
119 ....Combination operable only
120 ....Key operable only
121 ......Swinging
122 ....Combination operable only
123 ....Key operable only
124 .....Single
125 ......Sliding and swinging
126 ....Combination operable only
127 ....Key operable only
128 ......Sliding and rotary
129 ......Sliding
130 ....Multidirectional displacement
131 ....Keeper interlocking
132 ....Curved
133 ....Combination operable only
134 ....Key operable only
135 ......Swinging
136 ....Keeper and housing interlocking
137 ....With hooked end
138 ....Combination operable only
139 ....Key operable only
140 ......Screw
141 ....Locking latch bolts, biased
142 .....Keeper interlocking
143 .....Projectable beyond normal biased position
144 .....Spring projected
145 ......Manually operable

FOR ANTITHEFT SIGNALING DEVICE ON PROTECTED ARTICLE
.For closures
..Door
...Swinging door
....Locking latch bolts, biased
.....Spring projected
......Manually operable
467 ....Directly acting dog for exterior, manual, bolt manipulator
468 ....Related dog for interior, manual, bolt manipulator
469 ....Dog having a dog
470 ....Related dogging means for latch-bolt
471 ....Dog and dog actuator always interconnected
472 ....Exterior manipulator declutched from bolt when dogged
473 ....Manual dog-controller concentric with bolt manipulator
474 ....Shiftable rollback serves as dog
475 ....Additional dog-controller key actuated for dogging and undogging
476 ....Dog-controller axially slidable and axially rotatable
477 ....Dog-controller rotatable
478 ....Key-actuated lock releases dog
479 ....Manual bolt-manipulator operation releases dog
480 ....Manual bolt-manipulator operation releases dog
481 ....Interior manual bolt-manipulator serves as dog-controller
482 ....For both dogging and undogging
483 ....Manual dog-controller
484 ....With additional lock actuated dog-controller
485 ....Additional dog-controller controls both dogging and undogging
486 ....Accessible at door edge
487 ....Slidable only
488 ....Manual bolt-manipulator is slidable only
489 ....Manual bolt-manipulator is lever
149 ....Freely movable external manipulator
150 ....Dogged bolt or connections
151 R ....Automatic
151 A ....Snub bolt
152 ....By manipulator
153 ....Connections only
154 .....Gravity projected
155 ......Projecting mechanism is lock controlled
156 .....Combination and/or key operable
157 ......Trip release
158 ..Cover, lid, cap, encasing shield
159 ...Pivoted
160 ....Cover-carried lock
161 .....Dead bolt
162 .....Latching bolt
163 ...Removable
164 ....External locking devices
165 ....Freely movable when locked
166 ....Directly seating
167 .....Cover-carried lock
168 ......Dead bolt
169 ......Latching bolt
170 ....Movably seating
171 .....Cover-carried lock
172 ......Dead bolt
173 ......Latching bolt
174 .For control and machine elements
175 ..Valve
176 ...Locked stationary
177 ....Externally mounted locking device
178 .....Valve encasing
179 ....Housing-carried lock
180 ....With padlock
181 ..Rod
182 ..Rotary shaft
183 ...Locked stationary
184 ....Housing-carried lock
185 .....Dead bolt
186 .....Latching bolt
187 ....Shaft-carried lock
188 ...Freely movable when locked
189 ....Shaft-carried clutch
190 ..Gear
191 ...Planetary
192 ..Lever
193 ...Guide
194 ....Quadrant
195 .....Lever-carried lock
196 ....Fixed lever-receiving keeper
197 .....Lever-carried lock
198 ...Multiple
199 ....Externally mounted locking device
200 .....With padlock
201 ...Single
202 ....Externally mounted locking device
203 .....With padlock
204 ....Disconnectable
205 ....Foldable
206 ....Universal mounting
207 ..Handle, handwheel or knob
208 ...Retractable or flush handle
209 ...Rotary or swinging
210 ....Locked stationary
211 .....Externally mounted locking device
212 ......With padlock
213 .....Combination lock
214 ......Push pin or button
215 .....Handle-carried key lock
216 ......Coaxially mounted
217 ....Axially movable bolt
218 ....Freely movable when locked
219 .....Combination lock
220 ......Push pin or button
221 .....Handle-carried key lock
222 ......Coaxial clutch connection
223 ....Axially movable clutch
224 ...Lock and handle assembly
225 ..Wheel
226 ...Rotation blocking
227 ....Spoke gap traversing type
228 ....Brake type
229 ..Bolt, nut, stud, stud-cap
230 ...Locked stationary
231 ...Freely movable when locked
232 ...Encased
233 .For cycles
234 ..Anchors
235 ..Stands
236 ..Drive
237 .For automotive vehicles
238 ..Plural point
239 ...With switch
240 ..Hood
241 ...With switch
242 ..Fuel valve
243 ...With switch
244 ...Cap combined
245 ..Transmission
246 ...Cover combined
247 ...Selective-type shift rod, fork or block
248 ....With switch
249 ...Planetary type
250 ....With switch
251 ...With switch
252 ..Steering mechanism with switch

FOR ANTITHEFT SIGNALING DEVICE ON PROTECTED ARTICLE
.For automotive vehicles
253 ..Pilot wheel control or linkage
254 ..Control levers with switch
255 ..Other element with switch
256 ..Remote control
257 ...With switch
258 ..Accessories
259 ...Spare or mounted wheel or tire
260 ....Tire or rim only
261 .For seats
262 SYSTEMS
263 .Operation and control
264 ..Central control
265 ..Serially operable
266 OPERATING MECHANISM
267 .Predetermined time interval controlled
268 ..Positively initiated delay interval
269 ...Interval terminating
270 ...Repeating interval
271 ..Electric
272 ..Clockwork control
273 ...Continuously operating once initiated
274 ....Emergency release
275 .Motor
276 ..Permanent magnet
277 ..Electric
278 ...Combination circuits
279 ...Alternately mechanically operable
280 ...Projected and retracted electrically
281 ...Projected electrically only
282 ...Retracted electrically only
283 ...Dogging manual operator
284 .Combination and key
285 .Combination or key
286 .Combination
287 ..Individual blocking elements
288 ...Selectively operable
289 ..Complex movement or puzzle type
290 ...Labyrinthian passage
291 ..Tumbler type
292 ...Plural interdependent sets
293 ...Plural independently operable sets
294 ...Single tumbler set
295 ....With ball or roller
296 ....Interset sliding tumblers
297 ....Individually set sliding tumblers
298 .....Manually operable
299 .....Associated movable operator
300 ......Removable
301 ....Rotary or swinging tumblers
302 .....Interset tumblers
303 R ......Tumblers released
303 A ....Fence held spaced from tumblers
304 .....Individually set
305 ......Movable selector
306 ......Associated movable operator
307 ....Removable
308 ....Pin or rod and slot
309 ....Spindle operator
310 ....Concentric spindles
311 ....Axially shiftable spindle
312 ......Manually operable
313 ..Step-by-step
314 ..Combination upsetting
315 ..Permutation
316 ...Compound tumblers
317 ....With fastener or holder
318 ....Pin and socket
319 ...Removable change element
320 ..Operating elements
321 ...Fences
322 ....Bolt or lock housing supported
323 ...Tumbler structure and position
324 ....Nested
325 ....Variant diameter
326 ....Mounts
327 ....Motion-restraining means
328 .....Friction holder
329 ...Spindles
330 ...Operating indicators
331 ....Portable combination setting guide
332 ....Dials
333 R ..Tampering prevention or attach defeating
333 A ....Hidden or covered dial
334 ...Resonance type
336 .Key
337 ..Multiple keys
338 ...Selective shutout type
339 ...Interdependent
340 ...Master- and change-key
341 ....Change-key shutout
342 ....Submaster- and change-key
343 .....Change-key shutout
344 ..Single key
345 ...Tumblerless push or pull key
346 ...Tumblerless warded
347 ...Tumbler and ward type
348 ...Tumbler type
349 ....Sliding and rotary or swinging tumblers
350 ....Sliding tumblers
351 .....Longitudinal
352 .....Transverse
353 ....Rotary or swinging tumblers
354 .....Single set
355 ......Directly key engaged
356 ....Cylinder type with auxiliary tumblers or wards
357 ....Cylinder type
358 .....Plural tumbler sets
359 .....Concentric tumblers
360 .....Sliding and rotary plug
361 .....Sliding plug
490 .....Rotary plug
491 ......Sliding tumblers
492 ....Transverse of plug
493 ....Pin tumblers
494 ....Rotatable pins (e.g., MEDECO lock)
495 ....Including sidebar
496 ....Including sidebar
365 ......Rotary or swinging tumblers
366 ....Transverse of plug
367 .....Cylinder and plug assembly
368 ......Key- and tool-controlled
369 ......Key only controlled
370 .....Cylinder attaching or mounting means
371 .....Detachable or removable cylinder
372 .....Operating elements, parts and adjuncts
373 ......Cylinder
374 ....Adjustable
375 ......Plug
376 ......Tumblers
377 ....Plate
378 ....Pin
379 R ......Operating connections
379 A ....Intermediate
380 ....Rollbacks
381 ......Cylinder rings
382 ..Permutation
383 ...Automatically key set combinations
384 ...Adjustable tumblers
385 ....Removable change element
386 ..With ball or roller
387 ..Push or pull key operation
388 ..Key ejecting
389 ..Key-removal preventing
390 ..False or picking key trapping
391 ..Operating elements
392 ...Tumblers
393 ...Keys

	OPERATING MECHANISM
	.Key
	..Operating elements
	...Keys
394	....Picking
395	....Multi-part structures
396	.....With foldable shank or stem
397	.....With extensible shank or stem
398	.....With slidable bit portion
399	.....With pivoted or swinging bit portion
400	.....Nested second key
401	....Plural shanks, stems or bit wings
402	....Single shank or stem
403	.....Round rigid
404	......Tubular
405	.....Flat rigid
406	......Cylinder lock type
407	.....Irregular nonplanar or undulated
408	....Bow or head
409	....Bitting
410	.....Frangible
411	.....Permutation
412	.....Threaded
413	....Magnetic features
414	....Ejecting feature
416	..Tampering prevention or attack defeating
417	...Armoring
418	...Anti-jimmy
419	...Anti-pick
420	....Guard ward
421	....Guard tumbler
422	...Yielding or frangible connections
423	...Keyhole guards
424	....Portable
425	....Combination-controlled
426	.....Portable
427	....Key-controlled
428	.....Portable
429	...Key securers, fasteners or retainers
430	....Portable
431	PARTS, ATTACHMENTS, ACCESSORIES AND ADJUNCTS
432	.Condition indicators
433	..With recorder
434	...Electric
435	...Padlock
436	..With register
437	...Padlock
438	..Contactual feeler
439	..Tampering detector
440	...With seal
441	..Attention-directing
442	.For combination-operated mechanism
443	..Housings
444	..Operating attachments
445	..Knobs, hand grips, etc.
446	..Combination finders
447	.For key-operated mechanism
448	..Housings
449	...Cylindrical
450	...Face plate
451	...Mounting arrangements
452	..Escutcheons
453	..Key guides, internal
454	..Key insertion guides
455	..Keyhole covers
456 A	..Key holders
456 B	....Parallel key loops, coaxially mounted, individually movable
457	...Flexible
458	...One-piece
459	...Releasable catches
460	..Key identification
461	.Adjustment provisions
462	.Reversible structures
463	.Silencers or mufflers
464	.Antifriction provisions
465	.Emergency unlocking or release arrangements
466	.Mounting aids, guides and assistors

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DIGESTS

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DIG 1	Tumbler registerable with aperture
DIG 2	Tumbler, lateral locking
DIG 3	Schlage
DIG 4	Jacobi
DIG 5	Magazine cylinder and pin tumblers
DIG 6	Bolt dogged in retracted position
DIG 7	Sleeve with embeddable tooth
DIG 8	Closure-operator lock
DIG 9	Pawl and ratchet lock
DIG 10	Thermally controlled
DIG 11	Garage door lock
DIG 12	Extension link with detachable link fastener
DIG 13	Socket-key lock
DIG 14	Insertable permanent key
DIG 15	Plug with tumbler retainer
DIG 16	Jail door lock
DIG 17	Check-key lock
DIG 18	Revolving door lock
DIG 19	Showcase lock
DIG 20	Push to project and lock bolt, key-released
DIG 21	Permutation, rotatable-segemental tumbler bolts
DIG 22	Segmental tumbler
DIG 23	Segmental slot in tumbler cooperating with a pin
DIG 24	Curved slot in tumbler
DIG 25	Peripheral pin on tumbler
DIG 26	Locking lug on bolt
DIG 27	Manually locked, key-released
DIG 28	Fence tumbler
DIG 29	Wedge tumbler
DIG 30	Switch lock
DIG 31	Handle assembly, lock-controlled
DIG 32	Positioners
DIG 33	Starting point
DIG 34	Cover fasteners
DIG 35	Double-ended lock cylinder
DIG 36	Spring-returned lock cylinder
DIG 37	Cylinder lock, multiple tumbler arrangements
DIG 38	Cylinder lock, lateral keyhole
DIG 39	Cylinder and knob connection
DIG 40	Cylinder lock utilizing sheet metal
DIG 41	Coin-controlled
DIG 42	Lost motion devices
DIG 43	Lock protectors
DIG 44	Combination changers
DIG 45	Time lock and auxiliary lock operable on failure of time lock
DIG 46	Conducting key
DIG 47	Laterally movable key
DIG 48	Fluid pressure lock
DIG 49	With alarm
DIG 50	Time lock, fluid-controlled
DIG 51	Light sensitive control means
DIG 52	Over center spring
DIG 53	Adjustable spring
DIG 54	Double-ended spring
DIG 55	Unitary multiple springs
DIG 56	Lock protecting cover
DIG 57	Screw guard
DIG 58	Handle guard
DIG 59	Lock with indicator
DIG 60	Opposed cylinders
DIG 61	Die cast cylinder
DIG 62	Cylinder plug stop
DIG 63	Multiple locks
DIG 64	Door spanning bolt
DIG 65	Double door lock

DIG 66	Double-ended bolt
DIG 67	Handle-contained latch operator
DIG 68	Oblique bolt
DIG 69	Floating bolt
DIG 70	Geneva stop
DIG 71	Combined permutation and key lock
DIG 72	Telephone lock
DIG 73	Thumb latch operator
DIG 74	Spring tumbler
DIG 75	Adjustable tumbler
DIG 76	Manually operated tumbler
DIG 77	"Jaw" tumblers
DIG 78	Sliding and oscillating bolt
DIG 79	Sliding and rotary bolt
DIG 80	Sliding bolt with sliding operating means
DIG 81	Camouflaging means

1	PROCESSES AND PRODUCTS
65	.Plant growth regulating compositions
66	..Aquatic plant regulator
67	...Algicide
68	..Cut flower treatment or preservation
69	..Defoliant or dessicant
70	...Organic active compound containing
71	....Phosphorus
72	....Sulfur
73	.....Hetero sulfur
74	....Hetero nitrogen
75	....Hetero oxygen
76	..Stunting agent
77	..Seed, root, tuber, or bulb germinating activator
78	..Desuckering or sucker-control agent
79	..Organic active compound containing
80	...With inorganic active compound
81	....Heterocyclic compound
82	.....Hetero nitrogen compound
83	....Organic nitrogen compound
84	....Organic carboxylic acid, ester or salt
85	...Solid synthetic resin active ingredient
86	...Phosphorous
87	....Sulfur containing (e.g., >P(=S)-, -C(=S)-O-P(=O)<)
88	...Heterocyclic compound
89	....Gibberellic acid or derivative
90	....Hetero sulfur
91	.....Extracyclic oxygen bonded to ring sulfur
92	....Containing two or more nitrogen atoms in the ring
93	.....Triazine
94	....Six-membered ring containing five carbon atoms and one nitrogen atom
95	....Five-membered ring containing four carbon atoms and one nitrogen atom
96	.....Indole
97	...Heavy metal-containing
98	...Sulfur-containing
99	....Thiourea
100	....Thiocarbamic, thiocarbonic or thiocarboxylic acid, ester, salt or halide thereof
101	.....Trithiothionic or thiono-thio
102	......Bis-xanthogen
103	....Sulfoxy (e.g., sulfite group, sulfone group, etc.)
104	....Thiocyanate or isothiocyanate
105	...Nitrile or isonitrile
106	...Carboxylic acid ester (including carbonates R)
107	....Aromatic acid
108	.....Aryloxycarboxylic acid
109	......Aryloxyacetic acid
110	.......2,4-dichlorophenoxy acetic acid
111	.....Nitro- or amine-containing (e.g., N-phenyl carbamates)
112	.....Polycarboxylic acid
113	...Carboxylic acid, salt, anhydride or acyl
114	....Aromatic
115	.....Nonfused
116	......Aryloxycarboxylic acid
117	.......2,4-dichlorophenoxy acetic acid
118	...Amide
119	....Urea
120	.....N-aryl-urea
121	...Amine
122	...Hydroxy-containing or salt thereof
123	...Ketone or aldehyde
124	...Ether
125	...Nitro-containing
126	...Halogenated hydrocarbon
127	...Hydrocarbon
128	..Inorganic boron- or inorganic halogen-containing
3	.With insecticide, fungicide or deodorant
4	..Inorganic
5	.For mushrooms
6	.Bacterial
7	..Nitrogen fixing or nitrifying
8	..Fermentation
9	...Aerobic
10	...Anaerobic
11	.Organic material-containing
12	..From sewage or night soil
13	...With other organic material
14	..From garbage
15	..From animal matter
16	...Marine animals
17	...Blood
18	...Horn, hair, feathers, wool, leather, etc.
19	...Bone
20	....With other organic matter
21	...Guano, stable manure, etc.
22	...With other organic material
23	..From vegetation
24	...Peat, humus material, coal, etc.
25	..From industrial wastes
26	...Sugar or distillery
27	..From synthetic material
28	...Urea and its derivatives
29	....With phosphorus-containing substances
30	....With nitrogen-containing substances
31	.Inorganic material
32	..Phosphorus-containing
33	...Phosphates
34	....Alkali metal and ammonium only
35	.....Nitrogen-containing
36	.....Alkali metal- and ammonium-containing
37	....Acid treatment
38	.....Gaseous
39	.....Nitric and hydrochloric
40	.....Sulfuric acid
41	.....Acids of phosphorus
42	....Alkaline treatment
43	....Neutralization
44	....Heat-treatment
45	.....Alkali metal and silicon values
46	.....Alkali metal values
47	.....Carbonates, oxides, sulfates, silicon and halides
48	....Products
49	.....Nitrogen-containing
50	......Nitrates
51	.....Alkali metal- and ammonium-containing
52	.....Silicon-containing
53	.....Containing carbonates, oxides, sulfates or halides
54	..Nitrogen-containing (except ammonium)
55	...Cyanamide
56	....Nitrogen-containing (except ammonium)
57	....Alkali metal or ammonium-containing
58	...Nitrates
59	....With alkali metal or ammonium compound
60	....With carbonates, oxides, sulfates or halides
61	..Alkali metal or ammonium
62	..Silicon-containing
63	..Carbonates, oxides, sulfates, halides, etc.
64.01	.Forms or conditioning
64.02	..Coating and granulating
64.03	..Granulating
64.04	...By comminuting

PROCESSES AND PRODUCTS
.Forms or conditioning
..Granulating
64.05 ...By agglomerating
64.06 ...By fluid contact
64.07 ..Coating
64.08 ..Slurry or suspension
64.09 ..Gel
64.1 ..Liquid
64.11 ..Controlled release
64.12 ..Anticaking
64.13 ..Forms having structure, e.g., particle size, dimensions, etc.
****
CROSS-REFERENCE ART COLLECTIONS
****
900 FOAMS
901 REFUSE CONDITIONING
902 NITRIFICATION INHIBITION
903 SOIL CONDITIONER
904 CARRIER
****
DIGESTS
****
DIG 1 Adjuvant (e.g., carrier, particle size, etc.)
DIG 2 Chelating agent
DIG 3 Defluorination
DIG 4 ANTI-CORROSION

CLASS 72 METAL DEFORMING

1 WITH RANDOMLY-ACTUATED STOPPING
2 .Manually controlled
3 .Responsive to condition of work or product
4 ..Work feed or faulty work
5 ...Termination or tangle of running-length work
6 WITH USE OF CONTROL MEANS ENERGIZED IN RESPONSE TO ACTIVATOR STIMULATED BY CONDITION-SENSOR
7 .Including sensor responsive to pattern, or to indicia carried by auxiliary record (e.g., tape or card)
8 .With condition-corrector responsive to comparsion between plural conditions
9 ..Of work or product only
10 .Including sensor responsive to condition of work or product
11 ..Including plural sensors or sensor responsive to plural conditions
12 ...For sensing work or product only
13 ..Comprising sensor responsive to temperature of work or product
14 ..Comprising lead-end or tail-end sensor
15 ...To control operation of deformer directly by sensor
16 ..Comprising lateral-dimension (e.g., thickness) sensor
17 ..Comprising surface-contacting sensor for running-length work (e.g., dancer)
18 ...With deforming of work by sensor
19 .Including sensor responsive to energy-input to tool or tool-driver
20 ..Sensor responsive to tool-actuating fluid pressure
21 .Including sensor responsive to position of tool or tool-linked part
22 ..To control predetermined sequence of operating movements (e.g., of one tool operating on work)
23 ...Of different operating assemblages
24 ....Including work-handling or product-handling
25 ..To control operation of interlock
26 ..To stop machine
27 .To control different operating assemblages
28 WITH USE OF SELF-REGULATING CONTROL SYSTEM UTILIZING ELECTRICAL OR HYDRAULIC ENERGY
29 .Utilizing electrical energy
30 WITH STOPPING UPON COMPLETION OF PRESCRIBED OPERATION
31 WITH INDICATION OF CONDITION OR POSITION OF WORK, PRODUCT, OR MACHINE ELEMENT (E.G., BROKEN-TOOL ALARM)
32 .Including use of quantitative indicator (e.g., pointer and scale)
33 ..Work or product data (e.g., counter)
34 ...Dimension or form
35 ..Position of machine element (e.g., roller spacing)
36 ...Adjustment of normally fixed element (e.g., work gauge)
37 WITH USE OF OPTICAL OR TRANSPARENT (E.G., VIEWING) MEANS
38 WITH EXPOSURE OF WORK TO GAS, VAPOR, MIST, OR MODIFIED ATMOSPHERE
39 WITH CLEANING, DESCALING, OR LUBRICATION OF WORK OR PRODUCT
40 .Mechanical cleaning
41 .Lubricating
42 ..With particular lubricant
43 ..With means to apply lubricant
44 ...With means to transfer lubricant
45 ....Force feed
46 WITH "COATING" OF WORK
47 .Metal coating
48 BY TOOL-COUPLE PRESSING TOGETHER ADJACENT SURFACE PORTIONS OF SAME WORK (E.G., TUBE-SEAMER)
49 .To form helically-seamed tube
50 ..Using roller conforming to seam contour
51 .To form longitudinally-seamed tube
52 ..During longitudinal movement of work
53 BY SHOT-BLASTING
54 BY APPLICATION OF FLUENT MEDIUM, OR ENERGY FIELD
55 .With cutting
56 .By kinetic energy of fluid or field
57 .With actuated tool engaging work
58 ..Expanding hollow work
59 ...Corrugating tubular work
60 .Using fixed die
61 ..Expanding hollow work
62 ...In circular section die
63 ..Utilizing diaphragm between fluid and work
64 BY TWISTING AXIALLY MOVING WORK
65 .With adjustment of machine or variation in effect of tool on product
66 COILING BY WORK-GUIDE MEMBER ORBITING ABOUT LONGITUDINAL CENTERLINE OF FORMED COIL
67 BY USE OF TOOL ACTING DURING RELATIVE ROTATION BETWEEN TOOL AND WORK ABOUT INTERNAL CENTER (E.G., GYRATING OR ROTATING TOOL)
68 .With metal deformation of different type
69 .With modification or control of temperature of work, tool or machine, or with lubrication thereof
70 .With cutting of work or product
71 ..By composite cutting, deforming tool
72 ..With actuation of cutter in timed relation to movement of deformer or work
73 .With oscillation of work about work-axis
74 .With oscillation of work-engaging tool surface about work surface
75 .Spherical tool
76 .Work-hammering tool
77 .With tool surface orbiting around axis parallel to direction of travel of longitudinally moving work
78 ..Including orbiting roller mounted on rotating carrier
79 ..Including deflectors arranged to provide undulating path for work
80 .During rotation of work
81 ..With "pattern" causing movement of presser member
82 ..Caused by work-holding, shape-imparting form (e.g., for "spinning")
83 ...With means causing cooperating presser member to traverse form surface
84 ..Using tool having rotating surface moving along it axis of rotation during deformation
85 ...And means causing tool to traverse surface of cooperating rotatable member
86 ..Using angularly related roller-couple acting parallel to axis of work rotation
87 ...And additional work-engaging tool, circumferentially spaced about axis of work rotation

BY USE OF TOOL ACTING DURING RELATIVE ROTATION BETWEEN TOOL AND WORK ABOUT INTERNAL CENTER (E.G., GYRATING OR ROTATING TOOL)
.During rotation of work
88 ..Caused by tools (e.g., "platens") relatively moving parallel to their surface
89 ...Including rotating tool (e.g., "disk-platen")
90 ...Including stationary tool
91 ..Caused by rotating tool and opposing concave surface
92 ...Non-rotating concave surface
93 ....With means to adjust concave surface
94 ..And movement of work laterally of rotational axis during deformation
95 ..And longitudinal movement of work
96 ...Using external rotating tool and internal core
97 ....Including work-piercing or work-expanding plug
98 ...Using tool-surfaces spaced along axis of work rotation
99 ...Using hyperboloidal roller
100 ...Using tool-cluster
101 ..Using rotating tool-couple relatively adjustable about pivot normal to tool axis
102 ..Using non-cylindrical rotating tool
103 ...Having helical groove
104 ....With cooperating tool rotating in same direction
105 ...And cooperating, complementary tool
106 ....And circumferentially spaced, work-engaging elements
107 ...Included in roller-cluster
108 ...With cooperating tool rotating in same direction
109 ...Including in tool-couple
110 ..Using roller-cluster
111 ..Using tool-couple
112 .Tool orbiting or rotating about an axis
113 ..Comprising transverse-axis roller inside hollow work
114 ..Helically-grooved tool threadedly engaging work
115 ..Comprising movable tool cooperating with fixed, work-spaced tool
116 ...Plural, selectively usable fixed tools
117 ...Outwardly acting movable tool
118 ..Including tool surfaces spaced along orbital axis
119 ...Including plural tools rotating on angularly related axes
120 ..With actuation of tool radially
121 ...Wherein tool is actuated inwardly
122 ...Including rotating tool mounted on rotating carrier
123 ....Including roller having noncylindrical work-engaging surface
124 ..Comprising roller cooperating with work-spaced tool
125 ..With work or tool locator or work-clamp
126 ..Tool both orbits and rotates
127 BY DEFLECTING SUCCESSIVELY-PRESENTED PORTIONS OF WORK DURING BODILY MOVEMENT THEREOF (E.G., FOR COILING, LEVELLING, CURVING OR TROUGHING MATERIAL IN MOVEMENT)
128 .With modification or control of temperature or work, tool or machine
129 .With cutting of work or product
130 ..And deforming of work or product (other than by deflecting)
131 ..And stopping of work movement during cutting
132 ..And actuation of cutter in timed relation to deflector or work movement
133 .With feeding of discrete articles or orienting of work relative to deflector (other than by deflector)
134 .With use of means to remove product from deflector
135 .To form helical coil or tube
136 ..Including thinning of helical portion of work section
137 ..With deforming of work or product (other than by coiler)
138 ..By use of means acting by and during machine operation to form coil of irregular pitch and/or diameter
139 ...Including non-cylindrical core
140 ..By interchangeable or selectable tool portion
141 ..By multi-convolutional tool
142 ..By work-guide and rotatable, work-holding core
143 ...And means to change pitch of coil
144 ...And means to traverse work-guide
145 ..By movable-periphery tool external of coil
146 .To form spiral coil
147 ..With interposes to space adjacent coil convolutions
148 ..With core inside coil
149 .By use of work-contacting wiper and moving, work-holding form
150 ..With core inside hollow workpiece
151 ..With tensioning or work
152 ..With deforming or work or product (other than by wiper and former)
153 ..And means to impart compound motion to form
154 ..Including backed-up, travelling wiper (e.g., follow bar)
155 ..And means to urge wiper toward form surface
156 ..And interrelated means to move form and gripper element thereon
157 ..Including interchangeable or adjustable wiper or form
158 ...Comprising adjustable wiper
159 ..And work-complementing gripper faces (e.g., contoured)
160 .By use of deflected arranged to provide longitudinally undulating path for work (e.g., "leveling")
161 ..With deforming of work or product (other than levelling)
162 ..Including relatively-inclined successive rollers
163 ..And back-up means for roller-deflector
164 ..And adjustable carrier for deflector
165 ...Including tier of roller-deflectors on carriers
166 .By use of deflectors arranged to bend work longitudinally of direction of work-movement
167 ..Including thinning of portion of work-section
168 ..With deforming of work or product (other than bending longitudinally)
169 ..With handling of curved product
170 ..Including three concurrently-acting delta-arranged deflector elements
171 ...And additional work-deflecting or work-constraining element
172 ...Comprising two rollers and guide
173 ...Including adjustable element
174 ....And interrelated means to adjust plural elements simultaneously

BY DEFLECTING SUCCESSIVELY-PRESENTED PORTIONS OF WORK DURING BODILY MOVEMENT THEREOF (E.G., FOR COILING, LEVELLING, CURVING OR TROUGHING MATERIAL IN MOVEMENT)
.By use of deflectors arranged to bend work longitudinally of direction of work-movement
..Including three concurrently-acting delta-arranged deflector elements
...Including adjustable element
175 ....Comprising rectilinearly reciprocable carrier for element
176 .By use of deflector arranged to bend work transversely of direction of work-movement (e.g., troughing)
177 ..With deforming of work or product (other than bending transversely)
178 ..Including roller-cluster
179 ..Including complementary roller-couple
180 ...Including plural, axially-spaced circumferential ribs and grooves
181 ...Including plural, successively-acting roller-couples
182 ..Including roller-couple
183 .By tension applied to work or product (e.g., uncoiling)
184 BY USE OF "FLYING TOOL" ENGAGING MOVING WORK
185 .With cutting
186 ..By composite cutting, deforming tool
187 .Included in plural deforming stations or passes
188 ..Passes spaced along axis of rotating tool
189 .Including arcuately oscillating tool-face
190 .Including orbitally-moving tool-face
191 ..Moving in circular orbit
192 ...With cooperating rectilinearly-moving tool (e.g., "anvil")
193 ....Comprising tool inside hollow work
194 ...Included in tool-cluster
195 ...Circumferentially adjustable relative to work-spaced cooperating surface
196 ...With cooperating complementary (e.g., conjugate) tool-face
197 ...With cooperating roller
198 ...With cooperating allochiral tool-face
199 BY USE OF ROLLER OR ROLLER-LIKE TOOL-ELEMENT
200 .With modification or control of temperature of work, tool or machine
201 ..Including cooling
202 ..By means (other than a tool) modifying temperature of work
203 .With cutting of work or product
204 ..By composite cutting deforming tool
205 .Including tautening of work during deformation (e.g., "tension bridle")
206 .With non-roller Metal Deforming station
207 .Including rectilinearly moving tool cooperating with single roller
208 .With tool inside hollow work
209 ..Comprising plug acting on longitudinally moving work
210 .Mounted on travelling, work-supported carriage
211 .Mounted on manually maneuverable carrier
212 .With work-forcer offset from, and relatively movable between, spaced rollers
213 ..With use of means to move work-forcer
214 .Comprising tool movable relative to stationary work-portion during deformation
215 ..Along a curved path
216 ...About a fixed pivot
217 ....Work between movable tool and pivot (e.g., sweep-arm bender)
218 .....With means to apply torque to movable tool
219 .....Including adjustable tool
220 ..Along a straight path relative to stationary cooperating tool
221 .Plural passes spaced along axis of one roller of tool-couple
222 ..With use of means to displace work laterally into next pass
223 ..Roller common to two tool-couples
224 .Included in roller-cluster
225 ..Comprising diverse roller-pairs
226 .Plural roller-couples (e.g., successively or optionally usable)
227 ..With material-handling between successive couples
228 ...Including optionally selectable work paths
229 ...To reverse-roll the workpiece
230 ...By curved guide (e.g., "loop return")
231 ...Changing orientation or direction of work
232 ..Including one roller common to two roller-couples (e.g., three-high mill)
233 ...Including roller shiftable between successive passes of work
234 ..Including successively-acting roller-couples
235 ...Comprising relatively-inclined successive couples
236 .With cleaning or conditioning of tool, or lubrication of tool or machine
237 .With carrier for roller-couple or tool-couple
238 ..With replacement of tool
239 ...By means to replace tool
240 ..With variation of bite of roller-couple during deformation
241.2 ..Including back-up for roller
241.4 ...With means to relatively vary back-up force along roller axis
241.6 ....Hydraulic or pneumatic force appliers spaced along roller axis
241.8 ....Means to apply bending moment to roller or back-up roll
242.2 ...Load bearing, equal size pair of back-up rolls
242.4 ....And second stage, equal size pair of back-up rolls
243.2 ...Including reaction roll
243.4 ....Equal size pair of reaction rolls
243.6 ...Irregular, convex or hollow back-up roll
244 ..With interposer (e.g., wedge or gag) between tool and pressure applier
245 ..Including fluent-driven tool support
246 ..Including resiliently urged tool support
247 ..Including means to position tool along axis
248 ..With "screw-down" to adjust bite of tool-couple
249 ..With means to drive tool
250 .With handling of, or guiding of, work or product relative to tool
251 ..By endless belt or conveyor roll
252 ..By reciprocating or oscillating means
252.5 .Roller or roller-like tool-element of particular configuration
253.1 BY EXTRUDING THROUGH ORIFICE
254 .With cutting
255 ..Severing product from stock or residue
256 .With metal-deforming other than by extrusion

BY EXTRUDING THROUGH ORIFICE
257 .With product handling
258 .Expressing polymetallic-layered product
259 .By plural impellers operating into one extrusion chamber
260 .Expressing non-uniform cross-section or non-linear product
261 .Expressing plural products
262 .By rotating impeller means
263 .Non-axial movement of die, ram, mandrel or container
264 .Utilizing internal forming means (e.g., mandrel) or core tube (e.g., wire guide)
265 ..Movable longitudinally in ram
266 ..Integral with ram
267 ...Single element ("impact extrusion" type)
268 ..Core tube
269 ..Bridge mandrel
270 .Work supplying
271 .Pressure or velocity conditioning
272 .Container and/or support therefor
273 .Ram or ram element
273.5 .Indirect extrusion
274 BY PULLING WORKPIECE THROUGH CLOSED PERIPHERY DIE (E.G., ROD-, TUBE-, OR WIRE-DRAWING)
275 .With cutting
276 .Producing a non-uniform product
277 .With movement of discrete workpiece angularly, laterally, or in a reverse direction
278 .Utilizing plural metal-deforming tools
279 ..Varying speed of continuous workpiece through successive tool stations
280 ..Accumulating work between successive tool stations
281 ..Including non-coaxial closed dies
282 ..All closed dies coaxially aligned
283 ..Including a mandrel inserted within a hollow workpiece
284 .And applying a "pushing" force
285 .Movable die
286 .With heating or cooling
287 .Utilizing specified work moving means
288 ..Varying speed of moving work
289 ..Rotating a drum, roll, sheave, etc.
290 ..Interrelated work gripper and carrier
291 ..Maintaining a "straight-line-draw"
292 BY TIGHTENING FLEXIBLE BAND OR CHAIN ABOUT WORK
293 BY USE OF NON-DEFORMING WORK-GRIPPING CLAMP AND RELATIVELY MOVABLE CLAMP, TOOL OR WORK-FORCER
294 .With cutting
295 .By individually non-deforming clamps
296 ..With coacting relatively movable tool
297 ...With means to actuate tool
298 ..With means to rotate clamp about fixed axis
299 ...About axis intersecting work-gripping regions of two clamps (e.g., twisting)
300 ..With interrelated clamp closer and clamp mover
301 ..With bodily motion in fixed path
302 ...Substantially direct approach or recession (e.g., stretching)
303 ....Along curved path (e.g., tire upsetting)
304 .With work-distorting clamp
305 .With plural spaced clamps
306 .Plural or complex apparatus (e.g., with plural operations)
307 ..With means to advance elongated work (e.g., pipe elbow crimper)
308 .Clamp is active metal-deforming element
309 ..With coacting movable tool
310 ..Clamp rotatable about fixed axis (e.g., bending brake)
311 .Movable clamp
312 .With interrelated clamp closer and tool mover
313 ..Jaw actuator driven by tool or tool holder
314 ..Mechanical actuator
315 ...Cam or toggle
316 .Clamp structure constitutes sole initial metal-deforming force-reaction means (i.e., is passive tool)
317 ..With plural selectively usable clamps (e.g., tube flarer)
318 ..Deforming indeterminate-length work
319 ..With pivotal tool (e.g., sheet metal bender)
320 ...With die surface extension on clamp
321 ....Curved die surface
322 ..With die surface extending from clamp jaw
323 ...Plural die surface portions and coacting tools
324 WITH CUTTING
325 .By composite tool (e.g., piercing)
326 ..Shear-type
327 ...With endless cutting edges
328 ....Utilizing stripper or ejector
329 ....Blank detaching
330 ...Blank detaching
331 ...Severing (e.g., subdividing)
332 .By shearing tool-couple
333 ..With endless cutting edges (e.g., for punching a hole)
334 ...After final metal-deforming operation
335 ...Pre-cutting (i.e., before metal-deforming)
336 ....Blank detaching
337 ..Blank detaching
338 .Severing a discrete piece from stock, work, or product
339 ..Pre-cutting
340 .Machining after final metal-deforming (e.g., grinding to size)
341 .Machining between plural metal-deforming operations
342.1 WITH TEMPERATURE MODIFICATION OF TOOL OR OF SPECIFIED PORTION OF WORK
342.2 .Cooling
342.3 ..Of tool
342.4 ...And heating of tool
342.5 ..And heating of work
342.6 ...Distinct temperature modifications at distinct locations of workpiece
342.7 .Of tool
342.8 ..Preheating
342.92 ..By electrical resistance heater within tool
342.94 .Distinct temperature modifications at distinct locations of workpiece
342.96 ..By passing electric current through work
343 BY USE OF CLOSED-DIE AND COACTING WORK-FORCER (E.G., PUSH-DRAWING)
344 .With stripping or ejecting from tool
345 ..Timed with tool motion
346 ...With work feeding
347 .Cup or shell drawing (i.e., deep drawing)
348 ..With additional metal-deforming
349 ...Plural deep drawing
350 ..With application of frictional restraining force to work during deformation

	BY USE OF CLOSED-DIE AND COACTING WORK-FORCER (E.G., PUSH-DRAWING)
	.Cup or shell drawing (i.e., deep drawing)
	..With application of frictional restraining force to work during deformation
351	...With yieldable actuation of work-gripper (e.g., spring-biased blank-holder)
352	.Forcing work into or within closed die; e.g., forging
353.2	..By two or more coacting tools movable relative to closed die; e.g., tool complex
353.4	...Symmetrically expanding tools
353.6	....With tools converging to form annular surface; e.g., segments of closed die
354.2	...With tools converging to form annular surface; e.g., segments of closed die
354.6	...One tool telescoping into closed die
354.8	....One yieldably connected to another
355.2	....Coaxial opposed tools
355.4	.....Passing through work; e.g., punch
355.6	.....Both tools telescoping into closed die
356	..With additional metal-deforming
357	..With actuation of split die
358	..Tool portion enters cavity of closed die
359	...With telescoping engagement
360	..Coacting closed-dies
361	..With holding, handling or guiding of work or product
362	PROCESS
363	.Deforming stacked blanks
364	.With temperature maintenance or modification
365.2	."Rolling"
366.2	..Between disclosed rollers
367	.Tube making and/or reshaping
368	..Making
369	..Bending
370	..Comprising use of internal tool
371	.Coiling and/or twisting
372	.Involving use of claimed apparatus
373	..Reciprocating tool
374	...Opposed tool faces
375	....Complementary
376	....Single tool pair
379.2	.Deforming sheet metal
379.4	..Container making
379.6	..Forming undulations
377	.With attenuation, thickening, elongating or shortening of work material
378	..By application of tensile forces
380	BY RELATIVELY MOVABLE OFFSET TOOL-FACES (E.G., FOR BENDING OR DRAWING)
381	.Embodying three or more coacting relatively movable tools (i.e., tool-complex)
382	..Comprising yieldable tool or face portion
383	..With concurrent actuation of tools
384	.Plural
385	.Multi-point tool-couple (e.g., corrugator)
386	.With tool motion in fixed path
387	..Pivotal motion only
388	...Cantilever bender
389	..Between and coplanar with opposed tools
390	...Screw-actuated
391.2	..Concentric or telescoped tools
391.4	...Tool inside hollow fastener
391.6	....With fastener loader or supply
391.8	....Helically ribbed tool
392	BY RELATIVELY RECEDING WORK-ENGAGING TOOL-FACES (E.G., FOR STRETCHING)
393	.Embodying three or more tools (e.g., tube expander)
394	BY THREE OR MORE COACTING RELATIVELY MOVABLE TOOLS (I.E., TOOL-COMPLEX)
395	.With paired coplanar tool-faces (e.g., for stretching flat work)
396	.Yieldable face portion or auxiliary tool on tool-couple element
397	..On actuated tool
398	..Movable toward and against portion of work (e.g., floating mandrel)
399	.Concurrently actuated tools
400	..With coacting fixed tool
401	...Between generally opposed-stroke tools
402	..All tools movable radially inward
403	.With means to actuate tools in sequence
404	BY PLURAL TOOL-COUPLES
405	.With means to feed work between plural tool stations
406	WITH MEANS TO EFFECT COMPOUND MOTION OF TOOL (E.G., ROCKING)
407	WITH MEANS TO ACTUATE BOTH ELEMENTS OF TOOL-COUPLE
408	.By continuously rotating shaft
409	.Handle-actuated tools (e.g., plier type)
410	..Clip-clencher or sleeve-crusher
411	BY RELATIVELY MOVABLE TOOLS HAVING SLIDABLY-ENGAGED WORK-CONFINING WALL MEANS (E.G., EDGEWISE SHEET-METAL BENDER)
412	BY TOOL-COUPLE EMBODYING NONPLANAR TOOL-FACE
413	.With adjustable or replaceable section of tool-face
414	With complementary tool-faces (e.g., for embossing)
415	.Constant profile (e.g., cylindrical segments)
416	.Similar tool-faces
417	INCLUDING INTERRELATED TOOL-MOVER AND BLANKHOLDER-MOVER
418	INCLUDING TOOL MEANS TO MOVE WORK TO OR AGAINST COOPERATING TOOL
419	WITH MEANS TO HANDLE WORK OR PRODUCT
420	.Including means to permit maneuvering of work or product at tool zone
421	..With means to interrelate movement of tool and of work
422	.By gripper and/or endless chain
423	..With drum carrier for gripper
424	.With means to store workpieces (e.g., magazine)
425	.Including variable-speed means
426	.Including product handling means
427	..Ejector
428	.Including work guide
429	WITH MEANS TO DRIVE TOOL
430	.Including magnet, solenoid or explosive
431	.Including yieldable connection in drive train to movable tool
432	..Including pneumatic or hydraulic connection
433	..Including metallic spring connection
434	...Coil spring
435	.Mechanical potential-energy drive means only
436	..With means to check energy for subsequent release
437	..Wherein energy is stored by retraction of tool
438	...With means to control force of blow

WITH MEANS TO DRIVE TOOL
.Mechanical potential-energy drive means only
..Wherein energy is stored by retraction of tool
439 ...Wherein tool is retracted by pinch rolls acting on rectilinearly moving tool-support
440 ...Wherein tool is retracted by flexible strap
441 .With means to selectably control movement of tool
442 ..By drive means common to optionally selectable tools
443 ..To control speed of tool
444 ..By means to connect and/or disconnect tool from its drive
445 .With stored-energy means to retract tool
446 .With means to permit tool positioning
447 ..To reposition line-of-action of tool
448 ..To position stationary tool of tool-pair
449 .Including gear-actuated tool support
450 .Including link-actuated tool support
451 ..Toggle links
452 .Including cam-actuated tool support
453.01 .Including pneumatic- or fluid-actuated tool support
453.02 ..Multiple or staged drive means
453.03 ...With mechanical drive means
453.04 ....Fluid high pressure/mechanical low pressure
453.05 ...Displacement additive
453.06 ...Pressure additive
453.07 ....Axially aligned pistons
453.08 ....Independently actuated means
453.09 ....Pull-down press
453.1 ..Utilizing stored energy
453.11 ...Stored kinetic energy
453.12 ..Pull-down press
453.13 ..Including fluid cushion for die opposite to ram
453.14 ..With ram or tool support aligning means
453.15 ..Randomly manipulated or work-supported tool
453.16 ...With handle for manual manipulation
453.17 ....Riveting tool
453.18 ..Having hydraulic or pneumatic return
453.19 ...Riveting tool
454 .Including screw-actuated tool support
455 WITH TOOL CARRIER (E.G., PRESS FRAME)
456 .With guide for rectilinearly moving tool
457 BY OR WITH WORK-CONSTRAINER AND/OR MANIPULATED WORK-FORCER
458 .Comprising lever manipulated to force work
459 ..With work-complementing tool-face adjacent to work-gripping clamp
460 .Comprising nondeforming work-gripping clamp having adjacent tool-face
461 .Comprising work-stopping abutment
462 TOOL AND/OR TOOL HOLDER
463 .With nondeforming passageway
464 .Including deforming tool and cutting tool
465 .Including flexible or yieldable tool or support
466 ..Flexible or articulated back-up
467 .Tool comprising closed periphery deforming passageway
468 ..Including adjustable size or multiple passageway
469 .Tool-comprising die plate having ribs and/or grooves
470 .Including tool couple or die couple (e.g., opposed die faces)
471 ..With intermediate tool
472 ..Including plural tool couples
473 ..Having adjustable face
474 ..Having nonsymmetrical faces
475 ...Complementary faces
476 .Having unitary tool-face
477 ..Including optionally selectable faces
478 ..Comprising plural sections fixed together in use (e.g., adjustable or collapsible)
479 ..With elongated extension fixed to tool face in use (e.g., handle or shank)
480 ...Adjustable relative to tool-face before use
481 ..With support or holder for adjustable or removable tool-face
482 ...Adjustable or collapsible relative to its support
483 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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700 DEFORMING SPECIFIED ALLOYS OR UNCOMMON METAL OR BIMETALLIC WORK
701 PREVENTING DISTORTION
702 OVERBENDING TO COMPENSATE FOR SPRINGBACK
703 KNURLING
704 CAMBER-ADJUSTING TOOL
705 VEHICLE BODY OR FRAME STRAIGHTENER
706 EXPLOSIVE
707 MAGNETISM
708 REVERSE DRAWING
709 SUPERPLASTIC MATERIAL
710 VIBRATING
711 HYDROSTATIC EXTRUSION

1 R	INSTRUMENT PROVING OR CALIBRATING
1 B	..Force measuring devices
1 C	...Torquemeters
1 D	..Motion sensors
1 DC	...Centrifuge machines
1 DV	...Vibration
1 E	..Angle and direction sensors
1 G	..Gas or vapor analyzers
1 H	..Liquid level and volume measuring device
1 J	..Dimensional gauge; e.g., thickness, length, etc.
2	.Speedometer
3	.Volume or rate of flow meter or element
4 R	.Fluid pressure responsive device and gauge
4 D	...Dead weight type
4 V	...Vacuum gauges
5	.Timing apparatus (e.g., fuse, camera shutter, etc.)
6	..Chronometer (e.g., clock, watch and watch unbalance)
7	BY ABRASION, MILLING, RUBBING OR SCUFFING
8	.Wheel tread, tire, track or roadway
9	FRICTIONAL RESISTANCE, COEFFICIENT OR CHARACTERISTICS
10	.Lubricant testing
11	TESTING OR IMPACT DELIVERING OR SHOCK ABSORBING APPARATUS
12	TESTING BY IMPACT OR SHOCK
13	.Ball driving
14	.Typewriter ribbon or carbon paper
19.01	GAS CONTENT OF A LIQUID OR A SOLID
19.02	.By gas chromatography
19.03	.By vibration
19.04	.By rate of flow of the gas
19.05	.By pressure of the gas
19.06	..Of a beverage
19.07	.Of metal
19.08	.Of concrete, mortar or plastic while in a fluent state
19.09	.Of mud
19.1	.Of a liquid
19.11	..Lubricant
19.12	.Particular separator
23.2	GAS ANALYSIS
23.21	.With compensation detail (for error or drift correction, etc.)
23.22	..For gas chromatography
23.23	...Baseline drift correction circuitry
23.24	...Rate of flow
23.25	...Temperature
23.26	....Gradient
23.27	...Pressure
23.28	..For density or specific gravity
23.29	...Pressure
23.3	.Breath analysis
23.31	.Gas of combustion
23.32	..Air-fuel ratio
23.33	...Solid content
23.34	.Odor
23.35	.Gas chromatography
23.36	..With electrical computer or data processor control
23.37	..With spectrometer
23.38	..Petrochemical
23.39	..Column detail
23.4	..Detector detail
23.41	..Including sample preparation or sampling
23.42	..Detail of gas handling means
24.01	.By vibration
24.02	..Produced by radiant energy
24.03	..Solid content of gas
24.04	..Moisture content or vapor pressure of gas
24.05	..Density or specific gravity of gas
24.06	..Detector detail
25.01	.By thermal property
25.02	..With magnetic property (e.g., paramagnetic gas)
25.03	..Thermoconductivity
25.04	..Moisture content or vapor pressure
25.05	..Detector detail
28.01	.Solid content of gas
28.02	..Particle charging
28.03	..Pressure
28.04	..Separator detail
28.05	...Impactor
28.06	....Fractionalizing
29.01	.Moisture content or vapor pressure
29.02	..Hygrometer
29.03	..Pressure
29.04	..With visual indication
29.05	..Detector detail
30.01	.Density or specific gravity
30.02	..By pressure measurement
30.03	..By rate of flow
30.04	..Detector detail
31.01	.Ambient air
31.02	..Impurity
31.03	.Impurity
31.04	.Pressure
31.05	.Detector detail
31.06	..Semiconductor
31.07	.Particular separator
32 R	SPECIFIC GRAVITY OR DENSITY OF LIQUID OR SOLID
32 A	..Involving vibration of substance or the measuring apparatus
433	.With weighing feature
434	..Continuous test fluid supply
435	..Plural supports for specimen
436	...Vertically, commonly suspended
437	..Immersion
438	.Hydrostatic pressure type
439	..Bubble tube
440	.Multiple floats of graduated density
441	.Portable hand manipulable syringe type
442	..With thermometer
443	...With calculator
444	.Freely vertical reciprocable float with carried indicium
445	..Continuous test fluid supply
446	..With section means
447	..With liquid level responsive gauge or compensator
448	..Float structure
449	...With carried thermometer or thermal compensator
450	...Specimen carrying
451	.Float operated indicator
452	..Continuous test fluid supply
453	..Electrical indication
454	..Pivoted float
35	EXPLOSIVE-DETONATION OR KNOCK
36	ILLUMINATING FLUID
37	WITH FLUID PRESSURE
37.5	.Dimension, shape or size
37.6	..Moving specimen
37.7	...Sheet or filament
37.8	..Plural tests
37.9	..Internal gauging
38	.Porosity or permeability
39	.Fluid pressure brake system or unit
40	.Leakage
40.5 R	..Fluid handling conduit in situ
40.5 A	....Using acoustic detectors
40.7	..By probe gas, vapor or powder
41	..Conveyer feed
41.2	...With immersion
41.3	....Defective article discard
41.4	.....Automatic
45	...With defective article discard
45.1	....Automatic

WITH FLUID PRESSURE
.Leakage
..Conveyer feed
...With defective article discard
....Automatic
45.2 .....Electrically controlled
45.3 .....Vacuum support failure
45.4 .....Sealed receptacle
45.5 ..With immersion
45.6 ...Pneumatic tire
45.7 ....Mesh envelope
45.8 ...Radiator
46 ..Between fitted parts, e.g., joints
47 ...Piston, piston ring or engine valve
48 ...Tire valve
49 ..Pneumatic tire
49.1 ..Pipe
49.2 ..Receptacle
49.3 ...Sealed
49.4 .With ram pressure inducer
49.5 .Pipe
49.6 ..With power-operated closure or seal
49.7 .Motor part or auxiliary
49.8 .Clamp, plug or sealing feature
52 TESTING SEALED RECEPTACLE
53 TESTING OF LIQUID OR LIQUID SUSPENSION OF SOLIDS
54 .Internal resistance, e.g., viscosity
55 ..Friction tube
56 ..Orifice or nozzle flow or extrusion
57 ..Gravity movement of object in medium
58 ..Adhesion or cohesion between wetted surfaces
59 ..Force reaction to member driven therein
60 ..Shearing torque between parallel surfaces
60.1 .Cleaning or foaming ability
61 R .Content or effect of constituent of liquid mixture
61 LM ...Liquid metal monitors
61.1 R ..Liquid constituent of liquid mixture
61.1 C ....Chromotography
61.2 ..Depositioning characteristic, e.g., slime or scale
61.3 ..Utilizing evaporation or heat
61.4 ..Settling or filtering ability, e.g., drilling mud characteristic
63 .Paper pulp freeness
64 .Lubricant testing
64.1 .Gelling or coagulation
64.2 .Vapor pressure
64.3 .Osomotic pressure, e.g., diffusion characteristic
64.4 .Surface tension
65 CENTER OF GRAVITY; TURNING MOMENTS; METACENTRIC HEIGHT
66 ROTOR UNBALANCE
455 .Propeller, impeller or fluid coupling
456 ..Single blade balancing
457 .In situ
458 ..With counterbalancing means
459 .Combined static and dynamic
460 .Dynamic (spinning)
461 ..Mass centering
462 ..With electrical sensor and indicator
463 ...Wattmeter
464 ...Rotatable switch
465 ...Oscilloscope (cathode ray)
466 ...Stroboscopically illuminated
467 ....Indicator
468 ..With counterbalancing means
469 ...By radially and circumferentially adjustable weights
470 ...By circumferentially adjustable weights
471 ..With vibratable mount feature
472 ...Free floating rotor
473 ....Horizontal axis
474 ...One rotor end universally tiltable
475 ...Horizontal rotational axis
476 ....Horizontal plane of vibration
477 .....Both ends free
478 ......With selective endlock
479 ....Horizontal fulcrum
480 .Gravitational moment turns rotor about spin axis
481 ..Ways
482 .Gravitational moment tilts rotor about axis transverse to spin axis
483 ..Universally tiltable
484 ...With tapered rotor centering means
485 ...With expansible or contractible centering means
486 ...With suspension means
487 .Tool and adjunct
570 VIBRATION
571 .Test chamber
572 .Loose object detection
573 .Hardness or compliance
574 .Mechanical impedance
575 ..Of an elastomer
576 ..Device having an electromagnetic drive
577 .Fatigue study
578 ..Electromagnetic drive
579 .Resonance, frequency, or amplitude study
580 ..Including weight determination
581 ..Including axial force determination
582 ..Including structural bond evaluation
583 ..Of aircraft or related structural element
584 .By mechanical waves
585 ..Including ear or hearing testing
586 ..Reverberation
587 ..Acoustic emission
588 ..Structural bond evaluation
589 ..Acoustical impedance
590 ..In detection of a liquid reaction, a chemical reaction, or a nuclear reaction
591 ..Listening or sound tube
592 ..Fluid, fluid leak, or pipe flaw detection
593 ..Bearing, gear, or related moving mechanism
594 ..Soil or building structure
595 ..Frangible
596 ..Beamed
597 ...Velocity or propagation time measurement
598 ....For flaw or discontinuity detection
599 ...Attenuation measurement
600 ....For flaw or discontinuity detection
601 ...Having plural, diverse forms of radiant energy
602 ...With signal analyzing or mathematical processing
603 ...Acoustic holography
604 ....Having means substituted for reference signal
605 ....Liquid or deformable surface holography
606 ...Imaging of discontinuity with stationary sonic transmitter
607 ....By scan of a sonic receiver
608 ....By Bragg diffraction
609 ...Measuring or testing system having threshold, gating, delay or blocking means
610 ....Electronic gating
611 .....Adjustably responsive to information signal
612 .....Plural gating
613 .....Of noise

	VIBRATION
	.By mechanical waves
	..Beamed
	...Measuring or testing system having threshold, gating, delay or blocking means
	....Electronic gating
614	.....Of signals to pass only echoes from within test body
615	.....Of signals to pass only echoes from front surface or flaw and from rear surface of test body
616	.....Of signals to pass only echoes from rear surface of test body
617	....Having mechanical delay or mechanical blocking
618	...Measuring or testing system having scanning means
619	....Programmed scan
620	....By reflected wave
621	.....Having compound scan
622	.....Of tubing, vesssel, or cylindrical object
623	......Scan from within object
624	.....Having separate sonic transmitter and receiver
625	.....Having plural sonic type transmitter or (receiver) transducers
626	......Switched
627	...By reflected wave
628	....Having plural sonic type transmitters-receivers transducers
629	....Having unitary sonic type transmitter-transducer
630	.....Establishing resonance in a test body
631	.....Having automatic gain control
632	...Sonic wave transmitter or receiver transducer
633	....Having transducer scanning means
634	.....Automatic transducer positioning
635	.....Rolling contact
636	......On railroad rails
637	......Around cylindrical object
638	......Along cylindrical object
639	......Transducer forms wheel or is within a wheel
640	.....Scanning curved surface in direction of curvature
641	.....Plural sonic transmiters or receivers
642	....Having wave shaping means
643	....Nonvibrating transducer
644	....Having significant coupling means
645	..Acoustic parameter
646	...Amplitude, power, or intensity
647	....Current generating or modifying
648	.....Frequency sensitive
649	.Sensing apparatus
650	..Torsional
651	..Vibratable reed
652	..With inertia element
653	...With light beam indicator
654	...With electrically controlled indicator
655	..With light beam indicator
656	...By optical holography
657	...By frequency or phase shift
658	..With electrically controlled indicator
659	...Spectrum analysis
660	...Rotating machinery or device
661	...Having a probe
662	.Vibrator
663	..Table, platform, or other support
664	...Circuitry
665	...Having fluid bearing or fluid pressure actuated
666	...Having spring support
667	...Eccentrically vibrated
668	...Electromagnetically vibrated
669	..Vehicle shaker
670	...Treadmill
671	..Having a fluid jet
672	..Having a rotatable imbalanced mass
73	MOISTURE CONTENT OR ABSORPTION CHARACTERISTIC OF MATERIAL
74	.By residual capacity measurement
75	.By heat conductivity
76	.By desiccation or extraction
77	.By wet and dry bulb temperature
78	HARDNESS
79	.Scleroscope or rebound
81	.By penetrator or indentor
82	..Impact type
83	..With successive minor and major load
84	..Soil bearing capacity
85	..Penetrator element
86	EMBRITTLEMENT OR EROSION
87	DUCTILITY OR BRITTLENESS
760	SPECIMEN STRESS OR STRAIN, OR TESTING BY STRESS OR STRAIN APPLICATION
761	.Threaded fastener stress
762	.Indicating coating or sheet providing direct visual indication (e.g., cracking, color change)
763	.Specified electrical sensor or system
764	..Having level attainment counter
765	..Compensation (e.g., linearization)
766	...Temperature
767	..Plural sensors at single location (e.g., diverse orientation, plural level)
768	..Sensor embedded in specimen
769	..Coupling circuit for specific additional purpose (e.g., noise suppression) or having specified structure
770	...Peak indicating system
771	...Having selector switching means
772	...Plural sensed signal system
773	...Specified signal transmitting link
774	..Specified sensor structure
775	...Bonded to specimen
776	....Sensor comprises coating
777	...Semiconductor
778	...Vibratory element
779	...Magnetic or inductive
780	...Capacitive
781	.Specified load or strain transmission device from specimen to electrical detector
782	..Strain multiplier
783	.Deformation or change in stress after fracture, cutting, or boring
784	.Earth stresses
785	.Prestressed specimen
786	.In static structures (e.g., buildings, bridges)
787	.Stress or strain history of a specimen without application of a load
788	.By loading of specimen (e.g., strength of material test)
789	..Stress-strain relationship determination
790	...Compression
791	...Graphical output
792	....Moving chart
793	.....Drum
794	..Plural diverse stress-strain tests or composite loads
795	...Strain
796	...Tension-compression
797	....Alternating
798	....Hydraulic or pneumatic actuation
799	..Specimen cracking or crack propagation

	SPECIMEN STRESS OR STRAIN, OR TESTING BY STRESS OR STRAIN APPLICATION
	.By loading of specimen (e.g., strength of material test)
800	..Optical
801	..Acoustic emission
802	..Aircraft structure
803	..Concrete
804	..Model of structure to determine structure properties
805	..Varied in response to specimen condition other than failure
806	..Varied according to predetermined pattern
807	...Applied directly by fluid pressure
808	...Repetitive
809	....Plural specimen
810	....To failure
811	....Electric control circuit or particular loading device
812	....Flexing, bending, or folding
813	....Compressive
814	....Torsional
815	....Shear
816	...Hydraulic or pneumatic actuation
817	...Motor driven actuating screw
818	..Compressional
819	...Plural specimen or multiaxial loading
820	...Fluid desplacement provides indication
821	...To fracture, crushing, or yield point
822	...Plastic flow or creep
823	...Residual deformation (e.g., consolidation)
824	...By rotating squeezing element
825	...With hydraulic or pneumatic actuation
826	..Tensile
827	...Bond test
828	...Strand or chain test
829	....By roller
830	....To failure
831	...Having specified clamp
832	....Interior to specimen
833	....Jaws
834	...To failure
835	....Tear
836	...Pendulum dynamometer
837	...Hydraulic or pneumatic actuation
838	..Rupture or burst strength of sheet material by transverse loading
839	...Including cutting or piercing element
840	...Hydraulic or pneumatic actuation
841	..Shear
842	...Bond
843	...By rotary element
844	...Impact (e.g., pendulum)
845	...To fracture or failure
846	...Opposing work holders including specimen
847	..Torsion
848	...To failure
849	..Bending, flexing, or folding
850	...Weld testing
851	...To failure or fracture
852	...Loading means intermediate stationary end holders or supports
853	...Having opposite ends of specimen clamped
854	...By angular displacement of opposite ends of specimen
855	.Support, holder, or housing for unspecified type electrical sensing element
856	.Specimen clamp, holder, or support
857	..With hydraulic or pneumatic actuation of grip
858	..Winding drum or roller type
859	..With wedging or camming elements contacting specimen
860	..Opposed pair
104	SURFACE AND CUTTING EDGE TESTING
105	.Roughness
112	POWER PLANT OR UNIT EFFICIENCY
113	.Automobile fuel consumption
114	..Miles per gallon
115	.Pressure derivative
116	MOTOR AND ENGINE TESTING
117	.With vehicle wheel supporting roller or belt
117.1	.Utilizing a test chamber or tank to simulate operating conditions
117.2	.Disparate tests under operating conditions
117.3	..With continuous operation
117.4	.Thrust measurement, e.g., jet engine
118.1	.Testing auxiliary unit
118.2	..Intake air flow
119 R	.Motor part
119 A	...Fuel injection tests
120	..Piston ring
121	BRAKE TESTING
122	.Slidable platform
123	.Roller or belt wheel support
124	..Relatively shiftable front and rear wheel supports
125	..Inertia type
126	..With driving effort indication
127	...Single wheel portable unit
128	.Road test attachment or adjunct
129	.Vehicle installation
130	.Single wheel rotating and resistance measuring means
131	..Torque measuring lever
132	.Brake depressor with measuring means
862	DYNAMOMETERS
862.01	.For testing force-biased connections
862.02	..Ski bindings
862.03	.For testing relative pulling power (e.g., for contests)
862.04	.Responsive to multiple loads or load components
862.05	..Applied to guidance means
862.06	..On machine tools
862.07	..To determine distribution of tensile stress
862.08	.Responsive to torque
862.09	..By absorption
862.11	...Having plural brake means
862.12	...Having friction brake means
862.13	....Automatic load control
862.14	...Having fluid brake means
862.15	....Air brakes
862.16	....Automatic load control
862.17	...Having magnetic or electromagnetic brake means
862.18	....Automatic load control
862.19	..During transmission
862.21	...For making or breaking threaded connections (e.g., torque measuring wrenches)
862.22	....With variable capacity or sensitivity
862.23	....With detection of specific torque value or condition (e.g., peak torque)
862.24	.....Rate of change
862.25	....Power tongs
862.26	....Bending beam type
862.27	...With recording or totalizing means
862.28	...With electrical computation of horsepower
862.29	...By measuring reaction forces of a prime mover
862.31	...By measuring reaction forces of transmission gearing

	DYNAMOMETERS
	.Responsive to torque
	..During transmission
862.32	...By measuring elastic deformation of a torque transmitting member
862.33	....Electrical
862.34	.....Phase angle detection
862.35	.....Using resistance strain gages
862.36	...By measuring electrical or magnetic properties of a torque transmitting member
862.37	...By measuring the fluid pressure of a hydraulic coupling
862.38	.Responsive to force
862.39	..To determine tension on a stretched flexible element
862.41	...By measuring vibrations (e.g., resonant frequency)
862.42	...By applying a measured tensioning force
862.43	....Racket stringing
862.44	....With winding or reeling means
862.45	...By measuring deflection or deflecting force
862.46	....With angular deflection
862.47	....Using elastically deformable force measuring means
862.48	.....Electrical
862.49	..To determine axial thrust on a rotating machine element
862.51	..With recording means
862.52	..With variable capacity or sensitivity
862.53	..With detection of specific force value or condition (e.g., peak force)
862.54	..Combined
862.55	...With pressure applying roller (e.g., mill roll)
862.56	...With hoisting means
862.57	...With towing means
862.58	..By measuring a fluid pressure
862.59	..By measuring vibrations (e.g., resonant frequency)
862.61	..By measuring a counterbalancing or restoring force
862.62	..By measuring elastic deformation
862.63	...With pressure or temperature compensation
862.64	...Electrical
862.65	....Using resistance strain gages
862.66	.....Shear-type
862.67	.....Including specified electrical circuit
862.68	..By measuring electrical properties
862.69	..By measuring magnetic properties
146	TIRE, TREAD OR ROADWAY
146.2	.Tire inflation testing installation
146.3	..By direct fluid pressure reading
146.4	...Telemetric (e.g., indicator on cowl)
146.5	....Electric
146.8	...Tire stem attachments
147	WIND TUNNEL: AERODYNAMIC WING AND PROPELLER STUDY
148	MODEL BASIN AND TESTING TANK
149	VOLUMETRIC CONTENT MEASURING
150 R	COATING MATERIAL: INK ADHESIVE AND/OR PLASTIC
150 A	..Bond strength
151	BORE HOLE AND DRILLING STUDY
151.5	.Drill depth-rate
152	.Formation logging
153	..By drill mud or core analysis
154	..Thermal
155	.Fluid intrusion, theft of flow study
156	STATISTICAL RECORD VERIFYING
157	RECORD STRIP SPROCKET HOLE TESTING
158	HOISTING CABLE AND ROPE
159	SHEET, WOVEN FABRIC OR FIBER
160	.Filament
161	SPRING TESTING
162	TOOTHED GEAR
163	COIN
164	MINER'S LAMP
167	ORDNANCE AND PROJECTILE
168	BLOWER, PUMP AND HYDRAULIC EQUIPMENT
169	FLOUR, DOUGH OR BREAD
172	ORTHOPEDIC PRESSURE DISTRIBUTION
178 R	NAVIGATION
178 H	..Helicopter
178 T	..Take-off and landing monitors
179	.Rate of climb (pressure type)
180	.Leeway incidence or side-slip
181	.Ship's log
182	..Pressure differential type
183	...With integrating means
184	..Drag type
185	...Rotary
186	..Vane type
187	..Rotary
170 R	METEOROLOGY AND OCEANOLOGY
170 A	..Oceanographic
171	.Rain gauge
188	.Fluid flow direction
189	..With velocity determination
861	VOLUME OR RATE OF FLOW
861.01	.With indirect temperature or density compensation
861.02	..Electrical
861.03	...Digital
861.04	.Of selected fluid mixture component
861.05	.By measuring transit time of tracer or tag
861.06	..With auto correlation or cross-correlation detection
861.95	..Thermal tracer or tag
861.07	.By measuring tracer concentration
861.08	.By measuring electrical or magnetic properties
861.09	..Ionization type
861.11	..Electromagnetic induction (e.g., Faraday type)
861.12	...With detecting electrodes
861.13	....Including permanent magnet or D.C. field
861.14	....For dielectric fluids
861.15	....Plural pairs of detecting electrodes
861.16	....Including electrically interconnected or synchronized input and output circuit
861.17	.....Selective or periodic sampling
861.18	.By measuring vibrations or acoustic energy
861.19	..Produced by fluidic oscillator
861.21	..Caused by fluid interaction with obstacle
861.22	...Vortex shedders
861.23	....Acoustic
861.24	....Movable sensor responsive to vortices
861.25	..Reflection or scattering of acoustic waves
861.26	..Deflection of acoustic waves
861.27	..Transit time of acoustic waves
861.28	...Transmitted along single path
861.29	....In both directions simultaneously
861.31	...Transmitted along parallel paths
861.32	.By measuring swirl rate imparted by static means
861.33	..With turbine in a swirl chamber
861.34	..Precess type
861.35	.Mass flow by imparting angular or transverse momentum to the fluid
861.36	..Motor driven
861.37	...Transverse rotation or oscillations
861.38	....With transverse velocity gradient (e.g., Coriolis, gyroscopic principle)

	VOLUME OR RATE OF FLOW
861.39	.Using an applied fluid jet
861.41	.By counting drops, bubbles, or particles
195	.System
196	..Flow comparing
197	..Compound meter
198	.Combined
199	..With pressure regulator or demand limit
200	..With gas and liquid separator
201	..With connection or box
202	.Proportional
202.5	..Thermal sensing of flow
203	..With valved proportioning means
204.11	.Thermal type
204.12	..With conduit extending between heat sinks
204.13	..With auxiliary fluid contacting or in heat exchange relation with flow path (e.g., thermodilution)
204.14	..Including digital or pulse measuring circuitry
204.15	..Including detail of feedback or rebalancing circuitry
204.16	...By control of a separate heating or cooling element
204.17	..With distinct heating circuitry for a self-heated sensor
204.18	..Including response characteristic or condition compensation
204.19	...For temperature
204.21	..With fluid flow deflector or restrictor (e.g., baffle, constriction)
204.22	..With sensor housing
204.23	..Having particular electrical heating, cooling, or thermal sensing element
204.24	...Thermoelectric junction
204.25	...Resistive element
204.26	....With substrate carrier (e.g., thin film)
204.27	....Wire type (e.g., hot wire)
861.42	.Using differential pressure
861.43	..With time integration
861.44	...By electrical means
861.45	...By mechanical means
861.46	....Including pressure applied to liquid column or reservoir
861.47	..Pressure applied to moveable member (e.g., a diaphragm)
861.48	...With linearization (e.g., square root extraction)
861.49	..Pressure applied to liquid column or reservoir
861.51	...With linearization
861.52	..With restriction
861.53	...Automatically variable restriction
861.54	....Slotted piston or cylinder
861.55	....Cone and ball or disk
861.56	.....With structure of coupling to indicator
861.57	.....With structure of float, float tube, or float guide
861.58	....Orifice and tapered plug
861.59	...Including recirculation pump
861.61	...Orifice or flow nozzle
861.62	....Adjustable
861.63	...Venturi
861.64	....Inlet or outlet structure
861.65	..Pitot
861.66	...Sensing at plural transverse locations
861.67	...Adjustable
861.68	...With heating element
861.69	..Centrifugal
215	.Weir type
216	..Submerged orifice or discharge nozzle
	.Tank type
217	..Rotary tank or bucket
218	...With power drive
219	..Plural measuring chamber
220	...With fluid-pressure operated valve
221	...With float operated valve
222	...With siphon discharge
223	..Single measuring chamber
224	...With float operated valve
225	....With trip gear
226	...With siphon discharge
227	.Area-velocity integrating
861.71	.By measuring thrust or drag forces
861.72	..By changing fluid direction
861.73	..Impact of particulate material
861.74	..On a vane
861.75	...With rotation about a fixed axis
861.76	....Spring biased
861.77	.Using rotating member with particular electrical output or circuit
861.78	..With pick-up coil
861.79	.Using turbine
861.81	..With response modification
861.82	...Pressure responsive valve or restriction
861.83	...Axial supply and delivery
861.84	....Differentially responsive turbines
861.85	..Anemometers
861.86	..With fluid directed radially outward
861.87	..With flow direction retained in a plane perpendicular to turbine axis
861.88	...Mechanical coupling to indicator
861.89	..Axial supply and delivery
861.91	...With structure to reduce friction or wear
861.92	...With structure of bearing or turbine support structure
861.93	...With mechanical coupling to indicator
861.94	...With magnetic coupling drive assembly
232	.Expansible chamber
233	..With variable indicator drive
234	..Wet type (e.g., liquid seal)
235	...Rotary drum
236	...Oscillating bell or drum
237	...Reciprocating bell
238	...Nutating bell
239	..Reciprocating piston or cylinder
240	...Transversely reciprocating piston and cylinder
241	...Oscillating cylinder
242	...Valveless
243	...Duplex
244	....Wobble plate or cam
245	....With transverse shaft
246	.....With single distributing valve
247	...Radial cylinder
248	...Valved piston
249	...With fluid actuated valve
250	...With piston or rod actuated valve gear
251	....With trip gear
252	..Oscillating piston
253	..Rotary piston or cylinder
254	...With compensating bypass
255	...With orbital movement
256	....Plural stationary abutment
257	....Single stationary abutment
258	.....Nutating piston
259	...With sliding vane
260	...With swinging vane
261	...With interengaging pistons
262	..Diaphragm or collapsible wall
263	...Multiple diaphragm
264	....Duplex
265	....With rotary valve
266	.....Crank operated
267	......With flag rod

	VOLUME OR RATE OF FLOW
	.Expansible chamber
	..Diaphragm or collapsible wall
	...Multiple diaphragm
268	....With oscillating or reciprocating valve
269	...Single diaphragm
270	....With diaphragm actuated valve trip gear
271	....With fluid actuated valve
272 R	.Element
272 A	...With remote register
273	..Casing
274	...Diaphragm meter type
275	..Antireversing mechanism
276	...Check valve
277	.."Frostproof" construction
278	..Diaphragm mounting
279	..Diaphragm
280	...With oiling structure
281	..Tangent adjustment
290 R	LIQUID LEVEL OR DEPTH GAUGE
290 B	..Ullage volume
290 V	..Vibratory type
291	.With other measuring device
292	..Thermometer
293	.With illumination
294	.With funnel or hose nozzle
295	.Thermal type
296	.Weighing type
297	.Test cock type
298	.Exploring tube
299	.Hydrostatic pressure type
300	..Bathometer type
301	..With electrically controlled indicator
302	..With fluid displacement or replenishment
303	...Suction type or vacuum tank action
304 R	.Immersible electrode type
304 C	...Capacitative
305	.Float
306	..Combined
307	...With warning signal or alarm
308	....Electric
309	..Buoyancy type
310	..Total registering
311	..Multiple floats
312	..Recording
313	..With electrically controlled indicator
314	..With position sensing
315	..With float lock
316	..With fluid transmission
317	..Pivoted float arm
318	...With flexible cable transmission
319	..Vertically reciprocable
320	...With spiral cam or guide
321	...With flexible cable transmission
322	...Indicator stem attached
322.5	..Float structure
323	.Sight glass
324	..With cleaner
325	..With guard or casing
326	...Boiler type
327	..Reflector or magnifier
328	..Boiler type
329	...Duplex or multiple section
330	...Transparent closure plate type
331	....Bull's eye type
332	...With valve
333	....Safety feature
334	..Transparent closure plate type
335	HYGROMETER
336	.Combined
336.5	.With electrical circuit
338	.Wet and dry responsive elements
338.3	..Actuate relative reading means
338.6	..Relative air motion creating means (e.g., sling psychrometer)
337	.Expansible sorption element
337.5	..Tensioned or twisted element type
379	MUSCULAR STRENGTH
380	.Spring scale instrument
381	..Pivotal indicator
382 R	GRAVITATIONAL DETERMINATION
382 G	..Gravitational variation
383	.Torsion balance
488	SPEED OR ACCELERATION
489	.Recording or registering interrelated factors
490	.With distance registering means
491	.With means for retaining reading
492	..Maximum acceleration
493	.Structural installation or mounting means
494	..Installed in rotary speed source
495	.Indicating diverse conditions
496	.Vibration control or antistick means for reading structure
497	.Temperature compensator
498	.Adjusting means for reading structure
499	.Illuminated reading device
500	.Liquid surface is or moves reading means
501	..Surface of revolving liquid body
502	.Externally connected pressure gauge gives reading
503	.Means integrating time and acceleration
504	.With gyroscopic means
505	.Means measuring or testing change of orientation
506	.Means integrating intermittent speed source impulses
507	.Comparison to a fixed standard, master or reference speed device
508	.With governor drive failure responsive means
509	.With response to a nonspeed condition
510	.Response to multiple sensing means or motion conditions
511	..Response to both velocity and acceleration
512	...Centrifugal-type velocity sensor and separate inertial means
513	.With manual control
514	.Response to rate of change of speed
515	..Fluid
516 R	...With electrical or magnetic means
516 LM	.....With liquid mass
517 R	..Electrical or magnetic
517 AV	....With vibrating element
517 B	....With rebalance system
517 A	....Angular acceleration
518	.Electrical or magnetic
519	..Permanent magnet type
520	...With flux adjusting means
521	.Fluid
522	..Dampening means
523	..Expansible chamber devices
524	..Fluid coupling or torque convertor type
525	..Brake (e.g., vanes in air)
526	.With dampening or shock-absorbing means
527	.With input means
528	..Selective speed transmitter
529	..Frictional (e.g., friction wheels)
530	.With output transmitting mechanism
531	..With transmission adjustment means
532	..Gear
533	...Rectilinear rack
534	..Surface and follower
535	.Centrifugal weight type
536	..Weight lever arm or pivot automatically variable during operation
537	..Bias automatically variable during operation

SPEED OR ACCELERATION
.Centrifugal weight type
..Bias automatically variable during operation
538 ...Snap action
539 ..Limit stop for weight
540 ..With adjusting means
541 ...Diverse
542 ...Biasing weight
543 ...Lever or gear adjustor
544 ...Adjusting screw means and bias spring concentric to centrifugal axis
545 ...Spring and adjustor connect paired weights
546 ..Leaf spring biasing means
547 ..Toggle joint mounted
548 ..Radially projecting striker type
549 ..Rigid mass crossing axis at an acute angle
550 ..Weighted bell crank lever type
551 ..Surface and follower (e.g., cam or weight as wedge)
384 BAROMETER (E.G., ALTIMETER)
385 .Mercury
386 .Aneroid
387 ..Settable
700 FLUID PRESSURE GAUGE
701 .Null balance type
702 .Vibration type
703 ..Ultrasonic
704 ..Vibrating strip or wire
705 .Photoelectric
706 .With protective separator
707 .With fluid pulsation dampener
708 .With pressure and/or temperature compensation
709 .With excess or maximum registering
710 .With steam trap
711 .With variable drive
712 .With recorder
713 .With float
714 .Combined
715 .Diaphragm
716 ..Multiple and/or differential
717 ...With electrical readout
718 ....Capacitive
719 ....Resistive
720 ....Strain gauge
721 .....Piezoresistive
722 ....Electromagnetic
723 ..With electrical readout
724 ...Capacitive
725 ...Resistive
726 ....Strain gauge
727 .....Piezoresistive
728 ...Electromagnetic
729 ..Capsule or bellows
730 ..Expansible conduit
731 ..Sack
732 .Bourdon
733 ..With electrical readout
734 ...Resistive
735 ...Electromagnetic
736 ..Multiple and/or differential
737 ..Intermediately supported
738 ..Safety pressure release casing
739 ..With mechanism dampening
740 ..With zeroizing adjustment
741 ..Bourdon tube and mounting
742 ...Helical Bourdon tube
743 ...Spiral Bourdon tube
744 .Piston
745 ..With electrical readout
746 ...Resistive
747 .U-tube liquid column
748 ..Sphygmomanometer
749 ..With electrical readout
750 ...Resistive
751 .Balance
752 .McLeod type
753 .Electrical
754 ..Semiconductor
755 ..Pirani type
756 .Mounting and connection
863 SAMPLER, SAMPLE HANDLING, ETC.
863.01 .Automatic control
863.02 ..Quantity or rate of flow responsive
863.03 ...Rate of sample flow continuously controlled
863.11 .With heating or cooling
863.12 ..And separation
863.21 .With constituent separation
863.22 ..Particle impact
863.23 ..Sieve, filter, or semipermeable membrane
863.24 ...Cleaning
863.25 ...Changing feature
863.31 .Plural parallel systems
863.32 ..Pipette
863.33 ..Plural capture, single receiver
863.41 .Flow divider, deflector, or interceptor
863.42 ..Attached to mouth of dumpable receptable
863.43 ..Having precapture flow guide or homogenizer
863.44 ...Oscillating or reciprocating
863.45 ...Rotary
863.51 ..Having an upstream-facing-opening-type capture element
863.52 ...With receptacle
863.53 ....Mounted for flow zone traverse
863.54 ...Mounted for reciprocation
863.55 ...Oscillating
863.56 ...Rotary
863.57 ...With blocking means
863.58 ...Pitot tube type
863.61 ..Branched conduit
863.71 .Conduit or passageway section capture chamber
863.72 ..Single valve unit
863.73 ...Capture chamber within valve unit
863.81 .Withdrawing through conduit or receptacle wall
863.82 ..Capture element movable to plural loci
863.83 ..With metering means or pump
863.84 ...Expansible chamber
863.85 ..Lock or seal for sampler insertion or removal
863.86 ..Valve or restriction
863.91 .Conveyor coacting
863.92 ..Integral with conveyor structure
864 .Capture device
864.01 ..Pipette or cannula
864.02 ...Self-filling of self-limiting
864.03 ...With user mouth protection
864.11 ...With suction applying and liquid discharge means
864.12 ....With separate diluent supply
864.13 ....Piston within pipette
864.14 ....With particular connection or release means
864.15 ....With valve for connection to external pressure source
864.16 ....Piston and cylinder
864.17 .....Plural
864.18 .....Plural or adjustable limit stops
864.21 ...With sample supply to analyzer
864.22 ...With pipette contacting second fluid supply
864.23 ...Pipette fixed; source movable
864.24 ...Pipette longitudinally movable
864.25 ....And transversely movable
864.31 ..With capture device transporter
864.32 ...Cyclically operated scoop
864.33 ..Capture by fluid current
864.34 ..Sample meter or pump

	SAMPLER, SAMPLE HANDLING, ETC.
	.Capture device
	..Sample meter or pump
864.35	...Chamber with alternate pressure or vacuum applier
864.41	..Cutter, tearer, or scraper
864.42	...Jaw
864.43	...Auger or drill
864.44	...Corer
864.45	....With corer advancing means
864.51	..Receptacle type
864.52	...Preevacuated
864.53	...Mold
864.54	....With suction applier
864.55	....With diminutive fill passageway
864.56	.....Mating sections
864.57	......Labyrinth
864.58	....With sample conditioner
864.59	....With holder or connector
864.61	...Fluid displacement
864.62	...Expansible chamber
864.63	...With valve or closure
864.64	....Side opening
864.65	....Contact actuated
864.66	....Support force or inertia actuated
864.67	....Messenger actuated
864.71	..Material for particulate adhesion
864.72	..Capillary attraction retention
864.73	..Conduit
864.74	...With penetrating means
864.81	.Analyzer supplier
864.82	..Having sample capsule holder
864.83	..Having sample confining chamber
864.84	...Connector for separable holder
864.85	..Connector for separable holder
864.86	...Septum structure
864.87	...Syringe with connector
864.91	.Sample holder
426	MEASURING VESSEL
427	.With depth indication
428	..Removable indicator
429	.Capacity adjustable
430	INSTRUMENT MECHANISM DAMPENING
431	INSTRUMENT CASING
865	MASS
865.1	HUMAN STRESS LIMIT (E.G., DEPRESSION GAUGE FOR DIVERS)
865.2	HYDRAULIC ALTIMETER
865.3	TESTING BY IMPARTING MOTION
865.4	ANALYZING BODILY MOVEMENT (E.G., SKILLS OR KINETIC OF HANDWRITING)
865.5	PARTICLE SIZE
865.6	SIMULATED ENVIRONMENT (E.G., TEST CHAMBERS)
865.7	TOUCH OR TASTE
865.8	INSPECTING
865.9	TESTING OF APPARATUS
866	TESTING OF MATERIAL
866.1	INSTRUMENT MECHANISM OR TRANSMISSION
866.2	.Rate of change
866.3	DISPLAY OR DISPLAY DEVICE DETAILS
866.4	SPECIMEN MODEL OR ANALOG
866.5	PROBE OR PROBE MOUNTING
432.1	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	AUTOMATIC GAIN CONTROL
901	DIGITAL READOUT
	******************************
	DIGESTS
	******************************
DIG 1	Vibration
DIG 2	Magnetostrictive
DIG 3	Hall effect
DIG 4	Piezoelectric
DIG 5	Liquid levels with magnetic transmission
DIG 8	Fluid circuits
DIG 9	Molten metal samplers
DIG 10	Instrument mechanisms with acceleration compensation
DIG 11	Photoelectric cell

1 R	MISCELLANEOUS
1 SS	..High frequency vibratory devices
1.5	ESCAPEMENTS
2	AUTOMATIC OPERATION OR CONTROL (E.G., TRIPS)
3	.Speed controlled
3.2	..Valve gear trips (e.g., steam engine "Corliss" type)
3.5	.Retarded
3.52	..Plural, sequential, trip actuations
3.54	..Clock train
3.56	...Winding knob trip (e.g., alarm mechanism)
4	.Hit and miss
5 R	GYROSCOPES
5 F	..Flexure hinges for gyros
5.1	.With caging or parking means
5.12	..Rotor spin and cage release type
5.14	..And resetting means
5.2	.With gimbal lock preventing means
5.22	.Combined
5.34	.Multiple gyroscopes
5.37	..With rotor drives
5.4	.Gyroscope control
5.41	..Erecting
5.42	...By plural diverse forces
5.43	...By jet
5.44	...By weight
5.45	...By friction
5.46	...By magnetic field
5.47	...By motor torque
5.5	..Damping
5.6 R	.With pick off
5.6 A	...Optical
5.6 B	...Pneumatic
5.6 C	...Conducting liquid
5.6 D	...Electrical
5.6 E	...Electrical and magnetic
5.7	.With rotor drive
5.8	.Vertical gyroscopes
5.9	.Horizontal gyroscopes
843	INTERRELATED MOTOR AND TRANSMISSION CONTROL
880	.Including fluid drive
881	..Steer by driving
882	..Impeller-turbine type
883	...With countershaft gearing
884	....And turbine shaft brake
885	....And clutch control
886	....Control of or by fluid drive
887	...With hydrodynamic braking
888	...With nonratio brake
889	...Control responsive to fluid drive
890	...With clutch control
891	...With fluid unit vane control
892	...Fill and empty type fluid units
844	.Control by sensed ambient condition, pattern indicia or external signal
845	.Load motion limit control
846	.Control by manual brake on transmission output
847	.Plural driving motors
848	.Reversible rotary driving motor
849	.Transmission change by moving motor
850	.Motor starting interlock
851	.Motor ignition intermitting for transmission change
852	..Having safety means limiting duration of intermission
853	..Controlled by motor input manifold pressure
854	..Initiated by positioning accelerator
855	...Initiation inhibited by sensed condition
856	.Sensed condition responsive control
857	..Of motor energy input
858	...Diminution during transmission change
859	...Transmission output condition responsive
860	...Transmission setting contingent
861	..Of transmission change
862	...By acceleration of transmission driven load
863	...By motor input manifold pressure
864	....Response regulated by transmission output condition
865	...Accelerator position regulated response
866	....Electrically coordinated signals
867	....Hydraulically coordinated signals
868	.....Opposed pressures control shift valve
869	......Plural shift valves
870	...Accelerator overrule of responsive control
871	....Overrule inhibited by sensed condition
872	.Transmission change modifies motor input control
873	..Change resets motor idling control
874	..Completing change increases motor input
875	..Change to neutral idles motor
876	...Motor input variable in neutral
877	.Transmission change triggered by positioning accelerator
878	.One control blocks another
879	.Motor control linkage mounted on manual gear shift lever
6	ENGINE STARTERS
7 R	.Automatic
7 A	...Separate power mesher
7 B	...Holders
7 C	...Clutch connection
7 D	...Worm and wheel
7 E	...Reduction gearing
8	.Radial meshing
9	.Cam operated
10 R	SHAFT OPERATORS (RADIO TUNER TYPE)
10 A	..Remote control
10.1	.Preselected position
10.15	..Step by step
10.2	..Rotatable stop and projectable abutment
10.22	..Digital dial type
10.27	..Plural operator
10.29	...Cam and follower
10.31	....Adjustable cam
10.33	.....Sliding operator
10.35	....Adjustable follower
10.37	.....Sliding operator
10.39	...Rack and pinion
10.41	..With detent or clicker
10.45	.Plural shafts
10.5	.Plural speed
10.52	..Planetary
10.54	..Separate operators
10.6	.Cam and follower
10.7	.Tensioned flexible operator
10.8	.Gear drive
10.85	..Worm or screw
10.9	.Lever and linkage drive
813 R	ROTARY MEMBER OR SHAFT INDEXING, E.G., TOOL OR WORK TURRET
813 C	..Control means
813 L	..Locking means
814	.With safety device or drive disconnect
815	.With locating point adjusting
816	.Preselected indexed position
817	..Sequential
818	...Skip position
819	...Held by torque
820	...Geneva or multilated gear drive
821	...Velocity control
822	...Interlocked rotator and brake

	ROTARY MEMBER OR SHAFT INDEXING, E.G., TOOL OR WORK TURRET
	.Preselected indexed position
	..Sequential
	...Interlocked rotator and brake
823	....Diverse type brakes
824	.....With axially acting friction brake
825	.Plural operators or input drives
826	.With means to axially shift shaft
827	.Single revolution input effects desired fractional output
11	POWER TAKE-OFF
12	.Speedometer
13	.Wheel take-off
14	..Wheel bed type
15	..Supported pulley
15.2	.Plural take-off shafts
15.4	.With independent change speed gearing
15.6	.From shaft extension
15.63	..Prime mover shaft, e.g., crank shaft
15.66	..Change speed transmission shaft
15.69	..Vehicle propeller shaft
15.8	.Intermediate ends of power transmitting line
15.82	..Vehicle propulsion transmitting line
15.84	...Between prime mover shaft and transmission
15.86	...Drive from transmission gear
15.88	...Between transmission and propeller shaft
16	POWER TABLES AND STANDS
17	WASHER AND WRINGER
17.5	FULL STROKE MECHANISM
17.8	MOTION TRANSFER THROUGH INPERFORATE FLEXIBLE SEAL
18	FLEXIBLE SEALING DIAPHRAGM ATTACHED TO MOVING ROD AND TO CASING
18.1	.Pivoting or nutating rod
18.2	.Longitudinally reciprocating rod
828	ALTERNATING-MOTION DRIVEN DEVICE WITH MEANS DURING OPERATION TO ADJUST STROKE
829	.Constant length stroke with means to displace end limits
830	..Cyclical displacement responsive to the alternating-motion
831	.Stroke adjustable to zero and/or reversible in phasing
832	..Plural driving means to jointly drive the driven device
833	..Device driven from selected points on oscillating link
834	..Driving lever with adjustable pivot point
835	..Eccentric and strap drive, shiftable eccentric
836	...Changing the extent of eccentricity
837	..Crank pin drive, shiftable pin
838	..Cam and follower drive
839	...Axial type cam (e.g., wabbler type)
840	ROTARY DRIVEN DEVICE ADJUSTABLE DURING OPERATION RELATIVE TO ITS SUPPORTING STRUCTURE
841	.Screw and nut adjusting means
842	.Rack and pinion adjusting means
	MECHANICAL MOVEMENTS
20	.Oscillating to reciprocating and alternating rotary
21	.Oscillating to reciprocating and intermittent rotary
22 R	.Rotary to reciprocating and rotary
22 A	...Rotary to reciprocating or rotary
23	.Rotary to reciprocating and alternating rotary
24	.Rotary to reciprocating and intermittent rotary
25	.Rotary to or from reciprocating or oscillating
26	..Head motions
27	..Reciprocating carriage motions
28	...Phonograph type
29	..Rack and pinion type
30	...Shifting rack
31	...Shiftable pinion
32	...Segmental pinion
33	...Alternately rotated pinion
34	...Clutchable gears
35	....Bevel
36	..Overcoming dead center
37	..Belt or chain carried member
38	..Crank, lever, toggle and slide
39	..Crank, lazy-tong and slide
40	..Crank, pitman, lever and slide
41	...Pump jack type
42	..Crank, pitman and lever
43	...Multiple levers
44	..Crank, pitman and slide
45	..Crank, lever and slide
46	...Rack connections
47	..Crank and lever
48	...Slidable connections
49	..Crank and slide
50	...Slidable connections
51	..Crank and multiple pitmans
52	..Planetary gearing and slide
53	..Cam, lever and slide
54	..Cam and lever
55	..Cam and slide
56	...Axial cam
57	....Grooved
58	.....Multiple screw
59	.....Alternately rotated screw
60	...Wabbler type
61	..Unbalanced weights
62	..Trammel-pitman
63	.Rotary to rotary
64	..Inertia or centrifugal transmitters
65	..Crank, pitman, lever and crank
66	..Crank, lever and crank
67	..Crank, pitman and crank
68	..Cranks, link connected
69	..Cranks, slidable connections
70	.Rotary to alternating rotary
71	..Mangle connections
72	...Shiftable driven gear
73	....Central teeth
74	...Multilated gearing connections
75	..Crank, pitman and lever
76	..Reciprocating rack connections
77	...Crank and pitman actuator
78	...Simple crank actuator
79	..Oscillating rack connections
80	...Mangle actuated
81	...Crank and pitman actuator
82	..Flexible connector type
83	..Associated inertia devices
84 R	.Rotary to intermittent unidirectional motion
84 S	...Space machines
86	.Rotary to gyratory
87	..Unbalanced weight
88	.Reciprocating or oscillating to intermittent unidirectional motion
89	.Reciprocating or oscillating to or from alternating rotary
89.1	..Including inertia device
89.11	...With rack and pinion
89.12	....Rectilinear rack
89.13	..Including bevel gears
89.14	..Including worm
89.15	..Including screw and nut
89.16	..Including spur gear
89.17	...With rack
89.18	....Curvilinear rack
89.19	.....With biasing means

	MECHANICAL MOVEMENTS
	.Reciprocating or oscillating to or from alternating rotary
89.2	..Including flexible drive connector (e.g., belt, chain, strand, etc.)
89.21	...With sprocket wheel
89.22	...With pulley
96	.Oscillating to oscillating
97.1	..Snap action
97.2	...Plate spring
98	..Geared connections
99 R	.Reciprocating to or from oscillating
99 A	...Inclined ramp
100.1	..Snap action
100.2	...Plate spring
101	..Compound lever and slide
102	..Lever and slide
103	...Straight line motions
104	...Slidable connections
105	...Link connections
106	...Toggle transmissions
107	...Cam connections
108	...Flexible connections
109	..Rack and pinion
110	.Reciprocating to reciprocating
111	MECHANICAL MOVEMENTS (INTERMITTENT GRIP TYPE)
112	.Rotary to intermittent unidirectional motion
113	..Automatically controlled
114	...Speed
116	..Rotary crank or eccentric drive
117	...Adjustable
118	...Lever transmitter
119	....Adjustable leverage
120	...Rack and pinion transmitter
121	....Adjustable throw
122	...Rotary cam drive
123	....Adjustable throw
124	.....Radial cam
125	....Radial cam
125.5	..Intermittenly engaged clutch
126	.Oscillation or reciprocation to intermittent unidirectional motion
127	..Screw and nut devices
128	..Slide actuator
129	...Multiple acting
130	..Rack actuator
131	...Multiple acting
132	....Inwardly facing racks
133	...Oscillating
134	....Multiple acting
135	.....Inwardly facing racks
	..Strap actuator
136	...Multiple acting
137	....Spring or weight return
138	...Single acting
139	....Engine starter type
140	.....Spring or weight return
141	....Spring or weight return
141.5	..Lever actuator
142	...Rotary driven element
143	....Multiple acting
144	.Grip units and features
145	..Compound movement handle
146	...Reversible
147	...Transverse pivots
148	..Gripper releasing devices
149	...Power pawl lifter
150	....Automatic
151	.....Idle stroke
152	......Cooperating holding pawl
153	.....Power stroke
154	....Cooperating holding pawl
155	...Holding pawl lifter
156	..Gripper mountings, lever
157	...Reversible
158	...Multiple acting

159	....Single ratchet or clutch
160	..Gripper mountings, slide
161	...Multiple acting
162	..Grip features
163	...Driving band
164	....Clamping
165	...Driven band and gripper
166	....Positive grip
167	...Driving ratchet-bar or rack
168	....Multiple acting
169	...Driven ratchet-bar and power dog
625	ALTERNATE MANUAL OR POWER OPERATORS
640	GEARING
650	.Non-planetary gearing differential type (e.g., gearless differentials)
655	.Single gearing unit includes fluid drive
661	.Plural prime movers selectively coupled to common output
664	.Plural power paths from prime mover
665 R	.Plural power paths to and/or from gearing
665 A	...Single driven plural drives
665 B	....Parallel
665 C	....Non-parallel
665 D	....Aligned
665 E	....Parallel and aligned
665 F	...Single drive plural driven
665 G	....Parallel
665 GA	.....Spur
665 GB	.....Bevel
665 GC	.....Spur and bevel
665 GD	.....Helical
665 GE	.....Belt or chain
665 H	....Non-parallel
665 S	....Aligned
665 T	.....Vehicle
665 K	....Concentric
665 L	...Plural drivers plural driven
665 M	....Bevel
665 N	....Spur
665 Q	...Altenate drivers and driven
665 P	...Miscellaneous (plural power paths)
670	..Alternate input connections single hand crank
718	..Fluid drive divides or combines alternate paths
720	..One path includes fluid drive
721	..Friction type gearing
724	..Worm type gearing
730.1	.With fluid drive
731.1	..Condition responsive control
732.1	..With one or more controllers for gearing, fluid drive or clutch
733.1	...With interrelated controls
745	.In series plural interchangeably looked nonplanetary units
810.1	.Reversal of direction of power flow changes power transmission to alternate path
810.2	..Input and output exchange functions
	.Frictional
190	..Variable speed ratios
190.5	...Automatic
191	...Cone
192	....Interposed band
193	....Interposed roll
194	...Disk and wheel
196	....Pressure balancing and distributing
197	....Complete traverse
198	...Spherical
199	...Disks
200	....Interposed idler
201	....Interposed idler and shaft
202	..Single forward or reverse ratios
203	...Gears and belt
204	...Concentric gears
205	...Gears and direct clutch

	GEARING
	.Frictional
206	..Single speed ratio
	..Frictional adjustment
207	...Shiftable motor and gear
208	...Automatic
209	....Spring or weight
210	...Magnetic
211	...Eccentric
212	...Screw
213	...Lever
214	..Frictional working surfaces
215	...Coverings
216	...Form
216.3	.Toothed gear and recirculated unconnected elements
318	.Alternating rotary or continuous
319	.Alternating rotary
320	..Progressive
321	..Shiftable and/or slidable gears
322	..Clutchable gears
323	...On single driven member
324	...On single driving member
325	.Interchangeably locked
329	..Disconnectable counter shaft
330	..Multiple concentric clutch shafts
331	..Plurality of counter shafts
332	..Internal-external gears
333	..Combined gear and clutch
334	...Preselector
335	..Control mechanism
	...Automatic
336 R	....Speed responsive
336 B	......With belt gearing
336.5	......Governor
337	....Torque responsive
337.5	...Cam operated
339	..Meshing assisters
340	...Double clutch and interposed transmission
	..Longitudinally slidable
	...Multiple spur gears
341	....With tumbler gear
342	....Selective
343	.....Direct clutch and drive
344	....Progressive
345	.....Direct clutch and drive
346	....Fluid operated
347	...Multiple bevel gears
	...Single spur gear
348	....Tumbler and cone
349	.....Multiple cone
350	...Single bevel gear
351	...Pin or crown gears
352	..Laterally slidable gears
353	...Rotary carriage
354	...Swinging carriage
355	...Single forward and reverse speeds
	..Slidable keys or clutches
356	...Alternative clutch shaft
	...Multiple clutch shafts
357	....Progressive
358	.....Keys simultaneously slidable
359	....Selective
360	....Multiple forward and reverse
361	....Single forward and reverse
	...Single clutch shaft
	....Progressive
362	.....Multiple key
363	.......Spur
364	........Fluid operated
365	........Electrically operated
366	......Single key
368	.......Clutch and ratchet
369	.......Spur gears
370	........Intermediate clutch
371	........Sliding clutch carrier
372	........Sliding clutch operator
373	....Selective
374	.....Multiple key
375	......Spur gears
376	....Single speed forward and reverse
377	.....Spur gears
378	.....Bevel gears
379	.....Bevel and idler gears
380	.Pivotally supported
381	..Windmill turntable
383	..Screw
384	..Spur
385	..Bevel
386	...Wheel type
387	...Wringer type
388 R	.Follow-up mechanism
388 PS	...Power steering
390	.Eccentric driving shaft and axle
391	.Central driving shaft in axle
392	.Parallel shafts, adjustable gear mesh
393	.Varying speed ratio
395	.Adjustable
396	..Relative movable axes
397	...Parallel shafts
398	...Automatic control
399	....Parallel shafts
400	..Fixed axes
401	...Parallel shafts
402	...Automatic control
403	....Parallel shafts
404	.Reversing means
404.5	..Governor control
405	.Disconnecting means
406	.Displaceable elements
409	.Backlash take-up
410	.Pressure distributing
411	.Yieldability in gear trains
411.5	.With brake means for gearing
412 R	.Directly cooperating gears
412 TA	...Torque actuated safety devices
413	..Parallel axes or shafts
414	...External type
415	....Pin teeth
416	..Intersecting axes
417	...Bevel gear type
422	..Rack and pinion
420	..Spur and bevel
421 R	..Spur
421 A	....Motor and gearing
423	..Bevel
424	...Motor vehicle drive
424.5	..Spiral
424.6	...Driven rack or shaft
424.7	...Screw
424.8 R	...Screw and nut
424.8 A	.....Split nut
424.8 B	.....Differential nut
424.8 C	.....Planetary
424.8 VA	.....Valve actuators
424.8 VZ	.....Variable impedance
424.8 NA	.....Non-recirculating balls
425	...Worm
425.5	....Variable speed
426	....Intermittent motion
427	....Distribution of pressure
431	.Gear and rotary bodies
432	..Laterally spaced wheels
433	..Radially spaced wheels
434	.Rotary bodies
435	..Mutilated
436	..Geneva
437	..Irregular teeth and bodies
438	..External and internal teeth
439	..Sectional
440	...Backlash take-up
441	....Screw and nut
443	...Sound deadening
444	...Differential disks
445	...Multiple disks

	GEARING
	.Rotary bodies
	..Sectional
446	...Separate rim
447	....Detachable
448	...Segmental rim
449	...Sheet metal
450	...Diametrically split
451	...Shaft-admitting insert
457	.Teeth
458	..Worm and helical
459	...Nuts
459.5	..Bevel
460	..Spur
461	...Yieldable
462	...Form
464	....Antifriction
465	.....Roller
466	....Twisted
467	.Lubrication
468	..Teeth
469	CONTROL LEVER AND LINKAGE SYSTEMS
470	.Resilient connections
471 R	.Multiple controlled elements
471 XY	...Control moves in two planes
473 R	..Transmission control
473 P	....Pivot mounting
473 SW	....Near steering wheel
474	...Foot operated
475	...With detent mechanism
476	...With reverse lockout
477	...With interlocked elements
478	..Foot operated
478.5	...Offset extension
479	.Multiple controlling elements
480 R	..Interconnected
480 B	....Marine
481	...Hand and foot
482	....Accelerator
483 R	..Interlocked
483 PB	....Push button
483 K	....Rod blocks actuation of rotary member
484 R	..Steering and controls assemblies
484 H	....With horn control
485	...Rotary control shaft
486	...Reciprocating control elements
487	....Flexible
488	....Handle bar type
489	.....Flexible control element
490	..Antirattling elements
491	.Hand operated
492	..Steering posts
493	...Adjustable
494	...Auxiliary operators
495	...Position controllers
496	...Motion translating mechanism
497	....Cam type
498	....Gear type
499	.....Screw and nut
500	.....Worm
500.5	..Flexible transmitter (e.g., Bowden cable)
501.5 R	...Constant tension sustaining
501.5 H	.....Hydraulic control
501.6	...And hand operator
502	....Slidable
502.1	....For moving a mirror
502.2	....Single rotatable lever (e.g., for bicycle brake or derailleur)
502.3	...Including rolling antifriction elements
502.4	...And sheath support, connector or anchor
502.5	...Specific cable or sheath structure
502.6	...Specific cable connector or guide
503	..Sliding rod
504	..Rotatable rod, shaft or post
505	...Gear, drum and cable
506	...Drum and cable
507	...Gear
508	....Variable ratio
509	....Screw and nut
510	...Adjustable
511 R	...Mountings
511 A	.....Antenna
512	.Foot operated
513	..Accelerator
514	..Signal
515 R	.Knee operated
515 E	...Elbow
516	.Variable output force
517	..Flexible
518	..Variable input leverage
	.Elements
519	..Levers
520	...Toggle
521	....Lazy tongs
522	...Adjustable
522.5	...Swing posts
523	...Hand
524	....Jointed
525	....Adjustable
526	...Stops
527	..Detents
528	...Hand crank
529	...Interrelated lever release
530	...Gear
531	...Friction
532	...Lever engaging
533	...Lever engaging rack
534	....Pivoted
535	....Lever carried pawl
536	....Handle release
537	....Finger lever release
538	.....Slidable
539	....Pedal controlled
540	...Lever carried rack
541	....Pivoted
542	....Pedal controlled
543	..Handles
544	...Extension
545	...Hand crank
546	....Extensible
547	....Collapsible
548	...Shaft connections
550	....Engine starter type
551	.....Holders
551.1	...Handle bars
551.2	....Spring biased or supported
551.3	....Folding or adjustable
551.4	.....Sectional
551.5	......Simultaneously movable
551.6	.....Continuous
551.7	......With handle latch
551.8	....Attachments and accessories
551.9	....Handholds and grips
552	...Hand wheels
553	....Knob or dial
554	....Slidable
555	....Pivoted
556	.....Releasable
557	....Handles
558	....Rim grips and covers
558.5	...Caps and covers
559	..Rocker arms
560	..Pedals
561	...Treadles
562	...Extension
562.5	....Offset
563	...Pads and covers
564	..Foot rests
565	..Controller checks
566	..Slot closers and lever guards
	ELEMENTS
567	.Cams

	ELEMENTS
	.Cams
568 R	..Adjustable
568 FS	....Flexible strip
568 M	....Memory devices
568 T	....Timer devices
569	..Follower
570	.Eccentrics and straps
571 R	..Adjustable
571 L	....Radially adjusted
571 M	....Rotatably adjusted
572	.Flywheels and rotors
573 R	..With balancing means
573 F	....Fluid balancing means
574	..With vibration damping means+
575	.Pawls and ratchets
576	..Noiseless
577 R	..Pivoted pawls
577 S	....Single tooth
577 SF	....Flexible single tooth
577 M	....Multiple tooth
578	..Sliding pawls
579 R	.Pitmans and connecting rods
579 E	...Engine type
579 F	...Idler arm
580	..Radial
581	..Yieldable
582	...Longitudinal springs
583	...Fluid cushion
584	...Automatic release
585	....Toggle link type
586	..Longitudinally adjustable
587	..Hollow rod, lubricated
588	..Sheet metal type
589	..Counterbalanced
590	...Weight type
591	....Rotating
592	...Spring
593	..Section coupled
594	..Bearings, adjustable
594.1	.Cranks and pedals
594.2	..With attached gear
594.3	..Variable
594.4	..Pedals
594.5	...Counterbalanced
594.6	...With toe or shoe clips
594.7	...Adjustable or folding
595	.Cranks and wrist pins
596	..Multiple throw
597	...Sectional
598	..Sectional
599	..Yieldable
600	..Adjustable
601	...Automatically
602	..Variable
603	..Counterbalanced
604	...Vibration dampers
605	..Lubricated
606 R	.Gear casings
606 A	...Cooling
607	..Axle and torque tubes
608	.Guards
609	..For rotary member
612	.Guard mechanisms
613	..Automatic
614	...Oscillating member actuator
615	...Reciprocating member actuator
616	..Operator controlled
617	..Set screw
	******************************
	DIGESTS
	******************************
DIG 1	Hydraulic control systems automatic automotive controls
DIG 2	Miscellaneous control systems (e.g., ship propulsion, machine tools, etc.)
DIG 3	Movable van or blade torque converters
DIG 4	Magnetic gearing
DIG 5	Gas turbine with gearing
DIG 6	Transistor-electronic gearing controls
DIG 7	Indicators-sensors and meters
DIG 8	Marine control-ship transmission control means
DIG 9	Perpetual motion gimmicks
DIG 10	Polymer digest - plastic gears
DIG 11	Creeper speed
DIG 12	Novikov gears

Note:

In this schedule, many subclasses are based on the groupings of elements in the periodic chart. Below are listed elements in the group as used in the schedule.

Alkali metal : Lithium(Li), Sodium(Na), Potassium(K), Rubidium(Rb), Cesium(Cs), and Francium(Fr)

Alkaline earth metal : Calcium(Ca), Strontium(Sr), Barium(Ba), and Radium(Ra)

Halogen : Fluorine(F), Chlorine(Cl), Bromine(Br) Iodine(I), and Astatine(At)

Iron Group : Iron(Fe), Cobalt(Co), and Nickel(Ni)

Lanthanide : Lanthanum(La), Cerium(Ce), Praseodymium(Pr), Neodymium(Nd), Promethium(Pm), Samarium(Sm), Europium(Eu), Gadolinium(Gd), Terbium(Tb), Dysprosium(Dy), Holmium(Ho), Erbium(Er), Thulium(Th), Ytterbium(Yb), and Lutetium(Lu)

Noble gas : Helium(He), Neon(Ne), Argon(Ar), Krypton(Kr), Xenon(Xe), and Radon(Rn)

Noble metal : Silver(Ag), Gold(Au), Osmium(Os), Iridium(Ir), Platinum(Pt), Ruthenium(Ru), Rhodium(Rh), and Palladium(Pd)

Radioactive : Technetium(Tc), Promethium(Pm) Polonium(Po), Astatine(At), Radon(Rn), Francium(Fr), Radium(Ra), Actinium(Ac), Thorium(Th), Protactinium(Pa), Uranium(U), Neptunium(Np), Plutonium(Pu), Americium(Am), Curium(Cm), Berkelium(Bk), Californium(Cf), Einsteinium(Es), Fermium(Fm), Mendelevium(Md), Nobelium(No), Lawrencium(Lr), Unnilquadium(Unq), Unnilpentium(Unp), and Unnilhexium(Unh)

Rare earth metal : Scandium(Sc), Yttrium(Y), and Lanthanide group

Refractory metal : Titanium(Ti), Zirconium(Zr), Hafnium(Hf), Vanadium(V), Niobium(Nb) or Columbium(Cb), Tantalum(Ta), Chromium(Cr), Molybdenum(Mo), and Tungsten(W)

Transition metal : Scandium(Sc), Titanium(Ti), Vanadium(V), Chromium(Cr), Manganese(Mn), Iron(Fe), Cobalt(Co), Nickel(Ni), Copper(Cu), Zinc(Zn), Yttrium(Y), Zirconium(Zr), Niobium(Nb) or Columbium(Cb), Molybdenum(Mo), Technetium(Tc), Ruthenium(Ru), Rhodium(Rh), Palladium(Pd), Silver(Ag), Cadmium(Cd), Lanthanum(La), Cerium(Ce), Praseodymium(Pr), Neodymium(Nd), Promethium(Pm), Samarium(Sm), Europium(Eu), Gadolinium(Gd), Terbium(Tb), Dysprosium(Dy), Holmium(Ho), Erbium(Er), Thulium(Tm), Ytterbium(Yb), Lutetium(Lu), Hafnium(Hf), Tantalum(Ta), Tungsten(W), Rhenium(Re), Osmium(Os), Iridium(Ir), Platnium(Pt), Gold(Au), Mercury(Hg), Actinium(Ac), Thorium(Th), Protactinium(Pa), Uranium(U), Neptunium(Np), Plutonium(Pu), Americium(Am), Curium(Cm), Berkelium(Bk), Californium(Cf), Einsteinium(Es), Fermium(Fm), Mendelevium(Md), Nobelium(No), Lawrencium(Lr), Unnilquadium(Unq), Unnilpentium(Unp), and Unnilhexium(Unh)

300 COMPOSITIONS
301 .Reactive furnace lining
302 .Welding rod or electrode defined by composition
303 .Solid treating composition for liquid metal (e.g., flux, slagging agent, casting agent, etc.) or charge
304 ..In wire, container, or article with surface feature
305 ..For casting or teeming operation
306 ..For electrothermic operation (e.g., electroslag remelting, etc.)
307 ..Containing Boron(B) compound
308 ..Containing halide
309 ...Containing Fluoride
310 ....And consolidated
311 ...And consolidated
312 ..Containing carbide
313 ..Composition for or from consolidating by agglomerating, calcinating, compacting, indurating, roasting, sintering, or solidifying from molten mass
314 ...Containing free metal
315 ....Aluminum(Al) or Magnesium(Mg) as free metal
316 ....Iron(Fe), Iron scrap, or Iron alloy as free metal
317 .....And coal, coke, pitch, asphalt, or tar
318 .....And clay (e.g., bentonite, montmorillonite, etc.), cement, or Alkali metal silicate
319 ...Containing Iron(Fe) compound
320 ....And coal, coke, pitch, asphalt, or tar
321 ....And synthetic polymer, natural polymer, or carbohydrate
322 ....And clay (e.g., bentonite, montmorillonite, etc.), cement, or Alkali metal silicate
323 ....And Alkaline earth metal compound or Aluminum(Al) compound
324 ...Containing Zinc(Zn) compound
325 ...Containing coal, coke, pitch, asphalt, or tar
326 ...Containing clay (e.g., bentonite, montmorillonite, etc.), cement, or Alkali metal silicate
327 ...Containing Alkaline earth metal compound or Aluminum(Al) compound
328 ..Containing free metal
329 ..Containing Alkaline earth metal compound or Aluminum(Al) compound
228 .Consolidated metal powder compositions
229 ..Flake or fibrous constituent or fibrous grain structure
230 ..With nonmetal constituent - Silicon(Si) considered a metal (e.g., cermet, etc.)
231 ...Molybdenum sulfide or functional constituent, (e.g., lubricant, abrasive, etc.)
232 ...Oxide containing
233 ....With another nonmetal
234 ....Oxygen(O) associated with more than one metal
235 ....Oxide of Aluminum(Al), Beryllium(Be), Magnesium(Mg), Alkaline earth metal, Scandium(Sc), Yttrium(Y), Lanthanide metal, Actinide metal, Titanium (Ti), Zirconium(Zr), or Hafnium(Hf)
236 ...Carbide containing
237 ....With another nonmetal
238 .....Nonmetal is Boron(B) or Nitrogen(N)
239 ....Carbide only of Vanadium(V), Niobium(Nb) or Columbium(Cb), or Tantalum(Ta)
240 ....Carbide only of Chromium(Cr), Molybdenum(Mo), or Tungsten(W)
241 ....Carbon(C) associated with more than one metal
242 .....Free metal is Iron(Fe), Cobalt(Co), or Nickel(Ni) only
243 ...Nonmetal is elemental Carbon(C) only
244 ...Containing Boron(B) or Nitrogen(N)
245 ..Base metal one or more Transition metal
246 ...Base metal one or more of Iron group, Copper(Cu), or Noble metal
247 ....Base metal one or more of Copper(Cu) or Noble metal
248 ...Base metal confined to Tungsten(W)
249 ..Base metal one or more of Beryllium(Be), Magnesium(Mg), or Aluminum(Al)
250 ...Base metal is Beryllium(Be) only
255 .Loose particulate mixture (i.e., composition) containing metal particles
252 ..Mixture contains particles of nonmetal
253 ...Halogen containing particles
254 ...Boron(B) containing particles
330 PROCESSES
331 .Producing solid particulate free metal directly from liquid metal (e.g., liquid comminuting, etc.)
332 ..With subsequent coating of the particles
333 ..Utilizing centrifugal force or rotating forming zone to comminute liquid metal
334 ...Including directing liquid metal onto rotating disc
335 ..By vibrating or agitating
336 ..Utilizing electrothermic energy to comminute
337 ..By impinging plural liquid streams
338 ..By impinging or atomizing with gaseous jet or blast
339 ...Gas used is air
340 ..By extrusion spraying or gravity fall through orifice
341 ...Into moving fluid
342 .Spheroidizing or rounding of existing solid metal particles
343 .Producing or purifying free metal powder or producing or purifying alloys in powder form (i.e., named or of size up to 1,000 microns in its largest dimension)
344 ..Radioactive
345 ..Utilizing, electrothermic, magnetic, or wave energy
346 ...Utilizing plasma
347 ...Utilizing magnetism
348 ..Producing or purifying named magnetic material
349 ...Using Phosphorus(P), Boron(B), or Silicon(Si) or compound thereof
350 ...Using Alkaline earth metal or compound thereof
351 ..Producing alloy
352 ...Including comminution
353 ..Utilizing scrap material
354 ..Including comminution
355 ...Directly from liquid mass (e.g., by atomizing, etc.)
356 ...And shaping or sintering prior to comminution

PROCESSES
.Producing or purifying free metal powder or producing or purifying alloys in powder form (i.e., named or of size up to 1,000 microns in its largest dimension)
..Including comminution
357 ...With step at 300 degrees C or greater
358 ....Use of salt bath
359 ....Reduction
360 ....Use of gas
361 ...Using nonmetallic material which is liquid under standard conditions
362 ..Decomposition of organo-compound containing metal or metal carbonyl
363 ..At 300 degrees C or greater
364 ...Combined with step at less than 300 degrees C using nonmetallic material which is liquid under standard conditions
365 ....Step at 300 degrees C or greater after step at less than 300 degrees C using nonmetallic material which is liquid under standard conditions
366 ...Utilizing a fluidized bed
367 ...Vaporizing or condensing free metal
368 ...Settling of powder in molten metal or salt bath
369 ...Purifying powdered metal or reducing powdered metal compound to free metal
370 ..Using nonmetallic material which is liquid under standard conditions
371 ...And settling of free metal from solution
372 ....Displacing by another metal (i.e., electromotive series)
373 ....Copper(Cu) recovered
374 ....Nickel(Ni) or Cobalt(Co) recovered
10.1 .Electrothermic processes (e.g., microwave, induction, resistance, electric arc, plasma, etc.)
10.11 ..With zone melting or fractional crystallization
10.12 ..Controlling process through sensed condition
10.13 ..Electromagnetic wave energy (e.g., microwave, laser, etc.)
10.14 ..Electrical induction
10.15 ...Producing or treating Iron(Fe) or Iron alloy
10.16 ....With induced magnetic stirring
10.17 ....With gaseous treating agent
10.18 ...Producing or treating Aluminum(Al), Beryllium(Be), Cobalt(Co), Chromium(Cr), Magnesium(Mg), Nickel(Ni), Titanium(Ti), or alloy thereof
10.19 ..Plasma
10.2 ...Influenced by magnetic field
10.21 ...Producing or treating Aluminum(Al) or Aluminum alloy
10.22 ...Producing or treating Iron(Fe) or Iron alloy
10.23 ..Consumable metal-containing electrode
10.24 ...Electro-slag remelting
10.25 ....Producing or treating Chromium(Cr), Cobalt(Co), Copper(Cu), Iron(Fe), Manganese(Mn), Nickel(Ni), Titanium(Ti), or alloy thereof
10.26 ...Producing or treating Titanium(Ti) or Zirconium(Zr) or alloy thereof
10.27 ..Carbothermic reduction of Aluminum(Al) compound
10.28 ..With volatilization of metal halide
10.29 ..Distillation or volatilization of refined metal or compound thereof
10.3 ...Producing Zinc(Zn)
10.31 ....From consolidated material (e.g., briquette, pellet, etc.)
10.32 ....With electric arc
10.33 ...Producing magnesium(Mg)
10.34 ..Rotating chamber
10.35 ..Reducing or smelting slag or dross as starting material
10.36 ..Exhaust or top gas reused or treated
10.37 ...With production of electrical energy
10.38 ...Producing or treating Iron(Fe) or Iron alloy
10.39 ..Adding gaseous treating agent
10.4 ...Gas contains gaseous Oxygen
10.41 ....Producing or treating Iron(Fe) or Iron alloy
10.42 .....With charge melting by electrothermal energy
10.43 ...Hydrogen or water vapor
10.44 ...Carbon monoxide or Carbon dioxide
10.45 ...Noble gas, Nitrogen, or inert gas not otherwise identified
10.46 ..Adding solid treating agent, slag,or flux
10.47 ...Magnesium(Mg) or compound thereof
10.48 ...Aluminum(Al) or compound thereof
10.49 ...Boron(B) or compound thereof
10.5 ...Silicon(Si) or compound thereof
10.51 ....Ferrosilicon alloy
10.52 ....Silicon carbide
10.53 ....With lime present
10.54 ...Alkali metal, Alkaline earth metal or compound thereof
10.55 ....Calcium fluoride (e.g., Fluorspar, Fluorite, etc.)
10.56 ....Calcium carbide
10.57 ....Calcium carbonate (e.g., limestone, etc.)
10.58 ....Calcium oxide (e.g., lime, calx, etc.)
10.59 ...Carbon(C) containing material (e.g., Carbon, carbonaceous material, Carbide, etc.)
10.6 ....Producing or treating Iron(Fe) or Iron alloy
10.61 .....With electric arc
10.62 ..Reducing or smelting
10.63 ...Producing or treating Iron(Fe) or Iron alloy
10.64 ..Vacuum purifying or degassing
10.65 ..Melting or holding melt
10.66 ...Producing or treating Iron(Fe) or Iron alloy
10.67 .Magnetic (e.g., electromagnetic, etc.) or electrostatic processes
375 .Process control responsive to sensed condition
376 ..Removing material from process to sense condition
377 ...Material removed is molten metal
378 ..Pressure sensed
379 ...Of feed gas
380 ..Temperature sensed
381 ...Of waste gas
382 ...Of molten metal
383 ...Of sintered material
384 ..Composition sensed
385 ...Of waste gas
386 ..Characteristic of treated material sensed (e.g., density, etc.)
387 ..Flow rate sensed
388 .Preparing for amalgamation, preparing and amalgamating, or breaking amalgam to produce free metal

PROCESSES
.Preparing for amalgamation, preparing and amalgamating, or breaking amalgam to produce free metal
389 ..And displacing with a metal other than Mercury(Hg)
390 ..Utilizing a Halogen containing agent
391 ..Utilizing a Nitrogen(N) containing agent
392 .Producing or treating free metal
393 ..Utilizing Radioactive material, producing or treating Radioactive metal
394 ...Thorium(Th)
395 ....Reduction
396 ...Plutonium(Pu)
397 ....Reduction
398 ...Uranium(U)
399 ....Reduction
400 ..Free metal production from sea nodules
401 ..Treating multi-component metal-containing scrap having an integral substrate to separate metal therefrom by temperature modification or chemical process at 300 degrees C or greater wherein at least one metal remains solid during separation
402 ...Utilizing molten salt bath
403 ...Removing nonmetal from metal
404 ..Separating liquid metal by centrifuging
405 ..Removing gas from liquid metal by use of gas permeable membrane
406 ..Adsorbing impurity from liquid metal
407 ..Filtering vaporous or liquid metal
408 ...Alkali metal, singly or in combination
409 ...Magnesium(Mg)
410 ...Noble metal, singly or in combination
411 ...Copper(Cu)
412 ...Aluminum(Al)
413 ..From metal carbonyl or carbon monoxide complex
414 ..At 300 degrees C or greater (e.g., pyrometallurgy, etc.)
415 ...Foam
416 ...Combined with step at less than 300 degrees C using nonmetallic material which is liquid under standard conditions (e.g., hydrometallurgy, etc.)
417 ....Obtaining metal from photographic waste
418 ....Obtaining metal from electrolytic slime
419 ....Step at less than 300 degrees C using nonmetallic material which is liquid under standard conditions after a step at 300 degrees C or greater
420 .....Step at less than 300 degrees C using nonmetallic material which is liquid under standard conditions is reduction to free metal
421 ......Noble metal
422 ....Silver(Ag)
423 ....Gold(Au)
424 ......Copper(Cu)
425 ......Iron(Fe), Cobalt(Co), or Nickel(Ni)
426 ....Noble metal obtained
427 .....Silver(Ag)
428 .....Gold(Au)
429 ....Copper(Cu) obtained
430 ....Iron(Fe), Cobalt(Co), or Nickel(Ni) obtained
431 ....Zinc(Zn), Cadmium(Cd), or Mercury(Hg) obtained
432 ....Tin(Sn) or Lead(Pb) obtained
433 ...Iron(Fe)
434 ....With concurrent production of hydraulic cement
435 ....With concurrent production of Titanium dioxide
436 ....With consolidation (e.g., pelletizing, etc.) of solid metallic Iron(Fe) product after reduction
437 ....Reducing Iron(Fe) halide
438 ....Making wrought Iron(Fe)
439 .....Pouring molten Iron(Fe) into molten slag (i.e., Aston process)
440 .....Utilizing moving hearth
441 .....Directly from Iron(Fe) compound only (no metallic Iron)
442 ......In moving furnace
443 ....Reducing in gaseous suspension
444 .....Fluidized bed
445 ......With melting of Iron(Fe)
446 ....Outside the fluidized bed
447 ......With solid in fluidized bed in addition to reducible Iron(Fe) compound
448 ....Carbon(C)
449 ....Generated in situ
450 ......Using plural fluidized bed furnaces
451 ......Using plural fluidized bed zones within a furnace
452 .....Solid product produced (without melting)
453 .....Cyclone apparatus used
454 .....Using same inlet to feed solid and gas
455 ......Inlet is a burner
456 ......Burner is horizontal
457 ......Inlet feeds upwardly
458 ....Blast furnace reduction to produce molten Iron(Fe)
459 .....Using additive to the blast
460 ......Carbonaceous
461 ....Slurry of solid in liquid
462 ....Liquid
463 ....Gaseous
464 ....Recycled off gas
465 ......Water
466 ......Oxygen enrichment
467 .....Tapping molten product
468 .....Top gas recovery
469 .....Specified method of charging burden
470 .....Defined composition of slag
471 .....Defined composition of reductant
472 .....Defined composition of Iron(Fe) source
473 ....Reduction in closed retort (e.g., Hoganas process, etc.)
474 ....Reduction in rotary kiln
475 .....With melting of Iron(Fe) product
476 ......Iron(Fe) product melted within rotary kiln
477 .....Introducing solid reductant into rotary kiln
478 ......Solid reductant is recycled
479 ......Any part of the charge is consolidated by agglomerating, compacting, indurating, or sintering (e.g., pelletized ore, flux, or reductant, etc.)

PROCESSES
.Producing or treating free metal
..At 300 degrees C or greater (e.g., pyrometallurgy, etc.)
...Iron(Fe)
....Reduction in rotary kiln
.....Introducing solid reductant into rotary kiln
480 ......Reducible Iron(Fe) compound and solid reductant fed through same end of rotary kiln
481 ....Mixed prior to charging
482 .....With generation of gaseous reductant outside rotary kiln
483 ....Superposed multiple hearth reduction
484 ....Moving furnace or hearth (e.g., moving belt, etc.)
485 .....Reduction in molten state
486 ....Heating reduction zone by heat conducted through walls of zone
487 .....Shaft furnace
488 ....Reduction to metallic Iron(Fe) within shaft furnace
489 .....Externally supplied gas reductant
490 ......Solid Iron(Fe) produced within shaft furnace
491 ....With melting Iron(Fe) product outside shaft furnace
492 ....With gasification of solid carbonaceous material in melt (e.g., coal, etc.)
493 ....Using solid Carbon(C) to generate gas in separate furnace (e.g., Wiberg Process, etc.)
494 ....Solid Carbon(C) is coal
495 ....Direct addition of gas containing gaseous Oxygen or water to shaft furnace (e.g., continuous Hyl process, etc.)
496 ....With reformation of reducing gas in separate furnace (e.g., Midrex process, etc.)
497 ....With plural reformers (e.g., Purofer process, etc.)
498 ....With addition of steam to reformer (e.g., Armco process, etc.)
499 .....Molten Iron(Fe) produced in shaft furnace
500 ....Reduction in molten state
501 .....Gas injection below surface of melt
502 .....Gas injection over surface of melt (e.g., as in reverberatory furnace, etc.)
503 ....Reduction in presence of solid Carbon(C) containing material (e.g., coke, coal, carbides, etc.)
504 .....Including consolidation of solid Carbon(C) containing material with reducible Iron(Fe) compound
505 ....Reduction with externally applied gas (e.g., batch HyL process, etc.)
506 ....Reduction in the presence of liquid carbonaceous reductant (e.g., petroleum, pitch, etc.)
507 ....Melting Iron(Fe) or treating molten Iron
508 .....Vacuum treatment of molten Iron(Fe)
509 ......Free falling stream or spray of molten Iron(Fe)
510 ......Vacuum lift
511 ....With addition of gas
512 ......With addition of gas
513 .....In reverberatory furnace (e.g., open-hearth, Siemens-Martin, puddling, etc.)
514 ......With treating of molten Iron(Fe) with gas outside reverberatory furnace (e.g., in Bessemer converter, etc.)
515 ......With melting Iron(Fe) in shaft furnace
516 ......Using gaseous Oxygen in a higher concentration than in ambient air
517 ......With addition of solid elemental Carbon(C) or employing elemental Carbon furnace lining
518 ......With compound containing Alkali metal and Oxygen (e.g., Sodium nitrate, Sodium carbonate, etc.)
519 ......With Halogen or Halogen containing compound (e.g., Sodium chloride, Fluorspar, etc.)
520 ......With Alkaline earth metal or Magnesium(Mg) containing compound
521 ......With Transition metal compound
522 ....Iron oxide
523 ......Melting solid Iron(Fe)
524 .....Sequential treatment of molten Iron(Fe) in plural apparatus with different linings (e.g., acid Bessemer followed by basic Bessemer, etc.)
525 .....Impinging free falling molten metal stream or spray with a gas or solid agent or spraying (e.g., atomizing, etc.) of molten metal
526 .....Adding solid treating agent in form of wire, rod, or article with surface feature or in container or by plunging means
527 .....In rotary kiln (e.g., Kaldo process, etc.)
528 .....Injecting gas or nonmetalliferous liquid which gasifies into, onto, or through premelted Iron(Fe) or slag layer thereon
529 ......With hydrocarbon liquid or gas present
530 ....And hydrocarbon in surrounding relationship to gaseous Oxygen (e.g., hydrocarbon in outer concentric tube, etc.)
531 ......And adding solid agent, slag, or flux to premelted Iron(Fe) or slag layer thereon
532 ....Loose elemental Carbon(C), coal, or coke (e.g., carburizing, etc.)
533 ....With solid entrained in gas or injected by gas pressure
534 ....Boron(B) or compound thereof used in process
535 ....Metal halide used in process
536 ....Carbide used in process
537 ....Elemental metal or elemental Silicon(Si) used in process
538 ....Iron(Fe) containing compound used in process
539 ....Alkali metal compound or Alkaline earth metal compound used in process
540 ....Gas contains gaseous Oxygen
541 ....Metal halide
542 ....Carbide
543 ....Elemental metal or elemental Silicon(Si)

PROCESSES
.Producing or treating free metal
..At 300 degrees C or greater (e.g., pyrometallurgy, etc.)
...Iron(Fe)
....Melting Iron(Fe) or treating molten Iron
.....Injecting gas or nonmetalliferous liquid which gasifies into, onto, or through premelted Iron(Fe) or slag layer thereon
......And adding solid agent, slag, or flux to premelted Iron(Fe) or slag layer thereon
.......Gas contains gaseous Oxygen
544 ....Iron(Fe) containing compound
545 ....Alkali metal compound or Alkaline earth metal compound
546 ....Noble gas or inert gas not otherwise identified
547 ....Gas compound containing Oxygen (e.g., Carbon monoxide, Carbon dioxide, Water, etc.)
548 ......Gas contains gaseous Oxygen
549 ....With treatment of exhaust gas
550 ....And adding gaseous Oxygen or inert gas to exhaust gas
551 ....Injecting from above and below melt surface
552 ....Including other gas from below
553 ....Injecting only from above melt surface
554 ....Including other gas from above
555 ....Including other gas from below
556 ....Injecting only from below mel surface
557 ....Including other gas from below
558 ......Noble gas or inert gas not otherwise identified
559 ......Gas compound containing Oxygen (e.g., Carbon monoxide, Carbon dioxide, Water, etc.)
560 .....Treating premelted Iron(Fe) or slag layer thereon by adding solid agent, slag, or flux
561 ......Loose elemental Carbon(C), coal, or coke (e.g., carburizing, etc.)
562 ......Sulfur(S) or compound thereof
563 ......Nitrate, Chlorate, Permanganate, or Peroxide
564 ......Boron(B) or compound thereof
565 ......Metal halide
566 ......Carbide
567 ......Elemental metal or elemental Silicon(Si)
568 ....Aluminum(Al) or Magnesium(Mg)
569 ......Iron(Fe) containing compound
570 ......Alkali metal compound or Alkaline earth metal compound
571 .....Melting solid Iron(Fe)
572 ......Melting packaged Iron(Fe) or Iron of specified structure to facilitate melting (e.g., shaped bale of scrap, etc.)
573 ......In shaft furnace (e.g., cupola, etc.)
574 ....Without the use of solid, carbonaceous material (e.g., without coke, etc.)
575 ....Using Oxygen in a higher concentration than ambient air
576 ....Using both a solid, carbonaceous fuel (e.g., coke, etc.) and a fluid fuel (e.g., natural gas, etc.)
577 ....Defined composition of solid fuel other than nominal "coke"
578 ....With Calcium carbide
579 ....With Alkali metal compound
580 ......In closed vessel with heat conducted through walls only (e.g., crucible melting, etc.)
581 ......Melting scrap
582 .....Separating slag from molten Iron(Fe)
583 .....Stirring or agitating molten Iron(Fe)
584 .....Pouring or tapping molten Iron(Fe)
585 ...Nonferrous
586 ....Concurrent production of Nonferrous metal and other desired nonmetallic product (e.g., cement, etc.)
587 ....Countercurrent liquid-liquid extraction of molten Nonferrous metal
588 ....Fractionation of molten Nonferrous metal (e.g., with reflux, etc.)
589 ....Alkali metal, singly or in combination
590 .....Vaporizing or condensing
591 ......Cesium(Cs)
592 .....Precipitation impurities from molten Alkali metal
593 ....Beryllium(Be)
594 ....Magnesium(Mg)
595 .....Vaporizing or condensing
596 ......Reduction
597 ....Using metal or metal compound reductant
598 ....And Carbon(C)
599 ....Using Carbon(C)
600 .....Treating molten Magnesium(Mg)
601 ......Precipitating impurities from molten Magnesium(Mg)
602 ......Adding gas
603 ....And solid
604 ......Adding solid
605 ....Alkaline earth metal, singly or in combination
606 .....Reducing halide
607 .....Vaporizing or condensing
608 ......Reduction
609 .....Treating molten Alkaline earth metal
610 ....Rare earth metal, singly or in combination
611 ....Refractory metal, singly or in combination
612 .....Titanium(Ti), Zirconium(Zr), or Hafnium(Hf), singly or in combination
613 ......Reduction
614 ....Using free metal or alloy reductant
615 ....Of Titanium(Ti), Zirconium(Zr), or Hafnium(Hf), compound containing Halogen
616 ....Of binary halide- MX(4)
617 ....Of chloride - MC1(4)
618 ....Free metal or alloy reductant contains Magnesium(Mg)
619 ....Metal produced is Titanium(Ti)
620 ....Of Titanium(Ti), Zirconium(Zr), or Hafnium(Hf) compound containing Halogen
621 ......Treating molten Titanium(Ti), Zirconium(Zr), or Hafnium(Hf)

PROCESSES
.Producing or treating free metal
..At 300 degrees C or greater (e.g., pyrometallurgy, etc.)
...Nonferrous
....Refractory metal, singly or in combination
622 .....Vanadium(V), Niobium(Nb) or Columbium(Cb), or Tantalum(Ta), singly or in combination
623 .....Chromium(Cr), Molybdenum(Mo), or Tungsten(W), singly or in combination
624 ....Manganese(Mn)
625 .....Reduction
626 ....Cobalt(Co)
627 .....Reduction
628 ....Nickel(Ni)
629 .....Reduction
630 ......Segregation process
631 ....Noble metal, singly or in combination
632 .....Palladium(Pd)
633 .....Platinum(Pt)
634 .....Silver(Ag)
635 ......Recovering Silver(Ag) from photographic material
636 ......Reduction
637 .....Gold(Au)
638 ....Copper(Cu)
639 .....Treating material in gaseous suspension
640 .....Treating slag or dross
641 .....Reduction
642 ......Segregation process
643 ......Treating matte or sulfide
644 ....Treating waste gas
645 ....With prior production of matte or sulfide
646 .....Treating molten Copper(Cu)
647 ......By vacuum
648 ......Adding gas
649 ....Containing gaseous Oxygen
650 ....And adding solid
651 ....And solid
652 ......Adding solid
653 .....Melting Copper(Cu) in shaft furnace
654 ....Zinc(Zn)
655 .....Treating slag or dross
656 .....Reduction
657 ......Using Halogen containing material
658 ......Vaporizing or condensing
659 ....Treating material in gaseous suspension
660 ....Treating material in blast furnace or cupola
661 ....Treating material in vertical retort
662 ....Treating material in rotary kiln
663 .....Treating molten or vaporous Zinc(Zn)
664 ......Using Halogen containing material
665 ......Vaporizing or condensing
666 ....Condensing with Lead(Pb) coolant
667 ....Condensing with use of molten metal slinger
668 ....Cadmium(Cd)
669 .....Vaporizing or condensing
670 ....Mercury(Hg)
671 ....Aluminum(Al)
672 .....Treating slag or dross
673 .....Reduction
674 ......Carbothermic
675 ......Decomposition of organo-compound containing Aluminum(Al)
676 ......Of Aluminum(Al) halide
677 ....Of subhalide
678 .....Treating molten Aluminum(Al)
679 ......Fractional crystallization
680 ......Adding gas
681 ....Containing Halogen atom
682 ....And adding solid
683 ....And solid
684 ......Adding solid
685 ....Containing Halogen
686 .....Melting Aluminum(Al)
687 ......Scrap
688 ....Gallium(Ga) or Indium(In)
689 ....Germanium(Ge)
690 ....Tin(Sn)
691 .....Reduction
692 ......Of Halogen containing material
693 ....Lead(Pb)
694 .....Treating material in gaseous suspension or gaseous state
695 .....Reduction
696 ......Of Lead-Sulfur compound
697 .....Treating molten Lead(Pb)
698 ......By vacuum
699 ......Adding gas
700 ....Containing Halogen atom
701 ......Adding solid
702 ....Containing free metal
703 ....Antimony(Sb)
704 .....Reduction
705 ....Bismuth(Bi)
706 ....Arsenic(As)
707 ...Reducing or smelting unnamed ore
708 ...Stirring or agitating of molten material
709 ...Covering the surface of molten metal
710 ..Below 300 degrees C
711 ...Using nonmetallic material which is liquid under standard conditions (e.g., hydrometallurgy, etc.)
712 ....Involving mining or in situ operation
713 ....From photography material
714 ....From electrolytic or cementation slime
715 ....Removing coating to recover free metal from substrate or coating
716 .....From Tin(Sn) scrap or Tin plate
717 ....Reducing to free metal with gas
718 .....Copper (Cu) recovered as free metal
719 ......Using Sulfur dioxide
720 .....Noble metal recovered as free metal
721 ....Utilizing organic reducing agent
722 ....Involving organic compound containing metal or organic agent for agglomerating metal
723 .....Natural or synthetic polymer
724 ....Displacing by another metal (i.e., electromotive series)
725 .....Lead(Pb) or Zinc(Zn) recovered as free metal
726 .....Copper(Cu) recovered as free metal
727 ......And flotation
728 ......And injecting or pressurizing with air or Oxygen
729 ......From Cyanide solution
730 ......With agitating or abrading
731 ......Utilizing leaching agent containing Sulfur(S)
732 .....Noble metal recovered as free metal
733 ......Silver(Ag) recovered as free metal
734 ....And injecting or pressurizing with air or Oxygen
735 ....From Cyanide solution
736 ......Gold(Au) recovered as free metal
737 ....From Cyanide solution

PROCESSES
.Producing or treating free metal
..Below 300 degrees C
...Using nonmetallic material which is liquid under standard conditions (e.g., hydrometallurgy, etc.)
....Displacing by another metal (i.e., electromotive series)
738 .....Nickel(Ni) or Cobalt(Co) recovered as free metal
739 ....Utilizing chemical agent to precipitate free metal
740 .....Copper(Cu) recovered as free metal
741 .....Noble metal recovered as free metal
742 ....Cleaning, leaching, or dissolving of Mercury(Hg)
743 ....With leaching or dissolving
744 .....Noble metal recovered as free metal
745 ...Alkali metal, singly or in combination
746 .Consolidating metalliferous material (e.g., ore, tailings, flue dust, fluxes, etc.) by agglomerating, compacting, or heat treating; preparatory process therefore; or treating consolidated material therefrom
747 ..Noble metal containing metalliferous material
748 ..With vaporization of impurity as metal halide
749 ..With physical separation or classification of solids
750 ...By sifting
751 ..With heat treatment (e.g., calcinating, fusing, indurating, roasting, sintering, vaporizing, etc.)
752 ...Vaporizing metalliferous impurity
753 ...With leaching, dissolving, or washing
754 ...By suspension (e.g., fluid bed, cyclone, etc.)
755 ...On moving grate, moving pallet, or endless belt
756 ....Using multi-layers
757 ....With gas recycling or reusing
758 ....Sintering
759 .....Of consolidated starting material
760 ...In shaft furnace or multi-hearth furnace
761 ....Sintering
762 ...In rotary kiln
763 ....Sintering
764 ...Coking of binder or additive
765 ...Sintering or with agglomerating or compacting
766 ....With coal, coke, pitch, asphalt, or tar
767 ....With synthetic polymer, natural polymer, or carbohydrate
768 ....With Alkaline earth metal compound, clay, or hydrosetting agent
769 ....Sintering
770 ..Agglomerating or compacting
771 ...With coal, coke, pitch, asphalt, or tar
772 ...With synthetic polymer, natural polymer, or carbohydrate
773 ...With Alkaline earth metal compound, clay, or hydrosetting agent

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CROSS-REFERENCE ART COLLECTIONS

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950 CONSOLIDATED METAL POWDER COMPOSITIONS OF >95% THEORETICAL DENSITY, (E.G., WROUGHT, ETC.)
951 .Oxide containing, (e.g., dispersion strengthened, etc.)
952 PRODUCING FIBERS, FILAMENTS OR WHISKERS
953 PRODUCING SPHERES
954 PRODUCING FLAKES OR CRYSTALS
955 PRODUCING DENTAL PRODUCT
956 PRODUCING PARTICLES CONTAINING A DISPERSED PHASE
957 CONTINUOUS REFINING OF MOLTEN IRON(Fe)
958 WITH CONCURRENT PRODUCTION OF IRON(Fe) AND OTHER DESIRED NONMETALLIC PRODUCT (E.G., ENERGY, FERTILIZER, ETC.)
959 THERMIT-TYPE REACTION OF SOLID MATERIALS ONLY TO YIELD MOLTEN METAL
960 IN ZERO GRAVITY ENVIRONMENT
961 TREATING FLUE DUST TO OBTAIN METAL (OTHER THAN BY CONSOLIDATION)
962 TREATING OR USING MILL SCALE

CLASS 76 METAL TOOLS AND IMPLEMENTS, MAKING

DECEMBER 1990

1	MISCELLANEOUS
12	FILE CUTTING
13	.Rasp-punching
14	.Swaging
15	.Trip-operated cutter
16	..Blow-controlled
17	.Idle cutter, hammer-operated
18	..Blow-controlled
19	.Pressers
20	.Beds and clamps
21	.Cutter heads
22	.Feeding
23	..Screw-operated
24.1	.Process
24.5	..Chemically sharpening
25.1	SAW-MAKING OR FURBISHING DEVICE OR MACHINE
	.Stretching
26	..Hammer
27	..Roller
	.Tooth
28	..Chisel-cutting
29	..Die-cutting
	.Sharpening and gumming
30	..Die cutting
31	..Reciprocating tool
32	...Gin saws
33	...Traveling tool carriage
34	...Clamp feed
35	...Tooth-engaging feed
36	...File holders and guides
37	..Rotating tool
38	...Spiral
39	...Switch-cam feed
40	...Pivoted gate
41	...Sliding gate
42	...Pivoted saw carriage
43	...Sliding saw carriage
44	...Milling
45	...Disks and cutters
46	.Dressing, jointing and gauging
47.1	.Dressing or jointing
48	..Circular saw
49	..Compressing
50	..Rotary tool
50.2	..Band saw dressing
50.4	..Jointing
51	.Swaging
	..Pivoted swage
52	...Lever-operated
	..Sliding swage
53	...Lever-operated
54	..Cam swage
55	..Idle swage
56	..Tools
57	..Anvils
58	.Setting
59	..Rotary set
60	..Screw-operated set
	..Pivoted set
61	...Multiple
62	...Trip
63	...Lever-operated
64	....Pliers
65	...Idle
	..Sliding set
66	...Multiple
67	...Trip
68	...Lever-operated
69	....Pliers
70	...Idle
71	..Spring set
72	..Swage set
73	..Anvil set
74	.Guides
75	.Feeding
76	..Clamp feed
77	..Tooth-engaging feed
78.1	.Clamp
79	..Center supports
79.5	..Vice
80	.Tooth-inserters
80.5	.Chain saw sharpener
	MACHINES
2	.Auger
3	..Clearing and lip-cutting
4	.Die-forming
5.1	.Drill-forming or sharpening
5.4	..Forging
5.6	..Punching
6	.Eye-headed tool
7	..Ax
8	...Adjustable header
9	.Socket, strap and tang tool
10	.Wrench
11	.Blank-splitting
	TOOL SHARPENERS
81	.Stropping devices
81.1	..Under tension
81.2	...By threaded means
81.3	..Including self-storage or kit
81.4	...Strop biased for retraction
81.5	..With end-attaching means
81.6	...Including swivel
81.7	..Rotary or oscillating
81.8	..Including nonplanar working surface
82	.Cutting
82.1	..Lawn mower
82.2	..Scissors
83	..Skate
84	..Butchers' steels
85	..Rotary
	..Multiple cutter
86	...Converging
87	....Disks
88	..Cutter and guide
89	...Disk
89.1	.Edge-serrating
89.2	.Swaging
101.1	BLANK OR PROCESS
102	.Augers
103	.Axes, hammers and hatchets
104.1	.Cutlery
105	..Forks and spoons
106	..Hollow handles
106.5	..Hand shears
107.1	.Die
107.4	..Drawing die
107.6	..Spinnerette
107.8	..Steel rule die
108.1	.Drill
108.2	..Rock drill
108.4	..Well drill
108.6	..Twist drill
109	.Hoes, mattocks and picks
110	.Keys
111	.Pitchforks and rakes
112	.Saws
113	.Shovels
114	.Wrenches
115	.Rotary cutter
116	.Cutter of sheet metal
117	.Involving use of tap or die
118	.Scythe
119	.Hand tool
	******************************
	DIGESTS
	******************************
DIG 1	Bowling pin
DIG 2	Case hardening
DIG 3	Casting
DIG 4	Chromium
DIG 5	Electric welding
DIG 6	Laminated
DIG 7	Plastics
DIG 8	Razor blade manufacturing

CLASS 79 BUTTON MAKING

1	MISCELLANEOUS
2	SHANK BUTTONS
3	METALLIC
4	.Covered
5	..Cloth
	PEARL AND COMPOSITION
6	.Surfacing and drilling
7	.Surfacing
8	..Tool-sharpening
9	..Multiple chuck
10	..Trimming
	.Drilling
	..Multiple spindle
11	...Axially opposite
	..Single spindle
14	...Single chuck
15	.Blank-sawing
16	..Tubular saw
18	WORK SUPPORTS

2	COMBINED WRENCHES AND PUMPS OR OILERS
3.05	SHELL, PROJECTILE, OR WAD EXTRACTORS
3.07	RECEPTACLE CLOSURE REMOVER
3.08	.Having discrete retainer or receptacle for removed closure
3.09	.Combined or plural
3.15	..Attached to receptacle or closure
3.2	.Power-, vacuum-, or fluid pressure-operated
3.25	.Wall or surface mounted or supported
3.31	..With receptacle supporting or grasping means
3.32	...With bottom support
3.33	..Rotary remover device, gear or lever actuated
3.27	..Lever or prying type
3.35	.Movable into or over handle
3.36	.With additional receptacle-engaging means
3.37	..Lever- or gear-translated closure remover
3.29	..For engaging receptacle about closure (e.g., socket type)
3.39	..Bottom support
3.4	.Gripping type
3.41	..Finger grapple type
3.42	..With reciprocating closure-engaging
3.43	..With deformable strip-tightening means
3.44	..With pivoted closure-engaging parts
3.45	.Screw type
3.55	.Levering or prying type
3.47	..With impaling or inserting remover
3.56	..Having discrete relatively movable portions
3.57	..Having handle, intermediate hook, and end fulcrum
3.48	.Impaling or inserting type
3.49	..With lateral projection or abutment
3.5	SPECTACLE
3.6	.Plier
3.7	LEAF-SPRING SPREADERS
3.8	FUSE PULLERS
4	ENGRAVERS' CLAMPS
6	WATCHMAKERS'
7	.Jewel setters'
7.5	.Mainspring winders
8	.Ruby pin setters
8.1	PACKING
9.2	STYLUS
9.21	STAMP SCARIFIER
9.22	PERFORATOR AND INKER
9.24	TAPPET ADJUSTER
9.26	PLOWSHARE HOLDER
9.3	HOSE-CLAMP APPLIERS
9.4	WIRE STRIPPER
9.51	.Bench tools
9.41	.Having relatively movable clamp and blade
9.42	..Clamp and blade move relative to supporting structure
9.43	..Blade moves relative to handle to remove insulation
9.44	.Pivoted blade
10	NUT LOCK
13	BOLT HOLDERS
15.2	REPAIR TOOLS FOR RESILIENT TIRES
15.3	.Holders for spread tire casings
15.4	.Deflating tools
15.5	.Combined cement injectors and plug or patch inserters
15.6	.Cement injectors
15.7	.Plug or patch inserters
15.8	SKID CHAIN APPLYING TOOLS
15.9	FOR LOCK OR LATCH
16	CHUCK KEY
44	HOLDER, PUSHER, OR SETTER FOR DRIVEN-TYPE FASTENERS
45	SHINGLE TOOL
46	WOODEN FLOORING TOOL
300	TOOL JAW(S) POSITIONED BY RELATIVELY MOVABLE PLURAL HANDLES (E.G., PLIERS)
301	.Including hydraulic features
302	.Antipodal jaw surfaces move apart as handles approach (e.g., outwardly expanding jaws)
303	.With three or more jaws
304	..With single pair of handles
305	...Double pair Janus-jawed
306	....With jaws fixed to handle(s)
307	...With intermediate jaw(s) in line with and between outer jaws
308	...With three jaws only
309	....Two pivoted jaws and one sliding jaw
310	....Three coacting pivoted jaws
311	...With separate jaw pairs
312	....Parallel jaws perpendicularly spaced
313	.With means requiring a completion of travel of jaw movement
314	.With means for step-by-step jaw movement
315	.With means to immobilize handles against relative angular movement and means to move jaw(s) thereafter
316	..With plural selective handle positions
317	..With means for relative longitudinal handle movement
318	.With means to immobilize jaws
319	..With lock-release means
320	..With lock-disabling means
321	..Including spring-urged handles or jaws
322	...And spring-urged latch
323	..Spring-urged latch element(s)
324	..Positive lock means
325	...With plural selective jaw positions
326	....Threaded lock means
327	.....With threaded jaw adjustment means
328	....Interdigitated lock means
329	.With means (nontoggle) to hold jaws against only retrograde movement
330	..With plural preselective jaw positions
331	..Manipulated lock member
332	...Pivoted bail
333	...Sliding yoke
334	...Threaded member
335	....Nut
336	...Pivoted rack
337	...Pivoted pawl
338	..Rack and pawl means
339	..Coacting friction means
340	...Serrated surfaces
341	.With means to vary range limit(s) of jaw movement
342	.Jaw-actuating means (handle-manipulation conversion)
343	..With means to choose one of a plurality of actuator leverages
344	...Predetermined and discrete member of leverage selections
345	..Axial motion of handle-attached actuators(s)
346	..Pivotal motion about axis of parallel actuator rod(s)
347	..With means to articulate and/or slide both jaws
348	...With means for arcuate motion of both jaws
349	....Cam actuator
350	....Dual pivoted actuator levers
351	.....With jaws pivoted together
352	...With means for parallel movement of work-engaging surfaces
353	....Longitudinal guide means
354	....Lateral guide means
355	..With means for sliding jaw actuation
356	...With adjustment means
357	....Pivoted pawl type

	TOOL JAW(S) POSITIONED BY RELATIVELY MOVABLE PLURAL HANDLES (E.G., PLIERS)
	.Jaw-actuating means (handle-manipulation conversion)
	..With means for sliding jaw actuation
358	...Pinion and rack
359	...Claw lever and rack or notch
360	....Plural teeth on claw
361	...Grip lever and cam
362	...Grip lever and link
363	....Toggle link
364	..Including claw lever and rack or notch means
365	...With adjustment means
366	...Plural teeth on claw
367	..Including toggle means
368	...With toggle release
369	....By means acting on intermediate pivot
370	.....Release means carried by grip lever
371	......Mounted on intermediate pivot
372	...With means to limit movement of intermediate pivot
373	...With means for relative parallel movement of jaws
374	...With pitman between grip lever and intermediate pivot
375	...With toggle linkage and actuated jaw mounted on carrier
376	...With connecting rod between grip lever and actuated jaw
377	...With connecting rod between grip lever and handle member
378	....With actuated jaw pivoted on handle member
379	.....With means for resiliently biasing jaw and/or toggle
380	......Extension coil spring between jaw and handle member
381	..Including grip lever actuator and pivoted jaw (e.g., tandem levers)
382	...With adjustment means
383	...With link connecting jaw and grip lever
383.5	..Including cam actuator and pivoted jaw
384	..With adjustment means
385	.Adjustable relationship between jaw(s) and/or handle(s)
386	..By relative positioning of jaw(s) only
387	...Both jaws adjustable
388	...By threaded elements
389	....Rotatable screw type
390	....Rotatable nut type
391	...Maintained by detent and rack
392	...Maintained by locked interdigitated members
393	..By angular orientation of one handle portion relative to other
394	..By selection of pivot hole(s) in each handle
395	..By threaded adjustment means
396	...Worm and rack type
397	...Peripherally threaded handle manipulated for travel relative to other handle
398	...Threaded element travels relative to both handles
399	...Rotatable screw in nut
400	....Screw attached to joint
401	....Nut attached to joint
402	...Rotatable nut on screw
403	....Screw attached to joint
404	....Nut attached to joint
405	..By manipulation of pivot-carrying member
406	...With angular orientation of eccentric pivots joining handles
407	..By relative sliding or slipping of handles
408	...With fulcrum-carrying member
409	....With positive lock for member
409.5	....With spring urged lock for member
411	...With pivot pin fulcrum in notched slot
412	....With flattened cross section pin
413	...With toothed-member fulcrum on notched handle
414	...With opposed interdigitated concentric segmental annular portions
415	.Crossed handles
416	..Joint detail
417	..Resiliently urged
418	.Jaw features
419	..Tined or digitated jaws
420	..Jaws extend laterally beyond side edge plane of handle(s)
421	..Jaw attachment and/or inserts
422	...Selective
423	....By detachment
424	...Articulated
424.5	..Nonplanar jaw face
426	...And diversely shaped face
426.5	...Work conforming face
427	.Resiliently urged
427.5	.Handle
463	INCLUDING TOOL DRIVING BY IMPACT DELIVERING COMPONENT OR COOPERATING ANVIL
464	.Motor or gear driven
465	.Structurally constrained to arcuate movement
466	..About turning axis of work engaging portion
52	WRENCH, SCREWDRIVER, OR DRIVER THEREFOR
53.1	.With elongated hot line stick
53.11	..Globe manipulator
53.12	...Rotatable grasper
53.2	.Stud-removal and implacement
429	.Responsive to movement of work
467	.Responsive to torque on work
468	..With marking mechanism
469	..Means for regulating motor
470	...Fluid motor
471	..Permanently deformable component
472	..Relatively movable work contacting components
473	..Rotatable, coaxial, clutching components
474	...Having intermediate, disparate, interlock element
475	...Having complementary formations
476	...Having friction type contact surfaces
477	..Work engaging portion attached to and turned by resilient member
478	..Work engaging portion pivotally or rotatably connected to handle
479	..With electric signal device
480	..Axis of connection coaxial to rotational axis of work
481	....With arm extending from portion
482	....With pivoted locking pawl
483	...With arm extending from portion and through connection
54	.Machine
55	..Bolt-holding
56	...Gear-operated
57	..Gear-operated
57.11	...With motor
57.12	....Oblique angle drive
57.13	....Right angle drive
57.14	....Parallel axis drive
57.15	...Round work
57.16	....With additional work-engaging means
57.17	....Flexible jaw

	WRENCH, SCREWDRIVER, OR DRIVER THEREFOR
	.Machine
	..Gear-operated
	...Round work
57.18	....Cam-operated jaw
57.19	....Fluid-operated jaw
57.2	....Pivoted jaw
57.21	....Sliding jaw
57.22	...Multiple drive or driven means
57.23	....With magazine
57.24	...With support
57.25	....Vehicular
57.26	...Adjustable angle drive
57.27	....Flexible shaft
57.28	...Oblique angle drive
57.29	...Right angle drive
57.3	...Parallel axis drive
57.31	...Common axis drive
57.32	..Double or duplex
57.33	..Round work
57.34	...With additional work-engaging means
57.35	...With support
57.36	..Multiple work-engaging means
57.37	..With feed or magazine means
430	...Utilizing fluid to convey work
431	...Including chute having longitudinal axis collinear with rotational axis of work turning portion
432	...Including vibratory work supporting member
433	...Including revolvably driven work contacting member
434	...Including driven, flexible, work supporting strip
435	...Including driven, reciprocating, conveying member
57.38	..With tensioning means
57.39	..Step by step
57.4	..With support
57.41	...Vehicular
57.42	..Direct drive
57.43	...Flexible
57.44	...Fluid
57.45	...Oblique angle
57.46	...Tangential engagement
57.5	.Turret head
74	.Wheel or endless track operated
75	..Hub-rim grasp
76	...Internal
58	.Handle clutched to head
58.1	..With additional head-turning means
58.2	..Radially slotted or open end head
58.3	..Axially movable clutching parts
58.4	..Positive two-way drive (e.g., dog clutch)
58.5	..Radially extending eccentrically movable handle
59.1	..Ball or roller wedge
60	..One-way detent drive, e.g., ratchet
61	...Pivoted pawl
62	....Reversing
63	.....Single
63.1	...Reversing
63.2	....Single pawl
436	.Having work engaging and force exerting portion inserted into cavity (e.g., allen wrench, screwdriver)
437	..Combined with or usable as diverse type wrench
438	..Having structure adapting portion or tool for separation
439	..Including discrete, separately usable inserted portions
440	...Pivotally or rotatably mounted
441	..Inserted portion cuts into or deforms cavity
442	..Inserted portion having relatively movable components
443	...Having camming or wedging element for moving components
444	....Axially shiftable element located between and wedging against components
445	.....With threaded surface for cooperating with mating tool structure
446	....Rotatable element located between and camming against components
447	...Having cooperating threaded element type actuating means
448	...Having resilient or spring biased component
449	....Biased component rotated about axis collinear to rotational axis of tool
450	..Inserted portion mounted to pivot or swivel relative to longitudinal axis of handle
451	..With separate means for guiding or gripping work
452	...Having resilient, relatively movable, work gripping members
453	....With camming or wedging element for moving members
454	...Having pivoted, relatively movable, work gripping members
455	....With camming or wedging element for moving members
456	...Having member with work underlying portion
457	....Member spring biased for axial movement
458	....Resilient member
459	..Inserted portion having threaded periphery
460	..Inserted portion having plural, noncollinear blades (e.g., Phillips)
461	..Inserted portion having plural, separate, work engaging projections
64	.Flexible
65	..Threaded adjustment
65.2	..Link
68	...Handle jaw
69	....Pivoted
70	....Duplex
65.4	...Toothed adjustment
73	.U-crank arm
77	.Double-ended, simultaneous adjustment
90.1	.Plural pivoted jaws and handle-lever
90.2	..Cam or gear operated
90.3	..Jaws enclose work
90.4	...Including latch to connect jaw to handle-lever
90.5	....At least three jaws enclose work
90.6	...Including latch to connect pivoted jaws
90.7	....At least three jaws enclose work
90.8	.....Two jaw pairs connected by latch
90.9	..Including means to adjust or to secure jaw in adjusted position
91.1	..Slidable pivot
91.2	..First jaw pivoted directly to handle and to second jaw
91.3	..Two jaws pivoted directly to intermediate member
92	.Pivoted inner jaw
93	..Nut or screw fulcrum
94	..Pin fulcrum
95	...Roller jaw
96	....Pinion
97	...Spring-pressed
	.Pivoted outer jaw
	..Fixed fulcrum
98	...Nontraveling jaw
99	....Spring-pressed
100	...Traveling jaw

	WRENCH, SCREWDRIVER, OR DRIVER THEREFOR
	.Pivoted outer jaw
	..Fixed fulcrum
	...Traveling jaw
101	....Nut fulcrum
102	....Rocking sleeve
103	.....Spring-pressed
104	......Fulcrum washer
105	......Sleeve-enclosed nut
106	..Traveling fulcrum
107	...Threaded handlebar
108	....Axillary rotating
109	...Slotted guide
110	...Fulcrum tooth and rack
111	.Pivoted side jaw
112	..Bevel-closing
113	...Cammed into socket by axial nut or screw
114	....Sleeve socket nut
115	...Rotating ring
116	...Wedge
117	..Rocking link
118	..Transverse screw clamp
126	.Sliding jaw, handle-lever grip
127	..Claw
128	.Sliding jaw, cam-closing
129	.Slidable jaw adjustments
129.5	..Rack
131	...Interlocking jaw handles
132	...Locking set screw or nut
133	...Pinion lock
134	...Pivoted rack catch
135	....Nontraveling
136	.....Intermediate fulcrum
137	....Transverse
138	....Cam-seated
139	....Indirectly operated
140	....Intermediate fulcrum
141	...Shank-engaged cam
142	...Sliding rack catch
143	....Cam-seated
144	....Screw- or nut-seated
145	....Spring-seated
146	...Spring-seated jaw frame
147	....Integral frame and teeth
148	...Wedge lock
149	....Wedge pusher
150	..Shank grip
151	...Side jaw
152	...Clutch yoke
153	...Roller clutch
154	...Locking incline
155	..Thread
156	...Displaceable half nut
157	...Displaceable nut or screw
158	....Traveling screw, shank rack
159	...Interrupted
160	....Nut set
161	.....Traveling nut
162	.....Traveling screw, shank rack
163	...Right and left threads
164	...Rotatable threaded handle shank
165	...Sliding side jaw
	...Nontraveling rotatable nut
166	....Intermediate
167	.....Causing outer jaw to slide
168	....Terminal
169	.....Causing outer jaw to slide
170	...Nontraveling rotatable screw
171	....Bracket-bearing
172	....Spiral groove engaged by slidable actuator
173	...Traveling and rotating nut
174	....Threaded handlebar
175	...Traveling and rotating screw
176	....Shank rack
176.1	.Spanner
176.15	..Having means to engdage work axially

176.2	...And means to engage peripheral face of work
176.3	..Having relatively movable jaws
119	.Rigid jaws
120	..Round work
121.1	..Enclosed (e.g., socket)
122	...Watch and clock keys
123	....Dust protectors
124.1	...With nut ejectors
125	...Work-holding
124.2	...Slotted socket
124.3	...Through socket and perpendicular handle
124.4	...Plural sockets
124.5	....Slidably or pivotally connected to handle or each other
124.6	...Having axial opening for removable handle
124.7	...Having perpendicular handle
125.1	..Double-ended
177.1	.Handle or shank
177.8	..Angularly adjustable handle
177.9	...With yieldable one-way detent
177.2	..Extensible handle or handle extension
177.3	..Having finger opening
177.4	..Having means to store parts
177.5	..Having terminal cross arm
177.6	..Foldable or flexible
177.7	..Having pivoted handle section
177.75	...Universal joint
177.85	..Including socket and boss type connecting means
178	.Reversible jaws
179	.Sliding jaw face
462	.Having stationary structure for supporting wrench or screwdriver
180.1	.Attachment, or including adjunct or replaceable portion
181	..Cutters
182	...Rotary
183	..Roller clutch
184	..Shank-embracing
185	..Socket reducers
185.1	..Removable jaw face
185.2	..Movably mounted
186	.Jaw faces
19	DEFORMABLE HEAD MALLET
20	HAMMER
21	.Having work protector surrounding face
22	.Having shock absorbing means
23	.Having nail placer
24	..Magnetic
25	.Having replaceable striking face
26	.Having plural striking faces
27	.Rod encircling type
28	BIT STOCK HAVING MANUAL DRIVE MEANS (E.G.,BRACE)
29	.Having ratchet mechanism
30	..Straight crank arm
31	..Adjustable pawl
32	..Pivoted pawl
33	..Sliding pawl
34	.Straight stock having side driving gear
35	.Having U-shaped crank arm
36	..Speeding gear
37	..Bit shaft inclined relative to crank
484	FOR ADJUSTING VARIABLE POSITIONED PARTS
485	SPREADER
486	RESILIENT ARTICLE TENSIONER OR COMPRESSOR
489	HANDLE FOR TOOL
490	.Having storage compartment
491	.Having discrete relatively movable tool clamp
492	.Having cap or reinforcing means
487	HAND HELD HOLDER OR HAVING CLAMP
488	MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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900 WRENCH OR SCREWDRIVER CONSTRUCTED FROM SPECIFIC MATERIAL
901 WRENCH OR SCREWDRIVER ADAPTED TO TURN EYE SCREW

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DIGESTS

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DIG 1	Tool-support adjuncts
DIG 2	Spiral drive for wrenches
DIG 3	Wrenches, thread-adjustment lock
DIG 4	Double adjustments, sliding jaw
DIG 5	Wrench scales and indicia
DIG 6	Spring means biasing wrench jaws
DIG 7	Bicycle spoke or nipple wrench
DIG 8	Crowfoot-type wrenches
DIG 9	Pivoted jaw latch means
DIG 10	Iris-type wrench head
DIG 11	Adapters for different-sized fasteners
DIG 12	Power hammer

CLASS 82 TURNING

DECEMBER 1990

1.11	PROCESS OF TURNING
1.12	TALKING MACHINE TABLET
1.2	RADIALLY MOVING ROTATING TOOL INSIDE BORE
1.3	.Forming non-circular bore
1.4	.Tool simultaneously moving axially
1.5	..Pivoted to tool-carrier
18	PATTERN SECTION
19	.Cam-controlled cutter
11	AXIAL PATTERN
11.1	.Having transverse tool and templet guide
11.2	..With workpiece guage
11.3	..Having electrical actuator
11.4	...And hydraulic actuator
11.5	..Having hydraulic actuator
12	.Pivoted tool rest
13	.Profiled cutter
	TAPERS
15	.Offset work axis
	.Transversely shifted cutter
17	..Templet controlled
16	..Gear controlled
46	SEVERING OR CUT-OFF
47	.Processes
48	.Automatic and/or triggered control
49	.Combined with means to sharpen tool(s)
50	.Combined with means to apply fluid
51	.Combined with means to heat tool and/or work
52	.With dust or chip handling
53	.Including scrap cutting means
53.1	.Flying cutter type
54	.Cutting couple straddling work
55	..With pattern, guide or cam means (noncircular product)
56	..Plural cutting means (pairs, or pair, plus single)
57	..Rotary shear pair
58	...Tool axes parallel to axis of work rotation
59	.Interrelated means for tool infeed and circumrotation
60	..Dependent upon reaction to work
61	..Infeed cam disk rotation geared to tool holder rotation
62	...Axial infeed cam
63	...Including centrifugal balancing means
64	...Scroll plate infeed cam
65	..Infeed cam plate braked with respect to tool(s) carrier plate
66	..Orbital cogwheel and fixed detent
67	..Common gear means
68	...Including adjustable means to vary gear speed
69	...With manual disconnect lever
70	..With means to feed work
70.1	.Infeed means
70.2	..With means to circumrotate tool(s) about work
71	...Fluid means for relative tool actuation
72	...Gear means for tool actuation
73	....Including axial cam
74	.....With indicator
75	...Bell crank linkage for tool(s) holder
76	...Resilient means for tool actuation
77	....With means for manual retraction
78	..Hand crank for tool holder
79	..Power driven eccentric
80	...Fluid motor
81	...Plural tools
82	..Tool within work
83	..With means to rotate tool(s)
84	...Including rotatable cutters supporting work
85	...Planetating work mandrels
86	...Pivoted tool carriage
87	....With adjustable work stops
88	...Eccentric periphery rotary tool
89	...Means to feed work axially
90	...Translatable work support carriage
91	...With tool groove in support roll(s)
92	..Rotatable tool(s) driven by contact with work
93	...Axially movable tool support
94	....Freely floating parallel to axis
95	.....With supplemental nonrotative tool
96	....Including clutch control for work rotation
97	...Including resilient means urging work against rotary support
98	..Separate means for plural tools
99.1	..Spring urged
99.2	...For window shade
100	..Tool adjustment and/or stop
101	..With means to support and/or rotate work
102	..With means to feed work
103	LATHE FOR PULLEY
104	LATHE FOR WHEEL OR AXLE
105	.In situ lathe for railroad wheel
106	LATHE FOR CRANK OR CRANK PIN
107	.Portable lathe for crank pin
108	.Having work oscillator
109	..Having work driver
110	LATHE FOR SCREW CUTTING
111	.Having swinging feed nut and tool bar
112	PORTABLE LATHE FOR BRAKE DRUM, DISC, OR SHOE
113	PORTABLE LATHE FOR PIPE TURNING
114	PORTABLE LATHE FOR PISTON GROOVING
115	BENCH LATHE
116	.Watchmaker's lathe
117	LATHE
118	.With program control
119	..And transmission
120	..And tool turret
121	.With tool turret
122	.Vertical
123	.Having facing tool fed transverse to work
124	.With work feeder or remover
125	..Magazine type
126	...Bar feeder
127	..Bar feeder
128	.Portable
129	.Multiple
130	.Having hollow cutter head
131	.Revolvable cutter heads
132	.Carriage feed
133	..Control
134	...Electrical type
135	..Apron mechanism
136	...Feednut control
137	..Slide rest
138	...Multiple tool support
139	...Tool relief
140	..Change gears
141	..Feedscrews and rods
142	.Headstock
143	..Speed changing gear
144	...Speed change gears for maintaining constant cutting speed
145	..Spindle reverser
146	..Spindle or work angler
147	..Spindle and bearings
148	.Tailstock
149	.Bed
150	.Center
151	..Alignment adjuster
152	.Attachment
153	..Stop (e.g., carriage, tool, work, etc.)
154	...Tool slide
155	...Collet or spindle

	LATHE
	.Attachment
	..Stop (e.g., carriage, tool, work, etc.)
156	...Indexible (e.g., roll type, etc.)
157	.Tool and work rest
158	.Tool rest
159	..Turret type holder (e.g., multiple tools, etc.)
160	..Quick release tool or holder clamp
161	..Tool post
162	.Work rest
163	..With noise or vibration dampener
164	..Center rest
165	WORK DRIVER
166	.Lathe dog
167	..Cam grip
168	.Mandrel
169	..Expansible
170	CENTERER
171	DRILL PRESS ATTACHMENT FOR TURNING
172	ATTACHMENT FOR CUTTING A VALVE
173	MISCELLANEOUS
	*****************************
	CROSS-REFERENCE ART COLLECTIONS
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900	LATHE THERMAL REGULATION
901	CHIP REMOVAL
902	OIL GROOVING DEVICE
903	BALANCING AND CENTERING
904	VIBRATING METHOD OR TOOL
905	TRANSMISSION ACCESSORY OR CONTROL

CLASS 83 CUTTING

861 OTHER THAN COMPLETELY THROUGH WORK THICKNESS OR THROUGH WORK PRESENTED
862 .Combined types of cutting
863 ..Including use of rotary scoring blade
864 ...Plural independent rotary scoring blades
865 ..With infeeding of work
866 .Pricking
867 ..Including use of orbiting tool carrier
868 ..With infeeding of tool
869 .Edge trimming (e.g., chamfering, etc.)
870 .Splitting
871 ..By use of endless band or chain knife
872 ..By use of rotary blade
873 ...Plural independent rotary blades
874 ..With infeeding of work
875 .Grooving
876 ..By use of plural independent rotary blades
877 ...Forming common groove
878 ...Blades turning about perpendicular axes
879 .Scoring
880 ..Processes
881 ..Active means to control depth of score
882 ..Serially
883 ..Plural independent scoring blades
884 ...Rotary scoring blades
885 ....On opposite sides of work
886 ..Rotary scoring blade
887 ...With means to rotate blade
13 PROCESSES
14 .With preparatory or simultaneous ancillary treatment of work
15 ..By heating or cooling
16 ...At localized area (e.g., line of separation)
17 ..By distorting within elastic limit
18 ...By stretching
19 ...By compressing
20 ...By flexing around or by tool
21 ....To conform to shape of tool
22 ..By fluid application
23 .With subsequent handling (i.e., of product)
24 ..By fluid application
25 ..By retaining or reinserting product in workpiece
26 ..By accelerating travel
27 ..By separating products from each other
28 ..By moving work support to which a tacky product is adhered
29 .Including stacking of plural workpieces
30 .Puncturing
31 .With manipulation of tool protective strip (e.g., backing strip)
32 .Cutting of interdigitating products
33 .Making and using a registration cut
34 .With reorientation of tool between cuts
35 .With reorientation of work between cuts
36 ..Relative to same tool
37 .During movement of work past flying cutter
38 ..Cyclically varying rate of tool or work movement
39 .Plural cutting steps
40 ..Blanking and cutting
41 ...Cutting to join blanked holes
42 ..Repetitive transverse severing from leading edge of work
43 ...Alternately forming products of less than total width of work
44 ...With longitudinal severing
45 ....Effected by plural steps
46 ....Along zigzag or undulant line or cut
47 ....Prior to transverse severing
48 ...Non-rectilinear cutting
49 ..Plural cutting steps effect progressive cut
50 ..Repetitive blanking
51 .Cutting part way through from opposite sides of work
52 .Effecting diverse or sequential cuts in same cutting step
53 .Cutting by direct application of fluent pressure to work
54 .Cutting wall of hollow work
55 .Blanking
56 .Cut advances across work surface
57 WITH MANUALLY ACTUATED MEANS TO DISTURB CYCLIC OPERATION
58 WITH RANDOMLY ACTUATED STOPPING MEANS
59 .With means to permit subsequent hand operation
60 .With stop-signal-responsive means to actuate auxiliary cutter
61 .With sensing of product or product handling means
62 .Responsive to tool detector or work-feed-means detector
62.1 ..Responsive to tool characteristic
63 .Responsive to work sensing means
64 ..Of buckled work
65 ...Running loop
66 ..Detector supported on or urged against work
67 ...Resiliently biased
68 .Manually operated
69 WITH STOPPING MEANS EFFECTIVE ON COMPLETION OF PREDETERMINED NUMBER OF TOOL CYCLES
70 WITH MEANS TO ACCOMPLISH DELAYED STOPPING AFTER CESSATION OF CYCLIC OPERATION
72 WITH MEANS TO MONITOR AND CONTROL OPERATION (E.G., SELF-REGULATING MEANS)
73 .Including means to monitor product
74 .Including means to correct the sensed operation
75 ..And modify another operation
75.5 ..Optimizing product from unique workpiece
76 .Including means to compensate tool speed for work-feed variations
76.1 WITH CONTROL MEANS RESPONSIVE TO REPLACEABLE OR SELECTABLE INFORMATION PROGRAM
76.2 .For cutting component of animal, e.g., hair clipper
76.3 .Removable element carries program
76.4 ..Indeterminate length web or strand
76.5 ...Magnetic
76.6 .Arithmetically determined program
76.7 ..With condition sensor
76.8 ...Responsive to work
76.9 ..With operator input means
77 WITH MEANS TO WEIGH PRODUCT
78 WITH PRODUCT HANDLING MEANS
79 .Initiated by means responsive to product or work
80 ..Responsive to work
81 .Initiated by means directly responsive to tool movement
82 ..In return motion of tool
83 .Including means to drape the product
84 .Including means to form or hold pile of product pieces
85 ..In nested relation
86 ..In stacked or packed relation
87 ...Stacker sweeps along product support
88 ...Including cut pieces overlapped on delivery means
89 ...And means to separate product portions

	WITH PRODUCT HANDLING MEANS
	.Including means to form or hold pile of product pieces
	..In stacked or packed relation
90	...Including means to move stack bodily
91	....By movement of stack holder
92	.....By timed relocation of holder along path of stack growth
92.1	......Interrelated adjustment of holder movement and work-feeder
93	...And means to resist stack movement
94	...Including means to deliver individual pieces to a stack holder
95	....With spindle to enter a hole or to make hole in product
96	....By face-engaging means to push product broadside into stacked relation
97	...Upon emergence from hollow cutter
98	.By fluid current
99	..Plural blasts directed against plural product pieces
100	..By suction means
101	.By brush means
102	.Including means to divert one portion of product from another
102	..By kerf entering guide
103	..Remaining or re-inserted product portion from base material
104	..Gravity type
105	..Deflecting guide
106	...Positionable gate in product flow path
107	..Diverging product movers
108	.Including means to replace product in base material after cutting
109	.Means to move, guide, or permit free fall or flight of product
110	..Means to move product at speed different from work speed
111	..Means to move product out of contact with tool
112	...With means to effect subsequent conveying or guiding
113	...Out of contact with a rotary tool
114	....Mover surrounds axis of tool rotation
115	....Mover mounted on rotary tool
116	.....For radial movement of product
117	......Resiliently mounted
118	....Mover is resiliently mounted
119	....Pivoted mover
120	.....And plural rotating tools
121	....Stationary mover
122	.....And plural rotating tools
123	...By ejector within a hollow cutter
124	....And means to strip the outer surface of a cutter
125	....Ejector operated with return stroke of cutter
126	....By means carried by cooperating cutter
127	....By cam-operated ejector
128	....By resiliently biased ejector
129	...Moving stripper timed with tool stroke
130	....And alternatively movable to or from operating position
131	....Latched stripper released by tool return
132	....Plural strippers operative upon plural tools
133	....Single stripper operative upon plural tools
134	....Spring arm stripper
135	....Linkage actuated
136	....Carried by moving tool element or its support
137	.....Fluid pressure actuated stripper
138	.....Stripper biased against product
139	......Elastomeric stripper contacting product
140	......By spring means
141	......By free weight of stripper
142	....Stripper biased against product
143	.....Spring biased stripper
144	...Manually operated stripper
145	...Stationary stripper
146	....Stripper encircles moving tool
147	..Blockable exit port
148	..Tool conforming member interposed between tool and work
149	..Including means to move, or resist movement of, cut pieces along delivery chute
150	..Active delivery means mounted on tool support
151	..Product mover including gripper means
152	...Suction gripper
153	...Reciprocating product handler
154	...Rotating or oscillating product handler
155	..Endless conveyer
155	...And means to remove product there-from
156	..Roller(s)
157	..Tiltable or withdrawable support
158	..Means to move product laterally
159	...Oscillating means
160	...Reciprocating means
161	..Means to move product in a non-rectilinear path
162	..Guide
163	...Abutment in path of product being moved by work feeder
164	...Product-diverting conduit in or from hollow tool
165	...Inclined conduit, chute or plane
166	...Abutment interposed in path of free fall or flight of product
167	WITH RECEPTACLE OR SUPPORT FOR CUT PRODUCT
168	WITH MEANS TO CLEAN WORK OR TOOL
169	WITH MEANS TO APPLY TRANSIENT NONPROPELLANT FLUENT MATERIAL TO TOOL OR WORK
170	WITH MEANS TO CONTROL OR MODIFY TEMPERATURE OF APPARATUS OR WORK
171	.Of tool
174	WITH TOOL SHARPENER OR SMOOTHER
174	.Spatially-fixed tool
175	WITH MEANS TO STRETCH WORK TEMPORARILY
176	WITH MEANS TO DEFORM WORK TEMPORARILY
177	BY FLUID BLAST AND/OR SUCTION
178	BY TOOL INSIDE HOLLOW WORK
179	.Work pre-packed with internal tool(s)
180	.With expanding mandrel
181	.Interrelated tool feed means and means to actuate work immobilizer
182	..Actuated clamp element and work holder coact to position work
183	.Synchronized tool and work feeding means
184	.With means to position tool(s) for cutting
185	.One tool (either internal or external) having compound motion
186	..Annulus and disc type tool pair
187	.One tool having unidirectional rotary motion
188	.One tool having only rectilinear motion(s)
189	..Annulus and disc type tool pair
190	...A tool has a sequence of motion in plural paths
191	..Internal tool is an active cutter

BY TOOL INSIDE HOLLOW WORK
.One tool having only rectilinear motion(s)
192 ..Multiple external active tools
193 ...Tools operate in a substantially common transverse plane of cut
194 ....With tool actuating cams on a common support
195 .With manually actuated means to position, or facilitate positioning of work
196 BY MEANS TO MISALIGN ALIGNED APERTURED TOOLS
197 .Combined with another type tool of the class
198 .Rectilinear relative movement only
199 .Rotary relative movement solely about a single pivot
200 ..With plural apertures in one or both carriers
200.1 BY INCREASED TENSIONING OF WORK-ENCLOSING WIRE
202 TOOL ENGAGES WORK DURING DWELL OF INTERMITTENT WORKFEED
203 .Unicyclic
204 ..Convertible to and from unicyclic
205 ..Controlled by mechanical means
206 .With work-moving clamp jaw
207 .Work moved solely by movable abutment
208 .Operation initiated by work-driven detector means to measure work length
209 .Work-sensing means to control work-moving or work-stopping means
210 ..With means to initiate tool feed by same control impulse
211 .Work-sensing means to initiate tool feed
212 ..With work-stopping abutment in sensing means
212.1 .Plural tools at same station, one positioned for continuous engagement with work
213 .Plural tools successively actuated at same station
214 ..During one dwell period
215 .Tool has motion additional to cutting stroke during tool cycle
216 ..Tool has additional motion during work dwell
217 ...Included in plural cutting cycles
218 ..Tool has work feeding motion
219 .With variable direction of work feed from cycle to cycle
220 ..In one of certain selected directions
221 .Interlock between tool actuating and work feed means
222 .Tool motion initiates work feed and vice versa
223 .Stored energy means for moving work or tool, loaded by tool or work
224 ..Work feed means actuates energy storage device for tool
225 .Work feed means controlled by means mounted on tool or tool support
226 ..Such means drives the work feed means
227 ...Work feed means carried by tool or tool support
228 ...With supplemental work feed means
229 ...On return stroke of tool
230 ..Work feed means halted by means on tool or tool support
231 .Work feed mechanism in non-feed motion effects or initiates tool actuation
232 ..By striking tool actuator
233 ...Non-feed motion is reverse to feed motion
234 .With means to vary number of work-feed increments between tool strokes
235 .Dwell caused by imposing reverse motion on portion of flexible moving work
236 .With uninterrupted flow of work from supply source
237 .Work feed increment shorter than longitudinal tool field
238 .Unequal work feed increments in recurring series
239 ..Work carriage carries ratchet means to determine increments
240 .Means to change tool position, or length or datum position of work- or tool-feed increment
241 ..With means to vary magnitude of work-feed increment
242 ...Multi-increment type (e.g., ticket-issuing)
243 ....Length selector initiates machine operation
244 ...By change in length of one member of feed driving linkage
245 ....Rotating member
246 ...By change of effective shape of driving or driven surface of element of work-feed mechanism
247 ...By adjustment of fixed stop
248 ..With means to vary magnitude or base position of tool stroke
249 .With means to facilitate manual repositioning (shift) of work
250 .With means to produce plurality of work-feed increments per tool cycle
251 ..Including supplemental work-feed means
252 ...Manual
253 ...With stop adapted to engage abutment surface on work
254 ....Plurality of work stops successively effective
255 .Work fed successively to plural tools
256 ..With change of direction between tools
257 .Work advance occurs during return stroke of tool
258 .Dwell defined only by "dead-center" of rotating crank
259 .Dwell initiated by disengagement of surface of moving frictional feed means from work
260 ..Feed means has interrupted frictional surface
261 ..Feed means has rotary motion
262 .Dwell caused by clamping or blocking work during continuous operation of feed means
263 .With means to control magnitude of work-feed increment or work acceleration
264 ..Means to prevent random or excessive work feeds
265 ..Full-stroke required of feed means
266 .Work feed functions as tool support
267 .With rotary work-carrier
268 .With abutment to position work being fed with respect to cutter
269 ..With slip between positioned work and feed means
270 .Work guide and feed means have open side
271 .Work feed means modified to maintain clearance from tool
272 .Plurality of work feed means in separate paths
273 .Intermittent drive type of gearing for work-feed means
274 ..Gearing modified to lock the work-feed means
275 ..Mutilated gear in mesh with gear driving work-feed means

TOOL ENGAGES WORK DURING DWELL OF INTERMITTENT WORKFEED
276 .Work-feed element contacts and moves with work
277 ..Comprises a work-moving gripper
278 ..Comprises element entering aperture in, or engaging abutment surface on, work
279 .With means to guide, position, or present work to work-feed means
280 ..Means to transport work to work-feed means
281 ...Including means to pick articles from pack or stack
282 .With means to clamp work during dwell
283 .One-revolution clutch in tool drive
284 CUTTING MOTION OF TOOL HAS COMPONENT IN DIRECTION OF MOVING WORK
285 .With means to initiate intermittent tool action
286 ..Tool moved in response to work-sensing means
287 ...With means to vary "length" of product
288 ....To vary an end-product "length" (e.g., "crop cut")
289 ...With photo-electric work-sensing means
290 ...With trip-switch work-sensing means
291 ....To initiate feed movement of tool
292 .....And to initiate flying movement of tool
293 ...With work-responsive means to initiate flying movement of tool
294 ....With flying work-gripper means related to tool carrier
295 ....With means controlling flying speed dependent on work speed
296 ..With means to vary frequency of initiation
297 ...By orbitally traveling trigger pin(s)
298 .Interrelated control of tool and work-feed drives
299 .With means to concurrently adjust flying frequency and retain flying speed of tool
300 .Plural diverse flying cutters
301 .Combined with other type cutter
302 ..With slitter
303 .Plural separately mounted flying cutters
304 .With means to render cutter pass(es) ineffective
305 ..With means to produce "mis-cut"
306 .Oscillating work shifter adjacent cutter
307 ..Work actuated senser initiates shifter
307.1 .Wire tool
307.2 ..On tool support having reciprocation parallel to direction of work-feed
307.3 ...And rotation about axis parallel to direction of work-feed
308 .Tool flies by engagement with the work
309 ..Tool merely flexes with moving work
310 .Flying support or guide for work
311 .With tool speed regulator
312 .With work feed speed regulator
313 ..With means to vary cyclically speed of work
314 .Spring return of tool in counter-fly direction
315 .Tool mounted on oscillating standard
316 ..Both tools of couple on single standard
317 ...One tool swings out of work path on return stroke
318 .Tool carrier shuttles rectilinearly parallel to direction of work feed
319 ..Including means to secure work to carrier
320 ..Both members of cutting pair on same carrier
321 .Orbital motion of cutting blade
322 ..Work feeder mounted on tool support
323 ...Gripper type feeder
324 ..Tool speed varied within each orbital cycle
325 ..Work feed gripper carried on endless belt
326 ..Endless belt or chain tool carrier
327 ..Constantly oriented tool with arcuate cutting path
328 ...Cutting couple type
329 ..Rotatable-disc type tool on orbiting axis
330 ...Idling disc
331 ..Rotary tool
332 ...Segmented disc slitting or slotting tool
333 ...With undulant cutting edge (e.g., "pinking" tool)
334 ...Single tool action drive
335 ....With one-revolution drive
336 ...With loop former preceding tool
337 ...Compound movement of tool during tool cycle
338 ....Axial reciprocation of tool
339 ...Interconnected work feeder and tool driver
340 ...Side cutting helical blade
341 ...With means to cause progressive transverse cutting
342 ....With helical cutter blade
343 ...With cooperating rotary cutter or back-up
344 ....Cooperating tool axes adjustable relative to each other
345 ....With radial overlap of the cutting members
346 ....With anvil back-up
347 .....With resilient anvil surface
348 ....Resiliently urged cutter or anvil member
349 ...With cooperating stationary tool
350 CUTTER WITH TIMED STROKE RELATIVE TO MOVING WORK
351 .Work swings about progressively cutting tool during tool stroke
352 .Tool actuated by movable work support
353 .Traveling cutter
354 .With means to vary timing of tool feed
355 .Uniform periodic tool actuation
356 ..With periodic lateral feed of tool or work
356.1 ..With plural tool stations
356.2 ..Reciprocating tool
356.3 ..With plural tools on a single tool support
357 .With plural tool stations
358 OPERATION CONTROLLED BY MEANS RESPONSIVE TO PRODUCT
359 .Actuation of tool controlled
360 OPERATION CONTROLLED BY DETECTOR MEANS RESPONSIVE TO WORK
361 .With means to control work-responsive signal system
362 ..To delay response to work-senser
363 ..To change length of product
364 .With plural work-sensing means
365 .With photo-electric work-sensing means
366 .Release of interlock controlled
367 .Movement of work controlled
368 .Positioning of tool controlled
369 .Actuation of tool controlled by work-driven means to measure work length

	OPERATION CONTROLLED BY DETECTOR MEANS RESPONSIVE TO WORK
370	.Actuation of tool controlled in response to work-sensing means
371	..Sensing means responsive to work indicium or irregularity
372	..With trip-switch in work-sensing mechanism
373	INTERRELATED TOOL ACTUATING AND WORK GUIDE MOVING MEANS
374	INTERRELATED TOOL ACTUATING MEANS AND MEANS TO ACTUATE WORK IMMOBILIZER
375	.Work clamp
376	..Tool deflected by guide on tightened clamp
377	...With means to control clamping force
378	..Clamp driven by reaction from tool force
379	..With means providing for plural steps in clamping stroke
380	..With sequencing means
381	..With provision for manual control of clamp
382	..Tool or tool support on movable clamp jaw
383	..Clamp moved by direct impact of tool or tool support
384	...Clamp retracted by impact of tool or tool support
385	..Clamp actuating means driven by tool or tool support
386	...Clamp yieldably driven by tool or tool support
387	....With resilient drive element
388	..Clamp driven by yieldable means
389	...Drive means is resilient
390	...Fluid pressure yieldable drive means
391	.Work-stop abutment
392	..Oppositely effective abutments
393	..With cyclic means to alter work-stopping position
394	..Stop partakes of tool motion
395	...Carried by tool or tool support
396	INTERRELATED TOOL ACTUATING MEANS AND MEANS TO ACTUATE WORK-MOVER STOP
397	INTERRELATED TOOL ACTUATING MEANS AND GUARD MEANS
397.1	.Work guard
398	.Cutter guide slot closer
399	OPERATION OF MEMBER CONTROLLED BY MEANS RESPONSIVE TO POSITION OF ELEMENT REMOTE FROM MEMBER (E.G., INTERLOCK)
400	.With means to initiate operation of member
401	WITH MEANS TO CONVEY WORK RELATIVE TO TOOL STATION
402	.By fluid current
403	.Centrifugal feed to tangential tool (e.g., "Beria" type)
403.1	.With means to regulate work-feed speed
404	.Including means to move work from one tool station to another
404.1	..Tool stations angularly related
404.2	...Work manipulated between tool stations
404.3	...With static tool
404.4	..Tool stations staggered relative to one another
405	..Punch or die station
406	..Notcher or pinker station
406.1	..Work reciprocated past double-edge knife
407	..Slitter station
408	...And transverse cutter station
703	.Plural passes of diminishing work piece through tool station
704	..Work alternately, angularly re-oriented relative to tool station
705	...By additional means to engage work and orient it relative to tool station
706	...By roller or roll-like element
707	..Work rectilinearly reciprocated through tool station
708	...With means to cause or permit angular re-orientation of work about axis parallel to plane of cut
709	....By endless member having work-engaging teeth
710	....By member having work-engaging tooth
711	.....Including plural work-engaging teeth
712	......Fluid operated
713	...With means to cause movement of work transversely toward plane of cut
714	....By means to cause movement toward and away from plane of cut
715	.....Actuated by movement of a member on reciprocating means
716	.....Actuated by passive means which is external to reciprocating means
717	....By means to define increment of movement toward plane of cut
718	.....Interrelated with movement of reciprocating means
719	.....By pusher mechanism
720	......With additional work holding or positioning means
721	.......Work holding means includes actuator
722	......Including plural, simultaneously acting pusher elements
723	.......Independently adjustable
724	.......With additional means to retract elements
725	.......Power derived from movement of reciprocating means
726	.......Power derived from fluid pressure means
727	.......Movement by screw means
728	.......Movement by rack and pinion or pawl
729	......With handle
730	.....By carriage
731	...By cable or belt drive
732	.With means for transverse positioning of work on a moving conveyor
409	.With work-constraining means on work conveyer (i.e., "work-carrier")
409.1	..Plural means to constrain plural work pieces
409.2	...End of work protrudes through aperture in carrier
410	..With means to guide work-carrier in non-rectilinear path
410.7	...About axis fixed relative to tool station
410.8	....Infeed
410.9	.....About vertical axis
411.1	......Cut normal to axis
411.2	.......Work-guide tube
411.3	.....Cut normal to axis
411.4	......Oscillating work-carrier
411.5	......Multiple cutters
411.6	.......Coaxial rotary cutters
411.7	....Work stationary during cut
412	..With means to orient or position work carrier relative to tool station
413	...By pattern or templet
414	...By indexing means
415	..With additional work-locating means on work-carrier
416	.With means to stop work-conveyer
417	.With means to store work articles
418	.With additional mans to engage work and orient it relative to tool station

	WITH MEANS TO CONVEY WORK RELATIVE TO TOOL STATION
	.With additional mans to engage work and orient it relative to tool station
419	..By work-stopping abutment
420	..By opposed lateral guide means
421	..With means to adjust additional means
422	.With means to press work to work-carrier
423	.With projections on work-carrier (e.g., pin wheel)
424	.Tool between tandem-arranged work carrying means
425	.Cut made parallel to direction of and during work movement
425.1	..Including non-concurrently acting tool
425.2	..Including plural, laterally spaced tools
425.3	...Tools mounted on common tool support
425.4	....Tools axially shiftable on support
426	..Interrelated work-conveying and tool-moving means
427	...With reciprocating tool (e.g., "jigsaw" type)
428	...With means to move tool laterally of feed direction during cutting
429	...With means to effect difference between work-speed and tool-speed
430	...Tool co-axial with work-conveying means
431	..With means to press work to tool
432	..Bevel-cutting tool
433	..Tool shiftable relative to work-conveying means
434	..Tool in contact with surface of work-conveying means
435	..Tool between laterally-spaced work-conveying means
435.1	..By work moving carriage
435.2	..By work moving flexible chain or conveyor
436	.By feed-roller
437	.Rectilinear movement only
733	.Work carrier rotates about axis fixed relative to tool station
734	.Interrelated work-feeding means and tool-moving means
743	TOOL CARRIER OR GUIDE-AFFIXED TO WORK DURING CUTTING
744	.By flexible work-engaging member
745	.Entirely work-supported
746	BY TOOL RECIPROCABLE ALONG ELONGATED EDGE
747	.With means permitting tool to be rotatably adjusted about its cutting edge during cutting
748	.With dynamic balancing or shock absorbing means
749	.With tool of another type
750	.With means to change to other type tool
751	.Plural reciprocable tools
752	.Stored energy furnishes drive in one direction
753	.With tool in-feed
754	..And auxiliary means for promoting or retarding tool in-feed
755	...By yieldable means
756	...And means to vary tool in-feed speed
757	...With interrelated tool actuating and in-feed means
758	..Of rectilinearly reciprocating tool
759	...With in-feed by pivoting carrier
760	..And means to prevent tool in-feed
761	..With passive means to guide tool directly
762	...By plural opposed guide surfaces
763	....Having relative adjustment between guide surfaces
764	....With relative adjustment between guide and work or work-support
765	.....By or with additional movable work-support portion
766	.....By rotation about an axis parallel to the work-support surface
767	.....By rotation about an axis perpendicular to the work-support surface
768	..Including means to cause non-rectilinear tool in-feed
769	..Of arcuately oscillating tool
771	..Of tool carrier on single moving pivot
772	...Pivot moves in closed loop
773	...Pivot moves to-and-fro in arcuate path
774	....Axis of arcuate path moves during cutting
775	...Pivot moves to-and-fro in rectilinear path
776	.Having uniplanar compound motion
777	..By plural arcuately oscillating carrier
778	..Constantly oriented tool travelling in orbit
779	..Tool rocks cutting reciprocations
780	...One tool reciprocates along fixed guide element
781	.With work-support and means to vary relationship between tool and work-support
782	.Arcuately oscillating tool carried on single pivot
783	.With means to support tool at opposite ends
784	..And apply drive force to both ends of tool
785	...By flexible drive means
786	...By reciprocating rigid support
788	BY ENDLESS BAND OR CHAIN KNIFE
789	.With programming means
790	.With cutter other than endlessly orbiting type
792	.Including contiguous oppositely moving knife portions
793	.With means to change to non-endlessly orbiting cutter
794	.With tool in-feed
795	..Including ground-traversing vehicle
796	..Including means to permit arcuate in-feed motion
797	...Including means to relocate path of in-feed motion
798	....Angular relative previous path
799	..By gravity
800	...With fluid in-feed regulating means
801	..By motor-driven mechanism
802	.With scale or indicator
803	.Including plural cutting zones
804	..With adjustment of separation between zones
805	...By lever means
806	...By screw-threaded means
807	..Including "figure-8" band
808	..Comprising plural bands
809	.Including means to adjust relationship between band and work-support surface
810	..By varying angle between band and work-support surface
811	...By tilting band carrier
812	....About point of intersection of cutting span and work-support surface
813	..By varying distance between band and work-support surface
814	.With means to guard or tension
815	..Including means to retard un driven pulley or sprocket

BY ENDLESS BAND OR CHAIN KNIFE
.With means to guard or tension
816 ..With means to vary distance between pulley or sprocket axes
817 ...And angular relationship of axes
818 ...Including means to yieldably bias pulley
819 ....By fluid means
820 .With special blade guide means
438 WITH MEANS TO GUIDE MOVING WORK
439 .In pivotal or arcuate movement
440 .Guide fixed to or integral with stationary tool element
440.1 ..Tool element cooperates with a second tool
440.2 .With guard
441 .With attachment or operative connection to tool carrier
441.1 .With attachment or operative connection to passive tool guide
442 .Guide cooperates with template or straight-edge secured to work
443 .Curved or deflecting guide
444 .Positively confines or otherwise determines path of work
445 .Adapted to permit maneuvering of work at tool zone
446 .With movable or yieldable guide element
447 ..Opposed to work-supporting surface
448 .Plural guide elements
449 ..Opposed
450 .Opposed to work supporting surface
451 WITH WORK IMMOBILIZER
452 .Means to clamp work
453 ..Combined with, peculiarly related to, other element
454 ...With or to tool guide
455 ...Guide for traveling cutter
456 ...Tool or tool support on movable clamp jaw
457 ..With means providing for plural steps in clamping stroke
458 ..With equalizer or self-aligning jaw
459 ..With biasing or counterbalancing means
460 ..Clamp driven by yieldable means
461 ..Liquid pressure actuating means
462 ..Including means to retain clamp jaw in position
463 ..Self-locking drive means
464 ..Manually actuated drive means
465 ..Including clamping face of specific structure
466 ..With means to adjust clamp position or stroke
466.1 .Gapped work-constrainer
467.1 .Work-stop abutment
468 ..With scale or indicator
468.1 ..Normal to plane of cut
468.2 ...Adjustable
468.3 ....Angularly relative to plane of cut; e.g., miter
468.4 ...With traversing cutter guide; e.g., cut-off saw
468.5 ..Collapsible
468.6 ..Retractable
468.7 ..Adjustable
468.8 ...Having curved cutting edge to make arcuate cut, plural nonaligned intersecting cutting edges, or spaced punches
468.9 ....Spaced edges
468.93 ..Having curved cutting edge to make arcuate cut, plural nonaligned intersecting cutting edges, or spaced punches
468.94 ...Spaced edges
469 ROTATABLE-DISC TOOL PAIR OR TOOL AND CARRIER
471 .With means to support work relative to tool(s)
471.1 ..Plural tool elements successively actuated at same station
471.2 ..Tool moved relative to work-support during cutting
471.3 ...Tool angularly adjustable relative to work-support
472 ..Supporting surface and tool axis angularly related
473 ...Adjustable angular relationship
474 ..Unidirectionally movable work support
475 ...With opposed work-presser
476 ....Presser co-axial with tool
477 ..Support and tool relatively adjustable
477.1 ...By movement of the tool
477.2 ..Work-support includes passageway for tool (e.g., slotted-table)
478 .With guard for tool
479 .Optional tool pairs alternatively operative
480 ..One element of tool pairs common to all pairs
481 .With means to permit replacement of tool
482 .Means to separate elements of tool pair
483 .Carrier for rotatable tool movable during cutting
484 ..Unicyclic movement
485 ..Tool carrier reciprocable rectilinearly
486 ...With means to adjust path of reciprocation
486.1 ....Angular relative to previous path
487 ...With means to reciprocate carrier
488 ....And means to rotate tool
489 ...With means to rotate tool
490 ..Tool carrier oscillated or rotated
491 .Means to rotate or oscillate tool
492 ..Including means to rotate both elements of tool pair
493 ...Including means to rotate both elements at different speeds
494 ...And means to change speed of rotation
495 .Tool pair comprises rotatable tools
496 ..Tool pair elements angularly related
497 ...Elements of tool pair angularly adjustable relative to each other
498 ..Tool pair axially shiftable
499 ...With shifting mechanism for at least one element of tool pair
500 ..Tool pair comprises contacting overlapped discs
501 ...With means to effect axial pressure on pair
502 ....With means to change axial pressure
503 ...With means to change overlap of discs
504 ..Tool element axially shiftable
505 ..Tool pair comprises disc and cylindrical anvil
506 ...With adjustable means to urge tool elements together
507 ..Elements of tool pair adjustably spaced
508 .Tool pair comprises rotatable tool and non-rotatable tool
508.1 .Tool element selectively operative
508.2 .Tool element mounted for adjustment
508.3 ..Plural, axially-spaced tool elements
509 TOOL PAIR COMPRISES ROTATABLE ANVIL AND FIXED-TYPE TOOL
510 .Anvil has motion in addition to rotation (i.e., traveling anvil)
511 ..Additional motion is along fixed arcuate path
512 ..With plural anvils

513 TWO TOOL PAIRS, DRIVER FOR ONE PAIR MOVES RELATIVE TO DRIVER FOR OTHER PAIR
514 .One tool support acts as driver for other
515 ..Punch and shear
516 .With variable spacing between tool pairs
517 ..With intermediate work support
518 .Punch and shear
519 .Successively acting
520 WITH ILLUMINATING OR VIEWING MEANS FOR WORK
521 .Mirror or lens
522.11 WITH SIGNAL, SCALE OR INDICATOR
522.12 .Signal; e.g., alarm
522.13 .Indicator comprising work or product
522.14 .Responsive to force
522.15 .Indicates tool position
522.16 ..Relative to another element
522.17 ...To work engaging member
522.18 ....Calibrated scale or indicator
522.19 .....Indicates dimension of work being cut
522.21 ......Dynamic indicator
522.22 ...To another tool assembly
522.23 ...To cooperating tool
522.24 ...To another component of tool assembly
522.25 ...Adjustable guide for traversing tool; e.g., radial saw guide or miter saw guide
522.26 .Indicates work characteristic
522.27 .Indicates wear
522.28 .Bubble level
522.29 .Counter
523 MEANS TO DRIVE OR TO GUIDE TOOL
524 .Unicyclic
525 ..With adjustable stopping point or tool
526 ..With brake or blocking means
527 .Means to change datum plane of tool- or tool-presser-stroke
528 ..For disabling of continuously actuated cutter
529 ..With adjustable stop
530 ..By varying length of tool stroke
531 .Clicker die press
532 ..With die handling attachment
533 ..With reciprocating presser
534 ...Laterally movable to selective operative positions
535 ....Pivotal or revolving only
536 .....With means to impart, limit, or control pivotal motion of presser
537 ......Interrelated with presser reciprocating means
538 .....With means to mount presser for oscillation about column
539 ...With adjustable bed block
540 ...Including presser member reinforcing, or flexure compensating, means
541 ...With manually actuated control apparatus for reciprocation of presser member
542 .By deforming resilient tool or tool support
543 .With transmission yieldable on overload
544 .With guard means
545 ..Static
546 ...Adjustable
547 .With movable tool-protecting work-backing strip
548 .Single tool with plural selective driving means
549 .Plural tools selectively engageable with single drive
550 ..Predetermined sequence of selection
551 ...Of paired tools
552 ..Turret of tools
553 .Tool movable to cooperate selectively with one of a plurality of mating tools
554 .With means providing for plural steps in tool stroke
555 .Sequential cutting motions
556 .With tool positioning means synchronized with cutting stroke
557 ..Anvil moves into and out of operative position
558 ..Straight line positioning
559 .Tool pair positionable as a unit
560 ..Straight line positioning
561 .Tool and anvil relatively positionable
562 ..Straight line
563 .Tool displaceable to inactive position (e.g., for work loading)
564 ..By pivotal motion
565 .With templet-surface-following tool
566 .Tool moves work to and against cooperating tool
567 ..With means to clamp or bind work to moving tool
568 ..One tool resiliently mounted or biased
569 ..Work forced through tool aperture or between spaced cooperating tools
570 ..Manually actuated work-moving tool
571 .With means to connect or disconnect tool and its drive
572 ..Continuously moving drive means (e.g., "gag")
573 ...Hand actuated connecting means
574 .Convertible from tool path to another or from implement to machine
575 .Magnet- or solenoid-actuated tool
576 ..Tool movement modifies actuating circuit
577 ..Solenoid core is tool or tool support
578 .Cutting tool operative in opposite directions of travel
579 .Motion direction of tool influenced by resistance of work
580 .One tool edge of tool pair encompasses work (e.g., wire cutter)
581 .Bevel or miter cut
581.1 .With tool tensioning means
582 .Constantly urged tool or tool support (e.g., spring-biased)
583 ..Ledger blade
584 ..Oscillating tool urged axially
585 ...And urged about pivotal axis
586 ..Stored energy furnishes cutting force
587 ...With reset
588 ..Through return (non-cutting) stroke
589 ...Oscillating tool
590 .Tool return mechanism separate from tool advance mechanism
591 .With simple revolving motion only
592 ..Tool mounted on radial face of rotor
593 ..Variable speed during one revolution (e.g., intermittent)
594 ..Revolving tool moves through recess in work holder or cooperating tool
595 ...Progressively cutting
596 ..Progressively cutting
597 .With simple oscillating motion only
598 ..Plural tool pairs
599 ...Plural tools on single oscillating arm (i.e., tool holder)
600 ..And means to move cooperating cutter member
601 ..Tool driver movable relative to tool support
602 ...Cam or eccentric revolving about fixed axis
603 ...Gear or ratchet pawl drives toothed tool support

	MEANS TO DRIVE OR TO GUIDE TOOL
	.With simple oscillating motion only
	..Tool driver movable relative to tool support
604	...Toggle links, one link pivoted to tool support
605	...Fixed axis lever
606	....Adjustable mechanical advantage
607	..Cutting edge in radial plane
608	...Adjustable
609	...With guide means for the cutting member
610	..Axially entending cutting edge
611	...Axially progressing cut
612	...Adjustable
613	.With simple rectilinear reciprocating motion only
614	..Edge-to-edge of sheet or web (e.g., traveling cutter)
615	..With provision for dynamic balance
616	..With lost motion in tool drive
617	..Means to vary force on, or speed of, tool during stroke
618	..Plural tools with same drive means
619	...Tools positioned by template
620	...Plural distinct cutting edges on same support
621	....Concentrically mounted
622	....Successively acting
623	..And means to move cooperating cutting member
624	..With application of force to opposite ends of tool-supporting crosshead
625	...By relatively movable fixed axis levers
626	...By connecting rod articulated with tool support
627	..Tool driver movable relative to tool support
628	...Cam or eccentric revolving about fixed axis
629	...Gear actuated tool support
630	...Toggle links, one link pivoted to tool support
631	...Screw actuated tool support
632	...Connecting rod articulated with tool support
633	...Fixed axis lever
634	....Adjustable mechanical advantage
635	...Including details of guide for tool or tool support
636	..Progressively cutting
637	..With spaced guide pins (e.g., die set leader pins)
638	..With inclined guides
639.1	..Fluid pressure actuated
639.2	...Utilizing fluid amplifier
639.3	...Diaphram
639.4	...Explosive fluid
639.5	...Plural cylinders
639.7	...Offset cutter
640	..With means to adjust tool position on tool holder
641	...Adjustably mounted cooperating tool
642	.Parallel draw-cut (e.g., translatory)
643	..Link suspension
644	.Straight line motion combined with tilting in plane of stroke
646	.Uniplanar compound motion
647	..Reciprocating plus work approach (e.g., saw type)
647.5	..With gyratory drive
821	.Guide
823	..With non-rigidly positioned member
824	..With anti-friction means
825	...Roller with peripheral flange or groove
826	...Disc
827	..With means to vary space between opposed members
828	...By rectilinear movement of member
829	..With means to adjust position
648	TOOL WITH EITHER WORK HOLDER OR MEANS TO HOLD WORK SUPPLY
649	.Rotatable wound package supply
650	..Plural supply sources
830	CUTTER ASSEMBLAGE OR CUTTER ELEMENT THEREFOR (E.G., CHAIN SAW CHAIN)
831	.With means permitting removal of cutter element
832	.Having diverse cutting elements
833	..And non-cutting depth gauge
834	.Having non-cutting depth gauge
651	TOOL OR TOOL WITH SUPPORT
651.1	.Wire tool
652	.Work supported tool (e.g., clicker die)
653	..With product ejection facilitator
654	..With tool manipulating portion
655	..With tool positioning abutment
656	..To sever article from work and cut within article
657	..With tool contour adjusting means
658	.Anvil
659	..Rotatable type
660	.Pointed perforators
661	.Endless band or belt type
835	.Toothed blade or tooth therefor
836	..With means to vary tooth position
837	..With additional cutting means
838	..Plural separable sections
839	...Tooth separable from blade
840	....By independent connecting element
841	.....Transversely movable
842	.....Arcuately movable
843	......With additional element to prevent movement of connecting element
844	.....Rectilinearly movable
845	....By deformation
846	..Uniformly varying teeth or tooth spacing
847	..Undulating tooth arrangement
848	..Plural tooth groups
849	...Including raker-tooth group
850	...Including intermediate raker-tooth
851	..Series of dissimilar teeth
852	..Series of allochiral teeth
853	..Teeth having transversely curved cutting edge
854	..Teeth having cutting edge parallel to blade surface
855	..Teeth having cutting edge perpendicular to blade surface
662	.Tool mounted by and between spaced arms
663	.Rotatable type
664	..With spacer interposed between shaft-mounted tools
665	..Mounting of tool about rod-type shaft
666	...At end of shaft
667	..Punching plus non-punching tool
668	..Notching plus non-notching tool
669	..Punching tool
670	...Shear type
671	..Notching tool
672	..Helical tool
673	..Shear type
674	...Cutting edge wholly parallel to axis of rotation
675	...Cutting edge wholly normal to axis of rotation
676	..Disc type
677	..Radially adjustable tool
678	..Spaced cut forming tool
679	.Cutting couple type
680	..Spiral type cutter
681	..To punch, and cut punched article
682	..Punching plus non-punching tool

	TOOL OR TOOL WITH SUPPORT
	.Cutting couple type
683	..Notching plus non-notching tool
684	..Punching tool
685	...Tool pair
686	...Shear-type male tool
687	....Multiple punchings
688	....Plural spaced successively operative shearing portions
689	....Progressive cutting
690	...Shear-type female tool
691	...Multiple punchings
692	..Notching tool
693	...Shear type
694	..Shear type
695	..Spaced cut forming tool
696	..With tool contour adjusting means
697	.Reciprocable type
698	.Joints and connections
699	..Adjustable
700	...Rectilinearly
856	.Stationary cutter
857	..Non-parallel cutting edges
858	..Parallel cutting edges
859	MACHINE FRAME
860	.Guard
701	MISCELLANEOUS

CROSS-REFERENCE ART COLLECTIONS

901	APPAREL COLLAR MAKING
902	ATTACHMENTS FOR OTHER TYPES OF MACHINE
903	BATTERY GRID TRIMMING
904	BOOK INDEX CUTTING
905	BUTTONHOLE MAKING
906	CHIP MAKING
907	COILED WIRE CUTTING
908	COMB, RAKE, OR OTHER TOOTHED ARTICLE MAKING
909	CUTTING STRAND EXTENDING FROM OR LYING ON STRAND OR PACKAGE SUPPORT
910	EMBROIDERY TRIMMING OR CUTTING
911	ENVELOPE BLANK FORMING
912	ENVELOPE OPENERS
913	FILAMENT-TO-STAPLE-FIBER CUTTING
914	FLASH TRIMMING
915	FUR CUTTING
915.3	ICE CUTTING MACHINES
915.5	MICROTOME
916	NIBBLING
917	NOTCHING
918	PINKING
919	SAMPLE TAKING
920	SHINGLE MAKING
921	SLIDE FASTENER CUTTING
922	TACKY WEB CUTTING
923	WASTE PRODUCT CUTTING
924	WORK WRAPPED OR COATED AROUND A CORE (NOT PART OF THE MACHINE)
927	PRINTER'S RULE CUTTING
928	VEHICLE-MOUNTED TOOL
929	PARTICULAR NATURE OF WORK OR PRODUCT
930	.Radioactive
931	.Tobacco
932	.Edible
933	.Book, being destroyed, e.g., cover being cut away
934	.Book, being made; e.g., trimming a signature
935	.Endless band
936	.Cloth or leather
937	..From continuous or wound supply
938	..Moving cloth or leather
939	..With work support
940	...Cutter moves along bar, bar moves perpendicularly
941	....Work support comprising penetratable bed
942	.Contact pin of electrical component
943	.Pallet
944	.Syringe needle
945	.Separating connected articles
946	.Container
947	.Insulation about wire
948	.Having "memory"; e.g., photographic or magnetic film
949	.Continuous or wound supply
950	..Strand-like
951	.Rubber tire
952	.Moving work
953	.With work support
954	KNIFE CHANGING
955	CUTTER EDGE SHIFTABLE TO PRESENT DIFFERENT PORTION OF EDGE

DIGESTS

DIG 1	Safety devices
DIG 2	I-shaped beam cutter
DIG 3	Inflatable tube

1	INSTRUMENTS
600	.ELECTRICAL MUSICAL TONE GENERATION
601	..Data storage
602	...Digital memory circuit (e.g., RAM, ROM, etc.)
603	....Sampling (e.g., with A/D conversion)
604	....Waveform memory
605	.....Read out at different rates
606	.....Read out at fixed rate
607	.....Recursive algorithm
608	....Fourier coefficient memory
609	....Note sequence
610	.....Accompaniment
611	......Rhythm
612	.......Tempo control
613	......Chords
614	......Reiteration
615	....Selecting circuits
616	.....Fundamental tone detection or extraction
617	.....Multiplexing or scanning
618	.....Priority or preference circuits
619	.....Transposition
620	.....Stops
621	....Noise reduction (e.g., error prevention)
622	....Tone synthesis or timbre control
623	.....Time varying or dynamic fourier components
624	.....Modulation
625	.....Mixing
626	....Expression or special effects (e.g., force or velocity responsive, etc.)
627	.....Envelope shaping (i.e., attack, decay, sustain, or release)
628	.....Portamento or glissando
629	.....Vibrato or tremolo
630	.....Reverberation
631	.....Chorus, ensemble, or celeste
632	.....Chiff or percussive transients
633	.....Loudness control
634	....Accompaniment
635	.....Rhythm
636	......Tempo control
637	.....Chords
638	.....Arpeggio
639	...Photoelectric
640	....Variable speed
641	...Magnetic
642	....Tape
643	...Capacitive
644	...Constructional details
645	...MIDI (musical instrument digital interface)
646	..Fret control
647	..Digital combinational circuit
648	...With frequency multiplication or division
649	...Note sequence
650	....Accompaniment (e.g., chords, etc.)
651	.....Rhythm
652	......Tempo control
653	...Selecting circuits
654	....Fundamental tone detection or extraction
655	....Multiplexing or scanning
656	....Priority or preference circuits
657	....Transposition
658	....Force or velcoity responsive
659	...Tone synthesis or timbre control
660	....Mixing
661	....Filtering
662	...Expression or special effects
663	....Envelope shaping (i.e., attack, decay, sustain, or release)
664	....Chorus, ensemble, or celeste
665	....Loudness control
666	...Accompaniment
667	....Rhythm
668	.....Tempo control
669	....Chords
670	...Constructional details
671	..Electric analog oscillators
672	...Variable frequency
673	....With Variable filtering
674	....With space discharging means
675	...With frequency multiplication or division
676	....With transistor
677	....With space discharging means
678	...Selecting circuits
679	....With transistor
680	....With space discharging means
681	....Fundamental tone detection or extraction
682	....Multiplexing or scanning
683	....Noise reduction (e.g., error prevention)
684	....Priority or preference circuits
685	....Transposition
686	....Stops
687	....Force or velocity responsive
688	.....With magnetic selector
689	.....With capacitive selector
690	.....With variable resistance selector
691	...Noise reduction (e.g., error prevention)
692	...Tone synthesis or timbre control
693	....Time varying or dynamic fourier components
694	....Modulation
695	.....Amplitude
696	.....Angle (i.e., frequency or phase)
697	....Mixing
698	.....Partials (i.e., harmonics)
699	....Filtering
700	.....Variable
701	...Expression or special effects
702	....Envelope shaping (e.g., attack, decay, sustain, or release)
703	.....Attack and decay
704	....Portamento or glissando
705	....Tremolo
706	....Vibrato
707	....Reverberation
708	....Chorus, ensemble, or celeste
709	....Trill
710	....Chiff or percussive transients
711	....Loudness control
712	...Accompaniment
713	....Rhythm
714	.....Tempo control
715	....Chords
716	....Arpeggio
717	....Reiteration
718	...Constructional details
719	....Keyboard
720	....Keyswitch structure
721	....Foot control
722	...Fret control
723	..Transducers
724	...Photoelectric
725	...Electromagnetic
726	....String
727	.....With adjustable means
728	.....Noise reduction (e.g., error prevention)
729	....Reed
730	...Piezoelectric
731	....String
732	....Reed
733	...Capacitive
734	...Strain gauge
735	...Tone synthesis or timbre control
736	....Filtering

	INSTRUMENTS
	.ELECTRICAL MUSICAL TONE GENERATION
	..Transducers
737	...Expression or special effects
738	....Envelope shaping (e.g., attack, decay, sustain, or release, etc.)
739	....Tremolo
740	....Vibrato
741	....Loudness control
742	...Selecting circuits
743	...Constructional details
744	....Keyboard
745	....Keyswitch structure
746	....Foot control
	.Automatic
2	..Combined
3	..Electric
4	...With phonograph
5	....Electrical connections
6	....Pneumatic
7	..Stringed
8	...With picking devices
9	....Electric
10	...With bowing devices
11	....Electric
12	...With striking devices
13	...Pianos
14	....Without keys
15	.....Half width
16	....Constant power
17	.....Electric control
18	......Key actuators
19	....Electric power
20	.....Key actuators
21	......With expression
22	.......By voltage change
23	.....With expression
24	....Pneumatic type
25	.....Key actuators
26	.....Grands
27	......Connections to piano action
28	.....Action above keyboard
29	.....Action below keyboard
30	.....Location of parts
31	.....With double tracker
32	......Double length
33	.....Expression mechanism
34	......Parts of piano moved
35	.......Rest rail shifted
36	........Normally in short stroke position
37	........Position controlled from reservoir
38	........Graduated shift
39	......Wind pressure varied
40	.......By pumping
41	.......By throttling
42	.......By regulating chamber
43	.......By use of two pressures
44	......Two cooperating pneumatics to each note
45	......Two opposing pneumatics to each note
46	......Transmission varied
47	......Systematic variations
48	......Pneumatic details
49	......Hand controllers
50	.....Pneumatic construction
51	......Both primaries and secondaries
52	.......Lower leaf moved
53	......Lower leaf moved
54	......Striker pneumatics in wind chest
55	......Units
56	.......Metal
57	......Tubes and junctions
58	......Bleeds
59	.......With valve
60	......Valves and seats
61	.......Inside
62	.......Outside
63	........Adjustable
64	......Screening and cleaning
65	.....Power pneumatics
66	......Connections to hammers
67	.......To key
68	.......To abstract
69	.......To wippen
70	.....Wind-supply devices
71	......In grands
72	......Pedals
73	.......Folding
74	.......With keylock
75	.......With doors
76	........Operating together
77	.........Door-carried pedal
78	.........Upper panel moved
79	......Distribution
	....Cases
80	.....Key slips
81	.....Upper panel
82	.....Lower panel
83	..Wind
84	...Organs
85	....Stop actions
86	....Cylinder
87	....Disk
88	....Electropneumatic action
89	....Pneumatic action
90	.....With keys
91	.....Pipe organ
92	...Organettes
93	...Mouth blown
94.1	..Combs
94.2	...Combined
95.1	...Cylinder type
95.2	....Combined
96	....Cylinder construction
97	...Disk type
98	....With star wheels
99	....Multiple disks
100	....With phonograph spindle
101	...Note-sheet type
102	..Bars
103	..Bells
104	..Drums
105	..Outside players
106	...Cylinder or disk
107	...Electric or electropneumatic
108	...Cabinet type
109	....Case connectors
110	....Pneumatic
111	...Striker details
112	...Constant power
113	....Electric control
114	....Pneumatic control
115	..Selectors
116	...Tracker-box location
117	...Mechanical fingers
118	...Plurality of sheets
119	....Synchronized
120	....Single tracker
121	...Sheet not rolled
122	...Winding and rewinding
123	....With electric features
124	....For two types of rolls
125	....Shifting gear and clutch
126	....Two clutches
127	....Gears
128	....Speed control
129	.....Roller and disk or cone
130	.....By wind supply
131	.....Compensation for diameter
132	....Feeding
133	....Rewinding
134	....Brakes
135	....Sheet pressers

	INSTRUMENTS
	.Automatic
	..Selectors
	...Winding and rewinding
136	....Registration
137	.....Movable detector at edge
138	......Controlling shifter bellows
139	.......Single detector
140	....Extra end holes
141	.....Single end hole
142	....Extra center holes
143	....Flange shifted
144	....Hand operated
145	....Transposition only
146	...Trackers and sheets
147	....Electric
148	....For organs
149	....Vertical
150	....Playing on wind and rewind
151	...Trackers
152	....Double scale
153	.....Trackers rigidly connected
154	......Pivotally mounted
155	......With slide valves
156	....Duct closers
157	....Modified for expression
158	....Metal
159	....Extensible
160	....Pneumato-electric
161	...Note sheets
162	....Ends and joints
163	....Overlapping holes
164	....With expression and tempo marks
165	....With marks for voice
166	....With projections
167	..Key locks
168	..Couplers
169	..Indicators
170	.Combined
171	..Electric
172	..Piano and organ
173	.Stringed
174	..Pianos
175	...Duplex
176	...Separable
177	...Cases
178	....Fall boards and desks
179	....Fall boards
180	....Music desks or racks
181	....Music receptacles
182	....Swells
183	....Protectors
184	...Frames, string plate and sounding boards
185	...Frames and string plates
186.1	...Frames
186.2	....Wrest planks
187	...String plates and sounding boards
188	...String plates
189	...Resonance devices
190	....Supports or platforms
191	....Insulators
192	....Sounding boards
193	.....Materials
194	.....Multiple
195	.....Ribbing
196	.....Crowning devices
197	...Stringing
198	....Auxiliary strings
199	...Strings
200	...Tuning devices
201	....Simple pin
202	....Locking devices
203	.....Involving two pins
204	....Worm gear
205	....Direct pull
206	....With push piece
207	....With lever

208	....Transverse pressure
209	...Bridges
210	....Inverted
211	....Agraffes
212	....On sounding board
213	.....With string holders
214	....String clamps or holders
215	....Depressing bars
216	...Expression devices
217	....Dampers lifted
218	....Dampers held
219	....Pianissimo devices
220	.....Curtain type
221	.....Hammer stroke shortened
222	......Lost-motion preventers
223	.......In grand actions
224	....Auxiliary strikers
225	....Pedal mechanism
226	.....Locks
227	.....Spring fulcrum
228	.....Bearings
229	.....Pedals
230	......Auxiliary
231	.......Pedal carried
232	.......With footrest
233	.....Mouse guards
234	...Harmonic dampers
235	...Couplers
236	...Hammers actions
237	....Horizontal
238	.....Down striking
239	.....Grand
240	....Upright
241	.....Jack serving as retractor
242	.....Standard type
243	....Details
244	.....Power-operated hammers
245	......Sostenuto
246	......Electric striker
247	.....Jack constantly controlled
248	.....Inverted jack
249	.....Jointed jack
250	.....Action frames
251	.....Flanges and joints
252	......Continuous
253	.....Checks
254	.....Hammer heads
255	......Damper heads and stems
256	...Bowed or violin pianos
257	....With belt bow
258	...Plectrum
263	..Combined
264	..Harps
265	...Bodies
266	...Erard action
267	..Guitars
268	..Mandolins
269	..Banjos
270	...Resonance devices
271	....Closed back
272	....Two rings
273	....Mutes
274	..Violins
275	...Bodies
276	....Bass bars
277	....Sound posts
278	...Combined chin rest and support
279	...Chin rests
280	...Supports
281	...Positioning devices
282	...Bows
283	...Bow guides
284	..Dulcimers
285	..Zithers
286	...Chord selectors
287	....Damper-bar type
288	.....Dampers independent
289	....Guard-plate type

		INSTRUMENTS
		.Stringed
290		..Details
291		...Bodies
292		....Metal
293		...Necks
294		...Resonance devices
295		....Auxiliary strings
296		....With diaphragm
297	R	...Strings and fastenings
297	S	.....Strings
298		....Guitar bridges
299		....Guitar bridges with tailpieces
300		....Banjo tailpieces
301		....Mandolin tailpieces
302		....Violin tailpieces
303		....Spools
304		....Tuning pegs
305		.....Friction increasers
306		....Worm gear
307		...Bridges
308		....Banjo
309		....Violin
310		....Violin mutes
311		.....Attached
312	R	...Tunings
312	P	.....Pedal operated steel guitars
313		...Tremolo devices
314	R	...Finger boards and frets
314	N	.....Nuts
315		...Fingering devices
316		....For semitone
317		....For chords
318		.....Capo tastos
319		....Stopping fingers or blocks
320		...Picking devices
321		....Picks on reciprocating carriage
322		....Hand or finger picks
323		...Hammer mechanism
324		....Spring-shank hammer
325		...Bowing mechanism
326		....With keyboard
327		...Instrument supports
328		...Arm, hand, or finger rests
329		...Article holders
330		.Wind
331		..Pipe organs
332		...Actions
333		....Stop chambers
334		....Single chamber
335		....Pneumatic details
336		.....Membrane valve
337		....Electric
338		....Electropneumatic
339		.....Details
		....Couplers
340		.....Pneumatic
341		.....Electric
342		....Key valves
343		....Stop actions
344		.....Combination
345		......Adjustable
346		...Swells
347		....Electropneumatic
348		...Valve tremolos
349		...Pipes
350		....Reed
351		..Reed organs
352		...Cases
353		....Pedals
354		...Folding
355		...Wind-supply devices
356		....Pressure and exhaust
357		....Pedals
358		.....Auxiliary
359		....Distribution
360		...Reed boards
361		....With qualifying tubes
362		....With resonance chamber
363		...Reeds
364		....With tuning means
365		...Key actions
366		....Pedal
367		....Pneumatic
368		....Pallets
369		...Stop actions
370		....Combination
371		....Celeste
372		...Swells
373		...Couplers
374		...Fan tremolos
375		..Minor reed
376	R	...Accordions
376	A	.....Attachments, supports and locks
376	EA	.....Electronically amplified
376	K	.....Keys and keyboards
376	SM	.....Shift mechanisms
377		...Harmonicas
378		....With resonance chambers
379		....Supports
380	R	..Wood winds
380	A	....Double reed
380	B	....Bagpipes
380	C	....Edge tone
381		...Duplex
382		...Clarinets
383	R	....Mouthpieces
383	A	......Reeds
384		...Flutes
385	R	...Saxophones
385	A	.....Woodwind supports
385	P	.....Pads
386		...Pitch-changing devices
387	R	..Brasses
387	A	....Supports
388		...Valve type
389		....With four valves
390		....Rotary movement
391		....Helical or sliding movement
392		....Piston details
393		....With substitute tubes
394		....Tuning devices
395		...Trombones
396		....Tuning devices
397		...Drainage
398		...Mouthpieces
399		....Adjustable
400		...Mutes
401		...Tremolos
402		.Rigid vibrators
403		..Bars and supports
404		...With strikers
405		...With electric action
406		..Bells
407		...With electric action
408		..Tongues
409		..Forks
410		..Resonators
411	R	.Drums
411	A	...Unitension
411	M	...Mutes
411	P	...Practice Pads
412		..Collapsible
413		..Cord tighteners
414		..Head material
415		..Snares
416		...Material
417		...Inside
418		..Tambourines
419		..Tympani
420		..Toy
421		..Supports
422.1		.Drum and cymbal beaters
422.2		..Combined
422.3		..Hi-hat
422.4		..Drumsticks

	INSTRUMENTS
	.General features
423 R	..Keyboards
423 A	....Uniform
423 B	....Button type
424	...Plurality of manuals
425	...Auxiliary
426	....Pedal
427	...Plurality of touch plates
428	....Whole-tone scale
429	...Curved front
430	...Key bottoms
431	....Folding
432	...Key frames adjustable
433	...Keys
434	....Fulcrums and guides
435	....Fulcrums
436	....Guides
437	....Plating
438	...Manufacturing processes
439	...Touch regulators
440	....Resistance
441	...Key holders
442	..Key selectors
443	..Chord players
444	...Pedal operated
445	..Transposers
446	...Auxiliary keyboard
447	...Keyboard shifted
448	...Intermediate parts shifted
449	...Sounders shifted
450	..Solo attachments
451	..Special or enharmonic scales
452 R	..Materials
452 P	....Plastic material
453	ACCESSORIES
454	.Tuning devices
455	..Strings
456	..Pipes and reeds
457	..Forks
458	..Tools and machines
459	...Tuning hammers
460	...Felt pickers
461	.Recording devices
462	..Electric
463	..Applying expression lines
464 R	.Producing color or light effects
464 A	...Lights in Instrument
465	.Exercising devices
466	..For singers
467	..For pianists
468	...Attached to performer
469	...Armrest rail
470 R	.Teaching devices
470 P	...Phonograph recorders
471 R	..Charts or boards
471 SR	....Slide rules
472	...Easel type
473	...With transposing slide
474	...With transposing dial
475	...For transcribing
476	..Blocks
477 R	..Indicators
477 B	....Twirling and conducting batons
478	...For keyboard
479 R	....Single position
479 A	......On keyboard
480	.....With transposing slide
481	.....Plurality of cards
482	....Shiftable
483.1	...Tune Sheets
483.2	....Notation Systems
484	...For tempo
485 R	...For fingering
485 SR	.....Slide rules
486	.Leaf turners
487	..Motor operated
488	..Gravity operated
489	..Hand and spring operated arms
	..Spring-operated arms
490	...Plurality of latches
491	....Fixed latches
492	....Plurality of releasers
493	.....Latches and releasers pivoted
494	......Integral
495	...Single latch
496	....Fixed latch
497	....Sliding latch
498	....Escapement
499	.....Air operated
500	..Single spring arm
501	...Latch and releaser integral
502	..Player-operated arms
503	...Plurality of actuators
504	....Plurality of finger pieces
505	.....Actuators pivoted
506	.....Actuators and finger pieces integral
507	....Single finger piece
	...Single actuator
508	....Progressive action
509	.....Arms and actuator on different axes
510	......With segmental gear
511	....Sliding actuator
512	.....With segmental rack
513	....Repeating action
514	.....Arms and actuator on different axes
515	.....Sliding actuator
516	..Single arm
517	..Single transfer bar
518	...With buckling devices
519	...With suction devices
520	...Leaves prepared
521	....With magnetic disks
	••••••••••••••••••••••••••••••••
	DIGESTS
	••••••••••••••••••••••••••••••••
DIG 1	Plural speakers
DIG 2	Preference networks
DIG 3	Foldable; detachable; collapsible
DIG 4	Chorus; ensemble; celeste
DIG 5	Chiff
DIG 6	Cathode-ray tube
DIG 7	Electric key switch structure
DIG 8	Keyed oscillators
DIG 9	Filtering
DIG 10	Feedback
DIG 11	Frequency dividers
DIG 12	Side; rhythm and percussion devices
DIG 13	Gas discharge tube
DIG 14	Harmonicas
DIG 15	Accordions
DIG 16	Crescendo
DIG 17	Cabinets
DIG 18	Tuning
DIG 19	Light sensitive resistor
DIG 20	Monophonic
DIG 21	Mechanical resonator
DIG 22	Chord organs
DIG 23	Electronic gates for tones
DIG 24	Piezoelectrical transducers
DIG 25	Pedal clavier
DIG 26	Reverberation
DIG 27	Stereo
DIG 28	Service manuals
DIG 29	Tape
DIG 30	Fret control

CLASS 86 AMMUNITION AND EXPLOSIVE-CHARGE MAKING

	AMMUNITION MAKING
10	.Caps and cartridges
11	..Paper shells
12	...Assembling
17	..Shell lining and varnishing
19	.Lubricating
20.1	LOADING FIREWORKS AND BURSTING CHARGES
20.11	.Filling and ramming fireworks
20.12	.By casting
20.13	.By vibratory packing
20.14	.Placing bursting charge in projectile
20.15	.Placing, tampimg or priming charge in blast hole
21	.Implements
22	..Fuse
23	AMMUNITION LOADING
25	.Loading and shell closing
26	..Rectilinear shell feed
27	..Rotary shell feed
28	..Implements
29	.Filling and ramming
30	..Rammers
31	.Filling
32	..Cap and cartridge priming
33	..Implements
36	.Capping and uncapping
37	..Implements
38	...Magazine
39	.Crimping
40	..Implements
41	..Crimper heads
42	.Bullet patching
43	.Bullet setting
44	.Shell holders
24	.Implements
45	FEEDING DEVICES
46	.Shell
47	CARTRIDGE PACKING
48	.Belt loading
1.1	MISCELLANEOUS
49	AMMUNITION SHELL UNLOADING
50	BOMB DISPOSAL

CLASS 87 TEXTILES, BRAIDING, NETTING AND LACE MAKING

PROCESSES AND PRODUCTS
1 .Coated or impregnated
2 .Elastic
3 .Intertwisted strands
4 ..Twist or bobbinet lace
5 .With material incorporated in diverse ways
6 ..Tubular fabric with core
7 ..Braided with unbraided material
8 .Braided
9 ..Tubular
10 ..Lace
11 ..Variable form
12 ..Knotted mesh
13 .Miscellaneous
APPARATUS
14 .With pattern mechanism
15 ..With electric or fluid operated means
16 ..For braiding apparatus with movable switch for carrier
17 ..For braiding apparatus of arrestable carrier type
18 .With stopping or starting
19 ..Electrical
20 .With automatic control
21 ..Let offs
22 ...Ratchet type
23 .With coating or impregnating
24 .Intertwisted strand type
25 ..Portable
26 ...With diverse material incorporating
27 ..Twist or bobbinet lace
28 .With diverse material incorporating
29 ..Tubular fabric with core
30 ..Braided with unbraided material
31 .With take up
32 .Combined
33 .Braiding
34 ..With mandrel or form
35 ..With die or shaper
36 ..With beater or strand layer
37 ..With movable switch for carrier
38 ...Carrier actuated
39 ..Arrestable carrier type
40 ...With clutch
41 ..With braid variation
42 ..Interlocking twist type
43 ..With reciprocating carrier
44 ..Concentric circular orbit type
45 ...Rack and gear carrier propellers
46 ...Intermittently retractible carrier propellers
47 ....Rotating
48 ...Strand deflecting devices
49 ..With strand anti-twist means
50 ..Carrier propelling and/or guiding means
51 ...Without race plate
52 .Tatting
53 .Knotted mesh fabric
54 .Shuttles, carriages and/or threading and loading or unloading devices
55 ..Braiding carriers
56 ...With strand tensioning means
57 ....Let offs
58 ..Tatting type
59 ...With rewinding means
60 ..Seine needles
61 .Strand tensioners
62 .Miscellaneous

1.12	GUN HEATERS
1.13	MINE-DESTROYING DEVICES
1.15	WELL PERFORATORS
1.16	ENGINE STARTERS
1.2	SMOKE OR RESIDUE EJECTOR
1.25	LUBRICANT INJECTOR
1.34	LINE THROWING
1.35	TRENCH MORTARS
1.3	MUZZLE LOADING
1.42	GUN HANDLES
1.51	BOMB, FLARE AND SIGNAL DROPPING
1.52	.Drop grenade
1.53	.Sway braces
1.54	.Bomb displaced from exterior of plane
1.55	.Arming device
1.56	.Electrical and radio releases and sighting
1.57	.Explosive releases
1.58	.Shackles
1.59	.Racks
1.6	.Timing devices
1.61	.Sighting
1.7	RECOILLESS GUN
1.701	.Having a reaction mass
1.702	..Barrel parts separable for loading
1.703	.Having pressure-control means
1.704	.Having breech closure
1.705	..Closure has firing device
1.706	..Cartridge-case closure
1.8	ROCKET LAUNCHING
1.801	.Having rocket-storage and transfer means
1.802	..Launcher movable relative to storage means
1.803	..Having magazine-gate means to feed and support rocket for launching
1.804	..Storage means movable to facilitate launching
1.805	.Having means to transfer rocket to launcher
1.806	.Having means restraining rocket from movement in launching direction
1.807	..Including rocket-firing means
1.808	..Rocket spin stabilized while restrained
1.809	.Underwater launching
1.81	..Rocket launched from container
1.811	.Having umbilical-separating means
1.812	.Having safety devices for preventing premature ignition or launching
1.813	.Having rocket-firing means
1.814	..Rocket propellant ignited by electrical means
1.815	.Movable launcher
1.816	.Having tubular guide means
1.817	..Including a forward closure
1.818	..Including an auxiliary rocket-launching charge
1.819	.Having guide means
5	SUBMARINE
125	AUTOMATIC
126	.Plural gun, barrel or bore
127	..Firing control
128	.Convertible gun operation (e.g., to nonautomatic)
129.01	.Regulation of speed or rate of automatic fire
129.02	..By regulating burst
130	..By regulating time of return of breech block
131	..By regulating time of release of hammer
132	.Firing device operation or control (e.g., full automatic)
133	..Synchronizers
134	..Disabled at predetermined angles of fire
135	..Electrical
136	..Triggers and/or remote control
137	..Interlocks between firing and cartridge feeding
138	...Locks bolt open
139	..Semi-automatic (e.g., double sear)
140	...Convertible to full automatic
141	....Breech block, barrel or hammer disconnected
142	....With selective safety device
143	...Alternate control of hammer and breech block or barrel
144	...With means for disconnecting trigger and sear
145	....By breech block or barrel motion
146	....Hammer disconnected
147	...Hammer cocked and released by trigger
148	..With selective safety device
149	..With automatic sear or sear release
150	..With automatic sear or trigger safety
151	..With automatic hammer
152	...Operates breech lock
153	..Operates breech lock
154	..With automatic hammer cocking and/or safety means
155	.Movable chamber type (e.g., revolver)
156	..Operating as gas piston and/or recoil member
157	..Recoiling barrel with revolving chambers
158	.Movable butt piece
159	.Combined movable barrel and gas operated
160	.Movable barrel (e.g., rotary)
161	..Forwardly movable
162	..Rearwardly movable
163	...Barrel having motion in addition to axial, rectilinear
164	...With breech lock latch
165	...Long recoil
166	....Nonrectilinear breech block motion
167	....Nonaxial rectilinear breech block motion
168	....Pivoted locking member or toggle lock
169	...With accelerator and/or unlocking lever for breech mechanism
170	...With barrel latch
171	...Nonrectilinear breech block motion (e.g., tilting rotary)
172	....Rotary and sliding
173	...Sliding locking member
174	...Rotary locking member
175	...Toggle locking member
176	...Pivoted locking member
177	..Barrel buffers and brakes
178	..Barrel return means
179	.Gas piston-type lock actuator carried by breech block (e.g., firing pin)
180	.Breech block lock (positive or impositive)
181	..With latch
182	..Inertia member released lock
183	...Blow back initiated
184	..Nonrectilinear breech block motion (e.g., tilting rotary)
185	...Rotary and sliding
186	..Nonaxial, rectilinear, breech block motion
187.01	..Sliding locking member
187.02	...Cylindrical or ball bearing
188	..Rotary locking member
189	..Toggle locking member
190	..Pivoted locking member
191.01	.Gas piston type
191.02	..Annular piston
192	..Gas piston compresses breech opening spring
193	..Gas ports and/or regulators

1	MISCELLANEOUS
1.5	NECKED RECEPTACLE SEAL CUTTERS
2	CARTON OPENERS
400	CAN OPENER
401	.With control means energized in response to activator stimulated by condition sensor
402	..Unicyclic reciprocating punch
403	..With stopping upon completion of cut
404	...Responsive to reaction force between can and cutter
405	..Responsive to can
406	.With sanitizer
407	.Including spout former
408	.With other cutlery means
409	.Adapted for right or left hand operation
410	.With lid retainer or lifter
411	.With can closure means
412	.Including plural independent cutters
413	..Progressive fulcrum
414	..Including punch
415	.Including plural sequentially operated cutters
416	.With driven roller to continuously engage bead and relatively rotate can and opener
417	..Side cut
418	...Cutter comprising driven disc
419	..With means enabling quick release of cutter
420	..Roller drive means causes initial piercing
421	...Including prime mover
422	...Cutter comprising rotatable disc
423	..Including prime mover
424	...Cutter comprising rotatable disc
425	....Driven disc
426	..Cutter comprising rotatable disc
427	...Driven disc
428	.Including shear couple
429	.Progressive fulcrum
430	..Side cut
431	..Cutter pivoted to reaction member
432	..With guide
433	.With means to relatively rotate can and opener
434	..Comprising means to rotate can
435	.Including sweep cutter
436	..With can support
437	..With can penetrating pivot
438	...Variable cutter radius
439	....Freely slidable cutter
440	.....Cutter comprising rotatable disc
441	....Cutter comprising rotatable disc
442	..With means to grip can
443	.Including punch
444	..With prime mover to drive cutter relative to can
445	..Peripheral punch
446	..Plural-spaced cutting edges
447	...With can support
448	..With can support
449	..Traversing punch
450	..And fulcrum
26	MANICURE
27	.Guarded edge
28	.Nippers
29	.Shears
29.5	HAIR CUTTERS FOR INSIDE NOSE OR EAR
30	HAIR PLANERS
31	.Convertible
32	RAZORS
34.05	.Combined
34.1	..With additional cutter means
34.2	..With means to raise the hair and/or stretch the skin
35	..With means to facilitate sharpening
36	...Permanently attached sharpener
37	...Means for holding or guiding sharpener
38	....Blade-shifting mechanism
39	.....Safety impulse
40	..With blade magazine
40.1	...Strip feed
40.2	...Detachable magazine
41	..With waste-collecting, razor-cleaning and/or dispensing
41.5	...With fluid-current disposal means
41.6	...Hair-collecting means
41.7	..With blade usage indicator
41.8	..With blade flexure indicator
41.9	.With cooperating nipping blades
43	.With cooperating shearing blades
43.1	..With razor-adjusting means
43.2	...Adjusting spacing between blades
43.3	..With compound movement of blade
43.4	..Rotary blade
43.5	...Rotary inner blade
43.6	....And stationary outer blade
43.7	..Oscillating blade
43.8	...Oscillating inner blade
43.9	....And stationary outer blade
43.91	..Reciprocating inner blade
43.92	...And stationary outer blade
42	.With blade-moving means
44	..Vibratory
45	...Electric
46	...Traction
47	.Knockdown and/or folding
48	.Inclined edge
49	.Curved edge
50	.Multiple blade
51	.Detachable blade, guarded cutting edge
52	..Tensioned blade edge
53	..Longitudinal or old style
54	...With relative blade and guard adjustment
55	...Separable guard
57	..Pivoted blade
58	..Pivoted cap
59	...Multiple guard
60	....With operator and relative blade and guard adjustment
60.5	.....Sectional cap
61	...With operator and relative blade and guard adjustment
62	..Slidable blade
63	...With relative blade and guard adjustment
64	...With blade lock
65	...Multiple guard
66	..Slidable lock
67	..Hook and lock
68	..Bolt-connected
69	...Threaded
70	....Multiple guard
71	.....With relative blade and guard adjustment
72	......Flexible blade
73	.......Spaced guard edge
74	..Magnetic
74.1	..Multiple guard
75	..Aligning means
76	..Corner construction
77	..Guards
78	...Blade-supported
79	....With relative blade and guard adjustment
80	.....Rail guard
81	...Edge structure
82	....Modified teeth
83	...Rail
84	..Caps
85	.Handles
86	..Receptacle

	RAZORS
	.Handles
87	..Pivoted
88	...Longitudinal
89	...Angularly adjustable handle and head
90	.Attachments and accessories
451	STATIC PENCIL SHARPENER
452	.Plural, sequentially engaged cutters
453	.With debris receiver
454	..Conical or cylindrical work guide
455	..Surface type cutter
456	.Work piece drawn over transverse, single edge cutter
457	.Having conical or cylindrical work guide
458	..And mounting base or handle
459	...With diverse feature
460	..Open-ended for point protection during writing
461	..Adjustable or resilient cutter structure
462	.Surface type cutter
475	POWERED PLANER
476	.With rolling supports (e.g., wheels, casters)
477	.Tool rotates about axis perpendicular to work
478	BENCH PLANE
479	.Core box former type
480	.Strip cutter
481	.With gauge or guide
482	.Having plane extension
483	.With lubricant dispenser
484	.To form configured or beveled surface
485	..Changable
486	..Recess forming
487	.Having means for adjusting cutting blade
488	..Pivoted lever and screw
489	..Screw
490	.Adjustable mouthpiece
491	.Handle or handle attaching means
492	.Cutting blade clamp
493	.Cutting blade
494	BILLIARD CUE TRIMMER
495	CYLINDRICAL TENON CUTTER
90.1	MEANS FOR CUTTING ELONGATE, STRAND-ENCIRCLING SHEATH
90.2	.Helically wound metal sheath
90.3	..Including rotary cutter
90.4	.Longitudinally
90.6	..With additional means for cutting sheath other than longitudinally
90.7	..Adjustable to also cut sheath other than longitudinally
90.8	..With cutter-opposing, sheath-engaging surface
90.9	...Roller surface
91.1	...Pivotally connected to cutter
91.2	.With cutter-opposing, sheath-engaging surface pivotally connected to cutter
92	PIPE AND ROD CUTTERS
92.5	.Adapted to cut pipe or rod longitudinally
93	.Rotary
94	..External
95	...Pipe- or rod-encircling
96	....With clamping means
97	.....Rotary power source
98	.....Ratchet
99	....Ratchet
100	....Chain link type
101	....Disc cutter
102	...Disc cutter
103	..Internal
104	...Eccentrically pivoted
105	...Slidably projected
106	....Wedge
107	.....Screw feed
108	...Pivoted lever mounted
109	CIGAR TIP CUTTERS
110	.Rotary power source
111	.Hand
112	..Pivoted blade
113	..Reciprocating blade
113.1	CORE-PIT REMOVERS
113.2	.Including pivoted tool-pair members
113.3	.Combined
114	SEGMENTERS
115	PLASTIC MATERIAL CUTTERS
116	.Wire
117	..Plural
118	BUTTONHOLE TYPE
119	.With punch
120	.Shears
120.1	SHELL OPENERS
120.2	.Nutcrackers
120.3	..Arcuately moved jaws
120.4	...Plural or relatively movable pivot
120.5	..Lever-actuated jaws
358	PERFORATING OR INDENTING IMPLEMENTS
359	.Combined with other type cutter
360	.With portion positioned in work aperture
361	.Work-mounted
362	.Hand-guided, motor-driven
363	.Pivoted handles
364	..Turret of tools
365	.Traveling roller
366	.Pointed
367	..With impact drive
368	..With stripper, sheath or gauge
121	TREE HACKS
121.5	CORN STRIPPERS
122	CONVERTIBLE
123	COMBINED CUTLERY OR COMBINED WITH ANCILLARY FEATURE
123.3	.With means to apply transient fluid to tool
123.4	..To chain saw chain or guide therefor
123.5	.With skin-removal means
123.6	..Including relatively movable parts
123.7	..Including a pointed blade
124	.With material-holder or disposal
125	..Handle receptacle
127	..Twine guide
128	..Ejectors or strippers
129	...Fork
130	...Annular cutter
131	..Shears
132	...Multiple shearing position
133	....Suction-disposal means
134	...Grip type
135	....Spring-opened
136	..Knives and scrapers
136.5	...With closure or portable receptacle support
137	..Forks
138	.With sharpening feature
139	..Rotary sharpener
140	.With heater
141	.Spoons with fluid conductors
142	.Cutlery
143	..Sheathed
144	..Saws
145	..Nippers and shears
146	..Shears and knives
147	..Knives, forks, and spoons
148	..Knives and forks
149	..Knives and spoons
150	..Forks and spoons
151	SHEATHED
152	.Plural blade
153	.Folding sheath
154	.Compound blade movement
155	.Pivoted blade

	SHEATHED
	.Pivoted blade
156	..Detachable blade type
157	...End tang connected
158	..With blade-opening means
159	...Spring-opened
160	...Locked blade
161	..Locked blade
162	.Sliding blade
163	..Gravity-opened
164	.Elements
164.5	ICE PICK OR CHIPPER TYPE
164.6	.With impact-moving means
164.7	.With guard and/or guide
164.8	.Plural points or edges
164.9	SCRATCHING IMPLEMENTS
164.95	.Having traction-rotated tool (e.g., glass cutters)
165	CUTTING TOOLS
166.3	.Saw
369	..Including contiguous oppositely moving blade portions
370	..With work-underlying guard means
371	..With work-engaging member
372	...Affixed to work
373	...Slidable guide plate parallel to saw blade
374	...Slidable guide plate intersected by saw blade
375	....Including relatively adjustable saw blade and guide plate
376	.....To vary angle between saw and guide plate
377	.....To vary projection of saw blade
378	...Including means to press work to saw blade
379	..On vehicle moved during cutting
379.5	..On vehicle, moved relative thereto during cutting
380	..Band
381	..Chain
382	...With guard means
383	...With guide bar for cutting span
384	....Including nondriving guide pulley
385	.....And means to adjust guide pulley relative to guide bar
386	....Including means to adjust guide bar relative to its support
387	....Multisectioned guide bar
388	..Rotary
389	...With peripheral drive means
390	...With guard means
391	....Movable to nonguarding position
392	..With means to reciprocate saw
393	...In uniplanar compound path
394	...Including connecting rod articulated with saw blade or support
501	..Having plural cutting edges
502	...Oppositely directed cutting edges
503	...Simultaneously cutting
503.5	....Parallel cutting
504	..Having tooth or blade protective or strengthening means
505	..With gauge for limiting depth of cut
506	..Mounted in truss frame (e.g., bucksaw)
507	..Mounted in U-frame
508	...Offset blade
509	...Coping saw
510	...Extensible
511	....Length and depth
512	...Collapsible frame
513	...Blade-tensioning means
514	..With accessory and handle
515	...Lubricant dispenser
516	...Dust blower
517	...Handle
518	....Offset
519	....Angularly adjustable

520	....Double grip
521	....Spindle type (e.g., for double end cross-cut saw)
522	.....Having side clamping plates
523	.....Fastener passes through transverse passage in handle
524	.....Fastener passes through longitudinal extending passage in handle
525	....Scroll type
168	.Cold chisels
167	.Chisel
167.1	..Compound
167.2	..With gauge
169	.Scrapers
170	..Wheeled
171	..Hoe type
172	..Plural blade
173	.Plural cooperating blades
174	..Corer type
175	..Nippers
176	...Multiplex
177	...Adjustable-position cutter
178	...Form cutter
179	...With guide and/or gauge
180	...With motor
181	...Compound blade movement
182	...Reciprocating blade
183	....Lever and cam
184	....Lever and link
185	....Toothed slide and lever
186	...Pivoted blade
187	....With blade-moving means
188	.....One movable blade
189	......Lever and cam
190	......Lever and link
191	.....Pivoted handles
192	......Handles interlinked or geared
193	......Common pivot
194	..Shears
195	...Hair thinners
196	...Multiple shearing position
197	....Multiplex
198	....Body-supported
199	....Adjustable angle
200	....With cut regulator
201	.....Adjustable
202	......Automatic
203	....Convertible, power- or manual-operated
204	....Compound blade movement
205	....Rotary blade
206	.....With motor
207	.....With blade-tension means
208	....Reciprocating and/or oscillating blade
209	.....Reciprocating or oscillating power source
210	......With motor
211	......Pivoted handles
212	.......With spring return
213	........And blade-tension means
214	.......With blade-tension means
215	.....Rotary power source
216	......With motor
217	......Crank or cam, pitman and lever
218	......Crank or cam, lever and slide
219	......Crank or cam and lever
220	......Crank or cam and slide
221	.....With blade-tension means
222	......And friction reducing feature
223	....Blade assembly
224	.....With friction reducing feature
225	....Blades
226	...Multiplex
227	....With blade-moving means
228	...With motor
229	...Form cutter

	CUTTING TOOLS
	.Plural cooperating blades
	..Shears
	...Form cutter
230	....Zigzag
231	...With supports
232	....Hand or finger
233	...With guard, guide and/or gauge
233.5	....Comb type
234	...Spring joint
235	....Offset handles and blade
236	....Detachable blade
237	...Compound blade movement
238	....One movable blade
239	....Intermediate pivot
240	...Rotary blade
241	...Reciprocating blade
242	....Lever and link
243	....Toothed lever and slide
244	...Pivoted blade
245	....With blade-moving means
246	.....Push or pull type
247	.....Rotary power source
248	.....Offset blade and handle
249	.....One movable blade
250	......Pivoted handle
251	.......Lever and connecting link
252	.....Pivoted handles
253	....End pivot
254	....Intermediate pivot
255	.....Foldable
256	.....Right or left hand
257	.....Offset blade and handle
258	.....Blade and slot
259	.....Offset pivot
260	.....Detachable blade and handle
261	.....Spring opened or closed
262	......With latch
263	..Rotary blade
264	...With motor
265	...Two rotary blades
266	..Joints and blade-tension means
267	...With friction-reducing feature
268	...Spring tension
269	....Threadless pin type
270	...Nut lock type
271	..Stops and bumpers
272.1	.With blade moving means
273	..Base-supported
274	...Band knife
275	...With presser foot
275.4	..With support or attaching means
276	..Rotary blade
277	..Impact
277.4	..Including a motor
278	.With material receiving opening
279.2	..Plural blade or cutting edge
279.4	...Swinging-stroke vegetation cutter
279.6	...Border of opening limits cutting depth, e.g., peeler
280	..Push or pull type
281	...Spoke shave type
282	..With blade guide
283	..Adjustable
284	...Detachable guard
285	..Detachable guard
286	.With guard and/or guide
287	..Plural blade or cutting edge
288	..Diverse kinds
289	..Blade or material guide
290	...With support
291	....Hand- or finger-supported
292	...Traveling roller blade
293	...Adjustable
294	...Push or pull type
295	..Hand guard
296.1	.With support or attaching means
297	..Leg- or foot-supported
298	..Hand- or finger-supported
298.4	..Nonuse support
299	.Plural blade
300	..Sweep cutter
301	..Annular blade
302	...With radiating or crossed blades
303	..Radiating or crossed blades
304	..Parallel blades
305	...Push or stamp type
306	..Traveling roller cutter
307	...Disc blade
308	.Cleaver type
308.1	.Hatchet, ax, or adze
308.2	..Foldable to cover bit
308.3	..Detachable bit
309	.Sickle or scythe type
310	.Sweep cutter
312	.Plural handle or grip
313	..Draw knives
314	.Push and/or pull type
315	..Push or stamp type
316	...Annular blade
317	..Pull type
318	.Swing stroke type
319	.Traveling roller blade
320	.Adjustable blade
321	..Pivoted
322	FORKS
323	.With hand guard and/or support
324	SPOONS
325	.Perforated
326	.With cover and/or guard
327	.With support
328	.Reinforced
329	HOLDERS FOR DETACHABLE BLADES
330	.Pivoted part
331	..End pivot
332	.Knockdown holders
333	..One movable side
334	.U-strap holder
335	.Sliding-blade assembly
336	..Spring jaw type
337	.Interlocked blade and holder
338	..Spring jaw type
339	..Apertured blade
340	HANDLES AND BLADE CONNECTIONS
341	.Shear or nipper type
342	.Blade connections
343	..Cast-on handle
344	..Welded, riveted or bolted
345	MATERIALS
346	BLADES
346.5	.Razor blade
346.51	..Cutting couple element
346.52	..Having indicia
346.53	..Of specific material
346.54	...Including metallurgical characteristic
346.55	..Including details of cutting edge
346.56	...Toothed or waved edge
346.57	..Having three or more cutting edges
346.58	..Composite razor blade
346.59	...Interfitting sections
346.6	..Reinforces
346.61	..Apertured, notched or lugged
347	.Rotary
348	.Reinforced
349	.Detachable cutting edge
350	.Metallurgical feature
351	.Apertured, notched or lugged
352	.Reamer type
353	.Plural cutting edge
355	.Toothed or waved
356	.Longitudinally curved
357	.Edge structure
500	IMPLEMENTS ADAPTED TO BE DRIVEN BY DETACHABLE PORTABLE POWER-DRIVE MEANS (E.G., ELECTRIC DRILL)

DIGESTS

DIG 1	Rechargeable battery operated
DIG 2	Dry shavers
DIG 3	Envelope openers
DIG 4	Explosive
DIG 5	Lawn edgers
DIG 6	Resilient means
DIG 7	Sprinkler and cutter
DIG 8	Seam rippers

CLASS 33 GEOMETRICAL INSTRUMENTS

1 R	MISCELLANEOUS
1 A	..Aerial photo
1 B	..Printed sheet
1 C	..Curve and chart analysis
1 D	..Indexing and verniers
1 E	..Dip and strike
1 F	..Article subdividing
1 G	..Layout
1 H	..Earth
1 K	..Copy aids and perspective drawing
1 M	..X-Y motion
1 N	..Angular measurement
1 L	..Optical readout
1 P	..Sonic wave
1 Q	..Railroad
1 S	..Statistical measurements
1 T	..Theodolite-optical readout
1 V	..Volume measurement
1 AA	..Tables-layout
1 BB	..Inspection
1 CC	..Remote point locating
1 DD	..Light direction
1 HH	..Seismic
1 LE	..Line engaging
1 MP	..Multipolar
1 SP	..Radius and spiral
1 PT	..Angular position transducer
1 AP	..Angle polysection
1 SB	..Simulating calculators
1 SA	...Spherical
1 SC	...Astronomical
1 SD	...Flat multisheet
1 CF	..Character forming
2 R	APPAREL
2 H	..Hems and cuffs
2 A	..Stocking gauge
3 R	.Footwear
3 A	...Single measuring or indicating means
3 B	...Multiple indicating means, independent
3 C	...Multiple indicating means interconnected
4	..Laying out
5	...Patterns
6	..Processes
7	.Leveling features
8	.Stand supported
9 R	..Skirts
9 A	....Power-marking
10	...Platform
11	.Laying out
12	..Patterns and charts
13	...Perforated
14	...Adjustable
15	....Conforming
16	..Adjustable
17 R	.Processes
17 A	...Pattern grading
18.1	SCRIBER
18.2	.Writing
18.3	.Perspective drawing
19.1	.Graduating
19.2	..Straightline
19.3	..Circular
20.1	.Sight-line controlled
20.2	..Course tracking
20.3	..Perspective view tracing
20.4	..Stereoscopic mapping
21.1	.Curved surface
21.2	..Spherical
21.3	..Pipe junction
21.4	..Tumbler engraving
22	..Pantographic
23.01	.Pantographic
23.02	..Single beam
23.03	..Superposed carriages
23.04	..Sliding pivot
23.05	..Opposite replica
23.06	..Plural reproduction
23.07	..Pattern grading
23.08	..Pattern follower
23.09	..Human form
23.1	..Telautograph
23.11	..Template and stylus details
24.1	..Multiplane
24.2	...Pendulum
24.3	...Coaxial styli
25.1	..Parallelogram type
25.2	...Simple parallelogram
25.3	...Universally parallel bar
25.4	...Progressive lettering
25.5	...Tandem pantographs
26	.Compound curved and straight-line
27.01	.Curved line
27.02	..Compass
27.03	...Beam type
27.031	...With scoring means
27.032	....Including scale
27.033	....With screw adjustment means
27.04	..Circle forming frame support
27.05	..Circle forming roller
27.06	..Circle forming pin and jointed arm
27.07	..Circle forming rotating table
27.08	..Conic section
27.09	..Spiral
27.1	..Sine curve
27.11	..Rose engine
27.12	..Pattern follower
28	..Lens
29	..Stair
30.1	..Ellipsograph
30.2	...Pivoted circular pattern
30.3	...Pattern follower
30.4	...Harmonic component
30.5	...Flexible cord type
30.6	...Sliding leg
30.7	...Planetary scriber arm
31	...Right-angle guides
32.1	.Straight line
32.2	..Portable
32.3	..Moving scriber
32.4	...And sheet
32.5	..Stationary scriber and moving support or sheet
32.6	...Moving sheet
32.7	..Sheet support and handling details
33	..Clapboard
34	..Ink
35	...Traveling markers
36	....Rotary
37	...Rotary markers
38	....Blank space
39.1	...Blank space
39.2	....Hand pen
40	..Set shift
41.1	.Parallel line
41.2	..Lettering guide
41.3	..Rotary marker
41.4	..Multi-marking
41.5	..Profile tracing
41.6	..Single marker with spacing guide
42	..Edge guided
43	...Bevel set
44	...Multimarkers
45	..Machine type
227	STRAIGHTLINE LIGHT RAY TYPE
228	.Process
229	.Aerial bomb sight
230	..Gyroscopically stabilized
231	..With ground speed indicator
232	.Marine or aircraft ground speed indicator
233	.Gun sight
234	..Bore type
235	..Ordnance
236	...Gyroscopically stabilized

STRAIGHTLINE LIGHT RAY TYPE
.Gun sight
..Ordnance
237 ...Self adjusting gun movement compensator
238 ....Compensates for moving target
239 .....And moving craft or gun platform
240 ....Compensates for trunnion tilt
241 ..Illuminated or luminescent
242 ..Critical material
243 ...Colored
244 ..Hood or cover
245 ..Telescopic type
246 ...Having adjustable reticle
247 ...Movable relative to base
248 ....Vertically and laterally adjustable
249 ....Movable to non-use position
250 ...Readily detachable (i.e., knockdown)
251 ..Having variable size sight aperture
252 ..Movable relative to base
253 ...Plural sights, pivotally selective
254 ...Vertically
255 ....And foldably
256 .....And laterally
257 ....And laterally
258 .....Rectilinearly
259 ....Non-rectilinearly
260 .....Pivots about transverse axis
261 ..Multisight
262 .Body related
263 .Structurally installed
264 ..Vehicle
265 ..Archery bow
266 ..Camera
267 .With telemetric means
268 .Celestial
269 ..Time computing
270 ...Including gnomonic indicator (e.g., sundial, etc.)
271 ....And compass
272 .With magnetic compass
273 ..And level or plumb
274 .With straight edge instrument or chart
275 R .Combined
275 G ...With gyroscope
276 .Multisight line
277 ..Common viewpoint
278 ..Relatively movable
279 ...Angularly and rectilinearly
280 ...Each separately adjustable
281 .Vertical and horizontal angle measurer
282 .Vertical angle
283 ..Having gravity responsive indicating means (e.g., pendulum, etc.)
284 ..Including distance finding feature
285 .Horizontal angle measurer
286 .Alignment device
287 ..Railway track
288 ..Vehicle chassis, running gear or headlamp
289 ..Game ball (e.g., football, etc.)
290 .Level (i.e., surveyor's type)
291 ..Self leveling
292 ..With tubular sighting means (e.g., telescope, etc.)
293 .Rod or target
294 ..Self computing type rod
295 ..With leveling or plumbing adjunct
296 ..Extensible rod sections
297 .Reticle
298 ..Adjustable
299 .Instrument support
300 INDICATOR OF DIRECTION OF FORCE TRAVERSING NATURAL MEDIA
301 .Process
302 ..Borehole or tube interior study
303 ..Including calculation or comparison
304 .Borehole direction or inclination
305 ..Etching or marking liquid determines orientation
306 ..Fluid (e.g., drilling fluid, etc.) responsive
307 ...Varied pressure or pressure pulses representative
308 ..Pendulum mounted or directed marker
309 ...Radiant energy or electrically produced marking
310 ...Includes magnetic directional indicator
311 ...Record movable to marking position
312 ..Electrical telemetering to read-out
313 ..Inclination and direction indications
314 ..Indicator image projected on sensitized record (e.g., photographic, etc.)
315 .Thermally sensitive
316 .Gyromagnetic compass
317 R ..Electrical telemetering
317 D ....Differential disparity correction
318 .Gyroscopically controlled or stabilized
319 ..Magnetic compass
320 ..Geographic position indication (i.e., latitude or longitude)
321 ..Plural gyroscopes (e.g., reference platform, etc.)
322 ...Diverse indications
323 ...Directive gyroscope stabilized by auxiliary gyroscope
324 ..Gyroscopic compass
325 ...Transmission system for remote readout
326 ...Selective correction for deviation
327 ...Fluid, suspension or control
328 ..Attitude indicator (i.e., pitch or bank)
329 ...Gyroscope mounted, lever indicator and skyplate
330 ...Spherical indicator
331 .With recorder
332 .With marker
333 .Structurally installed including relation to feature thereof
334 ..Hand implement (e.g., tool, rifle, camera, etc.)
335 .Vehicle running gear, or headlight, inclination
336 ..Wheel supported
337 ..Axle supported
338 .Railway rail spacing and inclination
339 .With cord type straight line guide or holder therefor
340 .With measurement in plural directions or of shape
341 ..With variable angle indication
342 .With independent linear measurement
343 .With angle or shape determination
344 .With damper or governor for sensor
345 ..Magnetic
346 ..Fluid
347 .Attaching means (i.e., adhesive, magnetic or vacuum viewing aid)
348 .With viewing aid (i.e., illuminator or illumination director)
348.2 ..Spirit level electric illuminator
349 .With preselected direction indicator
350 .With protector or shock absorber
351 .Diverse directional indicator
352 ..Includes magnetic compass
353 ..Line plumb and bubble level
354 .Combined
355 R .Magnetic field responsive
355 D ...Dip aligning needle
356 ..Error indicator, preventor, or compensator
357 ...Error-producting-field minimizing

	INDICATOR OF DIRECTION OF FORCE TRAVERSING NATURAL MEDIA
	.Magnetic field responsive
	..Error indicator, preventor, or compensator
	...Error-producting-field minimizing
358	....Adjustable positioned permanent magnet
359	.....Pivoted adjustment
360	..Utilizing cathode-ray tube or photoelectric cell
361	..Electro-magnet or inductor (e.g., flux valve, etc.)
362	...Inductor rotated or vibrated
363 R	..Electrical telemetering
363 K	....Photoelectric pickoff
363 L	....Electrical contact pickoff
363 N	....Electrolytic liquid pickoff
363 Q	....Resistance, capacitance or inductance pickoff
363 Y	....Fluid jet or pressure pickoff
364	..Liquid buoyed magnetic needle
365	.Level or plumb, terrestrial gravitation responsive
366	..Electrically actuated signal or indicator
367	..Plural, similar, separable liquid columns system
368	..Arresting means for movable indicator
369	..Line level type
370	..Work, or workman, attaching means
371	...Requiring no modification of the work
372	....Elastic bias type clamping
373	....Encircling clamp, loop, or strap
374	..Relatively movable, coacting, reference-surface sections
375	...Affecting level or plumb indication
376	..Add-on-type reference-surface section
377	..Liquid type, upper surface utilizing
378	...Float or piston
379	...Bubble
380	....Adjustable size
381	....Plural
382	.....Coacting at an angle
383	.....Relatively adjustable
384	....Liquid container adjustable on reference-surface section
385	.....Cam type adjuster (e.g., gear, screw, wedge, etc.)
386	......Opposing spring
387	......Adjustment indicium
388	.....Adjustment indicium
389	....Bubble-position indicia on reference-surface section
390	....Universal, or plural indicating sections on container
391	..Pendulum
392	...Plumb line (i.e., flexible, line suspended plumb bob)
393	....Line take-up reel
394	.....Spring biased
395	...Plural, coacting in intersecting planes
396	...Liquid buoyed
397	...Gimbal mounted
398	...Weight, variable quantity or center of gravity
399	...Indicium adjustably fixed to reference-surface section or to weight
400	....Cam type adjuster (e.g., gear, screw, etc.)
401	...Motion transmitting mechanism drives indicator
402	...Means limiting swing
403	STRAIGHTEDGE TYPE
404	.Wall guide and plumb (e.g., building construction)
405	..Batter board type
406	..Adjustable vertically
407	..Building is the vertical support
408	...Connected to brick
409	....By line tension only
410	....Having adjustable clamp
411	.Clapboard marking
412	.Shaft aligning
413	.Cord type
414	..With chalking feature
415	.Multiplane angularly adjustable
416	..Roof framing
417	...Having rafter cut indicia (e.g., pitch, rise, etc.)
418	.Square and pivoted straightedge
419	..And sliding
420	..Straightedge as a hypotenuse of the square
421	...Having angle or slope indicating means
422	..Having circumferential pivot, only
423	..With indicia for rafter cuts
424	..With protractor
425	...And sliding straightedge
426	...Located on straightedge
427	.Square and sliding nonpivotal straightedge(s)
428	..Straightedge bisects right angle of square (i.e., centering square)
429	.Square and fixed straightedge
430	.Base attached
431	..Navigation
432	..Perspective drawing
433	...With T-square straightedge
434	...With parallel straightedge arrangement (i.e., drafting machine)
435	..Rotary base
436	..Linear counter rule
437	..With guide or catch for T-square type
438	..Universal parallelism arrangement
439	...Wheel and band
440	....With counterbalance
441	...Double linkage
442	....With counterbalance
443	..Both ends connected
444	...By cord and roller
445	...By rack and pinion
446	...One end moveable along straightedge
447	..Set shift, positively
448	.With means for moving straightedge over a surface
449	..By rollers
450	..Set shift
451	.Combined with level
452	.Plural straightedges, relatively moveable
453	..Triangulation (e.g., solving trigonometric functions)
454	..Parallel type
455	..Intercontrolled bevel blades
456	..Multipivoted straightedges
457	...Navigational
458	...Folding rule type
459	...Two straightedges pivoted at the ends of a central straightedge
460	....At least one pivot is sliding
461	.....Central straightedge longitudinally adjustable
462	....Central straightedge longitudinally adjustable
463	....Three straightedges forming a triangle
464	..Sliding
465	..Single pivot
466	...Handsaw attachment
467	...Lettering guide
468	...T-head with pivoted straightedge

STRAIGHTEDGE TYPE
.Plural straightedges, relatively moveable
..Single pivot
...T-head with pivoted straightedge
469 ....Locking
470 ....Sliding
471 ...With angle indicating means
472 ...Pivoted straightedge and sliding nonpivoted
473 ...Sliding pivotal adjustment
474 .Plural straightedges nonadjustably fixed at right angles (e.g., T-square, triangles, squares)
475 ..With right angle truing adjustment
476 ..With special scale markings
477 ..Lettering guide
478 ..Folding or separable
479 ..T-square
480 ..Try square
481 ..Multiplane
482 .Plural nonadjustable straightedges forming non-right angles
483 .Rules
484 ..With attachment
485 ...For performing diverse function
486 ...Index
487 ....For subdividing
488 ....Optical (e.g., magnifying)
489 ...For supporting above work surface
490 ...Located on end
491 ...Selectable
492 ..Edge details
493 ..Particular material
494 ..Special scale markings
495 .Pivot joints
496 ..180 degree limit
497 ...Locking
498 ..90 degree limit
499 ...Locking
500 ..Locking
121 AREA INTEGRATORS
122 .Planimeters
123 .Electrical
124 .Rolling contact
700 DISTANCE MEASURING
701 .Process
702 .Error compensation (e.g., temperature)
703 .Environmental isolation
704 ..Thermal
705 ..Sealing
706 .Scale reading position sensor (e.g., grid counting)
707 ..Optical
708 ..Magnetic
709 .Convertable to another type measuring means
710 .Machine parts
711 ..Rolling contact
712 .Article support integral with measuring means
713 .Sounding type
714 ..With electric control means
715 ...Of line
716 ..Including electrical signal means
717 ..With sampling means
718 ...Hole type
719 ..Depth indication
720 ..Line with weight
721 ..For nongaseous material
722 ...Liquid (e.g. dipstick)
723 ....With means to adjust measuring rod
724 .....Having plural contacts
725 ....With cleaning means
726 ....With guide
727 ....With filter or vent
728 ....With lock means
729 ....Shape of indicator
730 ....With holder or housing for indicator
731 .....Including seal
732 .Of flexible material
733 ..Supply (e.g., bolt, roll)
734 ..By rolling contact
735 ...With computing means
736 ...With particular electric output or circuit
737 ...With recording or marking means
738 ...Having rectilinear scale
739 ...With signal means
740 ...With stop means
741 ....For motor
742 ....By Clutch
743 ...Combined
744 ...Belt type
745 ...Zero setting means
746 ...Rotating and stationary surfaces
747 ...Opposed rotating surfaces
748 ....Plural
749 .....Only three
750 ..Predetermined stop or signal means
751 ..With marking means
752 ..With ratchet means to move indicator
753 ..With gear means to move indicator
754 ..With take up reel
755 .By flexible tape
756 ..Cord type
757 ..Means to keep tape straight
758 ..With adhesive or securing means
759 ..Specified use
760 ..Combined
761 ..Specified reel housing feature
762 ...With meter
763 ....Including computing means
764 ...Plural tapes
765 ...Opening in housing for reading tape
766 ...Inside-outside measure
767 ...Including brake or lock
768 ...Including attachment
769 ...Housing shape, structure or material
770 ..Including attachment
771 ..Specified tape material
772 .Of length by rolling contact
773 ..With computing means
774 ..Having rectilinear indicator
775 ..Combined
776 ..Belt type
777 ..Inside tube
778 ..On running material (e.g., mill type)
779 ..Implement
780 ...With digital indicator
781 ....Including handle for implement
782 ...With handle
783 .Opposed contacts
784 ..Digital indicator
785 ..Fluid indicator
786 ...Liquid column indicator
787 ..Extensometer
788 ...With circuit means
789 ....Including differential transformer
790 ...Including means to clamp indicator to material
791 ..Optical indicator
792 ..Rotary indicator
793 ...Electrically controlled
794 ...Hand held implement
795 ....Beam type
796 .....Nonpivoted type with scale
797 ....Pivoted type
798 .....Center pivot
799 ......With screw or gear adjustment means
800 ......With spring adjustment means
801 ......With scale
802 ....Rectilinear push or pull actuator
803 ...Bench type
804 ....Lever actuator

	DISTANCE MEASURING
	.Opposed contacts
	..Rotary indicator
805	...With work support
806	..Rectilinear indicator
807	..Pivoted type with scale
808	...With adjustment means
809	..Extensible-rule type
810	..Beam type with scale
811	...With means to adjust one contact member
812	...Including means to lock one contact member
813	..Micrometer
814	...Differential screw
815	...With means for maintaining a constant or limited pressure on the contacts
816	...With wear compensation or backlash prevention means
817	...With lock
818	...With additional indicator
819	....Digital
820	....Electrical
821	...With preliminary setting arrangement
822	....By disengaging threaded element
823	....Micrometer slidably mounted on a beam
824	.....Other contact slidable on beam
825	....Spindle or micrometer slidable
826	....By use of interchangeable parts of different sizes
827	...Inside measurement only
828	...With attachment
829	....Particularly adapted for measuring threaded element
830	...With special scale markings
831	...Details (e.g., spindle or anvil adjustment, material
832	.Single contact with a work engaging support
833	..Adapted for a particular workpiece
834	...Coating or surface layer thickness
835	...Reeled material
836	...Depth of aperture or groove
837	..Fluid actuated indicator
838	..Screw adjustment
501	GAUGE
501.01	.Leather grading or size
501.02	.Continuous gauging
501.03	..Including electric means
501.04	...Pivoted probe
501.05	.Comparator
501.06	..Beam type
501.07	...Three contact probes
501.08	..Hand held
501.09	...Plural contact probes
501.1	....Only three probes
501.2	.....With rotary indicator
501.3	....Only four probes
501.4	....With rotary indicator
501.45	....Fixed size
501.5	...With pivot means
501.6	..Electric type
501.7	.Tooth testing (e.g., gear, rack)
501.8	..By electrical comparison
501.9	...Including a probe
501.11	..Implement type
501.12	..Internal
501.13	..By pair of engaged gears
501.14	..By probe
501.15	...Teeth spacing
501.16	...Including a master
501.17	...Plural probes
501.18	....Only two
501.19	..By rotary master
193	.Axle
194	.Door and window
195	.Hoof
196	.Millstone
197	.Mortise
199 R	.Screw thread
199 B	...Bench type
200	.Spectacle
201	.Tool
202	..Saw
203	.Wheel
203.1	..Watch
203.11	..Tread contour
203.12	..With wheel supporting means
203.13	...Roller or drum
203.14	...Pivoted or sliding scuff board
203.15	..Floor supported, wheel contacting
203.16	...Plane and radius
203.17	...Trammel
203.18	..Axle, vehicle or wheel supported
203.19	...Plane and radius
203.2	...Trammel
203.21	..Trammel
502	.With calibration device or gauge for nuclear reactor element
503	.Coordinate movable probe or machine
504	.With computer responsive to contact probe
505	.Having program control or an analogue to digital device
506	.Target, weapon or weapon projectile
507	.Lens
508	.Golf stance, swing or club analysis
509	.Bowling ball
510	..Grip
511	.Anatomical
512	..Human
513	...Dental
514	....With mouth or teeth contact
514.1	...Ring type
514.2	...Conformator
515	...Having a support or foot locator for body
516	.Point reproducer
517	.Bearing or bearing part
518	.Masonry construction
519	.Cam profile or keyway
520	.Center, point, distance between centers or centerline location
521	.Earth profile or road grade or shrub or tree trim guide
522	.Container
523	.With conveying wheel support
523.1	..For railway track
523.2	...With recording means
524	.Food portion
525	..Pie, cake, cheese, pizza or sandwich portion
526	.Flooring, floor or wall covering or molding
527	..Floor covering
528	.Wall panel outline marker for utility
529	.Pipe layout or fitting
530	.Pitchometer
531	.Taper
532	..External
533	.Straightness, flatness or alignment
534	.Angle
535	..Squareness
536	..Sine, cosine or tangent bar
537	...Article support
538	..Fixed pivot at one end
539	.Lock or key
540	..Cylinder lock tumbler decoder
541	.Postage stamp or mechanical coupling gauge
600	.Automotive
601	..Mechanical engine timing by piston contact in engine cylinder
602	..Distributor point setting
603	..Connecting rod

GAUGE
.Automotive
..Connecting rod
604 ...With piston
605 ..Piston, piston ring, or crankshaft
606 ..Power train
607 ..Fuel pump, injection nozzle or valve, or carburator
608 ..Frame Alignment
609 ..Brake
610 ...Drum or shoe
611 ..Engine Valve, valve-stem, or tappet
612 ..Torsion bar
613 .Collocating
614 ..Printing member registration
615 ...Photographic member or holder with respect to surface
616 ...Transparent registration sheet to align printing on member
617 ...Printing type or plate
618 ....Curved printing member with respect to its support
619 ....Page form registration with respect to its support or to another form on same support
620 ....Plate registration with respect to second plate or printing sheet
621 ....Plate registration with respect to plate support
622 ...Hand stamp registration with respect to printing location on sheet to be printed
623 ..Sheet registering device
624 ..Earth contacting or working
625 ...Trenching tool depth
626 ..Tool or surrogate
627 ...Die
628 ...Cutter or shaper
629 ....Screw thread
630 ....Cutter with respect to workpiece end
631 .....Shears
632 ....Axis of rotary cutter with respect to axis of cylindrical workpiece
633 ....Planar blade with respect to its holder or another part
634 .....With respect to its rotary holder
635 ......Plural blade holder
636 ....Bit with respect to its holder
637 .....Boring bar holder
638 ....Bit with respect to workpiece or workpiece holder
639 ....Drill or bit with respect to chuck or spindle holder
640 ....Circular cutter with respect to workpiece or workpiece support
641 ....With respect to support
642 ...Spindle or chuck with respect to workpiece or workpiece support
643 ...Millstone wth respect to millstone shaft
644 ..Centering or point location
645 ..Alignment
646 ..Clapboard lapping
647 ...Having tab for supporting bottom of clapboard
648 ..Shingle lapping Gauge
649 ...Having tab on underside of shingle
650 ..Shoe, shoe part or last
651 ..Railway track or railway vehicle part
651.1 ...Track type
652 ..Burner fuel emitting member with respect to electrode spacing
653 ..Insignia with respect to garment, e.g., uniform
654 ..Valve
655 ..Machine parts
656 ...Electrical dynamo
657 ...Rolls, or roll and coacting part
658 ...Typewriter
659 ...Watch
660 ...Wheel quartering or crank arm, connecting rod or crank pin with respect to one or the other
661 ...Plural axes center for common axis
662 .Button or buttonhole
663 .Proportional line segmenter
664 ..Parallelogram type
665 ..Dividers
666 .With point marker
667 ..For door or drawer hinge, pull or securing means
668 ..For wind-up tape or tape casing, or marker attachment for tape
669 ..Plural markers
670 ..Having marker centering means
671 ...For marking centers of hole
672 ...Having diverging-angle bisector workpiece-contacting members with marker on angle bisector
673 ...Having adjustable workpiece-contacting centering means
674 ....Pivoted caliper workpiece-contacting means
675 ....Rack and pinion operating workpiece-contacting means
676 ...Having workpiece-contacting tapered centering means
677 ..Having workpiece-contacting device with marking to align with workpiece marking
678 ..Angularly adjustable about an axis
679 ..Marker located with respect to two different directions
679.1 .Special scale markings
542 .Internal
543 ..Concentricity or eccentricity
543.1 ..Fluid type
544 ..Earth cavity or tube
544.1 ...Including means to rotate probe
544.2 ...Having means to actuate probe
544.3 ....Biased probe
544.4 ..Tapered probe
544.5 ..Having more than two probes
544.6 ...Only three probes
542.1 ..Telescoping caliper or stem gauge
545 .Comparison with a standard
546 ..Profile
547 ...Optical comparison
548 .Plural tests
549 .With support for gauged article
550 ..Concentricity
551 ..Profile
552 ...Having plural contact members
553 ...Member contacts successive points on the article
554 ....With recording of contact member position at each point on the article
555 ..Having indicator of probe position or movement
555.1 .Circular size
555.2 ..Aperture type
555.3 .."V" type
555.4 ..Flexible band type
556 .Having a movable contact probe
557 ..Plural probes
558 ..Electrical switch or transducer responsive to probe or probe is part of electrical circuit
558.01 .Pivoted probes (e.g., divider, caliper, etc.)
558.02 ..Proportional
558.03 ..Point parallelizing
558.04 ..Having adjustable legs
558.05 ...By screw means

	GAUGE
	.Pivoted probes (e.g., divider, caliper, etc.)
	..Having adjustable legs
	...By screw means
558.06	....Tangent
558.07	....Median
558.08	....Quick adjustment
558.09	....Having opposed threads
558.1	....Rotatable nut
558.2	..Plural legs or contact probes
558.3	..Removable probe
558.4	..Pivoted probe
558.5	..Median handle
559	.Movable contact probe per se
560	..Plural probes
561	..With electrical switch or transducer responsive to probe
561.1	.Conformator or adjustable curve template
561.2	..Flexible type
561.3	...Including plural adjustment means
562	.Template
563	..Single sheet type
564	...Alphabetical or numerical symbol type
565	...Geometrical figure, three dimensional to two dimensional figure or curve
566	...Line or guide
567	.Surface plate or gauge block
567.1	..Adjustable gauge block
568	.Work support adjustment
569	..Rotary
570	...Pin and slot type
571	.With scale
572	.Probe support
573	.Work support
574	POINT MARKER GUIDE
575	.Button or buttonhole maker guide
576	..With workpiece support
577	.With support for workpiece
578	.For plural markers
579	.For maker movement in direction of marker axis
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	DIGESTS
	******************************
DIG 1	Magnetic
DIG 2	Air
DIG 3	Photoelectric
DIG 4	Interferometer
DIG 5	Differential transformer
DIG 6	Dial indicator shock absorber
DIG 7	Ribbon and wires
DIG 8	Eccentrics
DIG 9	Rectangular proportioner
DIG 10	Outlet box
DIG 11	Materials
DIG 12	Mechanical expedients
DIG 13	Wire and strain gauges
DIG 14	Spline and gear
DIG 15	Piston position indicator
DIG 16	Clips and rafters
DIG 17	Piston ring and bearing race gauging
DIG 18	Flush pin gauges
DIG 19	Thermal expansive
DIG 20	Tile
DIG 21	With laser

CLASS 34 DRYING AND GAS OR VAPOR CONTACT WITH SOLIDS

DECEMBER 1990

1	MATERIAL SUBJECTED TO ELECTRICAL ENERGY
2	FEATHER TREATING
	PROCESSES
3	.Hair on head
4	.With selected radiant energy
5	.With freezing, congealing or thickening
6	.Sheet or web contact preventing by spacer sheets, webs or strands
7	.Retarding treating action by shielding
8	.With centrifugal force
9	.With contacting of material treated with liquids or solids
9.5	..Wood treated
10	.With fluid current conveying or suspension of treated material
11	.With treated material recirculation
12	.With operation on treated material other than drying
13	..With cooling
13.4	...Wood treated
13.8	..Wood treated
14	.With mechanical liquid removal
15	.With vacuum and/or gas or vapor pressure varying or control and/or fluid sealing
16	..Sheets, webs or strands
16.5	..Wood treated
17	.Diverse types of drying operations
18	..Sheets, webs or strands
19	.Combined
20	.Cooling by gas or vapor contact
21	.Hollow articles and/or forms
22	.Gas or vapor contact with material treated
23	..Sheets, webs or strands
24	...With spacing, rolling or coiling
25	..Material speed, thickness or quantity control
26	..Temperature control or varying and treatment of gas or vapor
27	...Vapor removal from gas
28	...With treated material motion
29	...Gas or vapor flow directing or control
30	..Temperature control or varying
31	...With treated material motion
32	..Treatment of gas or vapor
33	..With treated material motion
34	..Gas or vapor flow directing or control
35	..Heat conserving
36	..Special gas or vapor
37	...Vapors
38	..Piling or arranging material treated
39	.Radiant or conducted heating
40	..With evolved gas or vapor treatment
41	..Sheets, webs or strands
42	.Miscellaneous
	APPARATUS
43	.With automatic control
44	..Of plural operations
45	...Of operation sequence
46	...Of heater, contacting gas humidity and/or gas mixing
47	..Of gas mixing
48	..Of heater
49	...By web or strand tension or breaking
50	..Of contacting gas humidity
51	..Of gas or vapor pressure in treating enclosure
52	..Of rate of treated material motion
53	..Of time period
54	..Of flow of gas or vapor treating fluid
55	..Of starting and/or stopping
56	..Of treated material feeding and/or discharging
57 R	.With fluid current conveying of treated material
57 A	...Vertical gas projection
57 B	...Lateral air blast
57 C	...Inclined grate
57 D	...Mechanical rotating element
57 E	...Rotary gas current
58	.With apparatus using centrifugal force
59	..Rotary scattering member
60	.For diverse operations on treated material
61	..With two or more nondrying means
62	..With treated material cooling means
63	...Internal rotary drum drier
64	...Gravity flow-type drier
65	....With integral cooling chamber or section
66	...Cooler chamber integral with or similar to drier
67	...Atmospheric
68	..Diverse heater types and/or gas or vapor contact types only
69	..Diverse types of liquid removers only
70	...With expressing or wringing
71	...With means to remove liquid from treated material by contact with solids
72	.With means to treat gas or vapor
73	..By vapor condensation
74	...With other gas or vapor treatment
75	...Direct contact with cooling substance
76	...With force circulation
77	....Recirculation of treating gas or vapor
78	...Recirculation of treating gas or vapor
79	..Separation of substances from treating or exhaust gases or vapors
80	...By absorbent
81	....In or forming walls, ceiling or floor
82	...By filter
83	..Jet devices
84	...Gas or vapor circulators or flow promotors
85	.With apparatus cleaner and/or escaping material collector
86	.With waste gas heat and/or power conservers
87	.With means to interlock operable elements
88	.With display, inspecting or illuminating means
89	.With indicating or testing means
89.1	.Blotting means combined with means for purpose other than drying
89.2	..With ruler
90	.Combined
91	.Convertible
92	.Vacuum
93	.Solar
94	.Sheet or web contact preventing by spacer sheets, webs or strands
95	.Means to remove liquid from treated material by contact with solids
95.1	..Having manipulative means
95.2	...Attachable to hand (e.g., finger)
95.3	...For rolling contact
95.4	...For rocking contact
96	.For hair on head
97	..With gas or vapor flow for contact
98	...Plural distributors
99	...Head conforming distributor
100	....Recirculation of treating gas or vapor
101	...With hair supports
102	.Treated material recirculating means
103	.Forms
104	.For hollow article
105	..With conveying or handling means

APPARATUS
.For hollow article
106 ..With suspension means and bottom retainer
107 .For slender rigid articles
108 .Rotary drums or receptacles
109 ..Compartmented or pocketed
110 ..External
111 ...With belt or felt drier
112 ...With hopper feed or article securing means
113 ...Plural
114 ....Gas or vapor circulation for contact with treated material
115 .....Through material or introduction through drum
116 ....With belts or felts
117 .....With threading, stripping or guiding devices
118 .....Tightener
119 ....Heat exchange fluid supply and/or removal
120 ....Threading, stripping, or guiding devices
121 ....Mounting and/or driving means
122 ...Gas or vapor circulation for contact with treated material
123 ...With belts or felts
124 ...Heat exchange fluid supply and/or removal
125 ....Removal only
126 ..With additional translating means
127 ..Plural
128 ...One within another (e.g., nested)
129 ...With feed from one to another
130 ..With gas or vapor flow for contact with treated material
131 ...Recirculation of treating gas or vapor
132 ...With heating means
133 ....With drum or receptacle enclosing housing
134 ....Heat exchange and/or gas or vapor conducting conduits in drum or receptacle
135 ...Axial treated material feed type
136 ....Concurrent gas or vapor flow only
137 ....Counter-current gas or vapor flow only
138 ...Gas or vapor conducting conduits in drum or receptacle
139 ...With drum or receptacle enclosing housing
140 ..Vapor exhaust
141 ...Axial treated material feed type
142 ..Axial treated material feed type
143 .Stationary press type
144 ..Plural press units
145 ..Gas or vapor circulation for contact with treated material
146 ..Nonplanar press couples
147 .Spiral treated material path type
148 .Sheet, web or strand
149 ..Sheet elevator type
150 ..Sheet on edge
151 ..For flexible sheets, webs or strands
152 ...Running lengths
153 ....Winding reels
154 ....Plural webs or strands
155 ....With gas or vapor circulation for contact with treated material
156 .....Fluid current supports or guide
157 .....Suspended loops
158 .....With edge holding means
159 .....With zigzag runs of treated material
160 .....Elongated thin gas or vapor stream
161 ....With zigzag runs of treated material
162 ...Endless conveyers or movable grippers
163 ...Movable treated material holders
164 .Treated material vibrating type
165 .Gravity flow type
166 ..Trough or tube, with axially rotary conveyer or agitator
167 ..Plural gravity path, plural feed and/or discharge
168 ..With gas or vapor flow for contact with treated material
169 ...Recirculation of treating gas or vapor
170 ...Inverted imperforate ducts
171 ...Shelf-to-shelf or zigzag treated material flow
172 ....Dumping shelves or pockets
173 ....Rotary stirrer or shelf
174 ...Foraminous distributors or walls
175 ..With venting means or wall
176 ..With treated material tubes
177 ..With heating tubes
178 ..Shelf-to-shelf or zigzag treated material flow
179 .Stationary receptacle or tube with agitator or conveyer
180 ..Plural units
181 ..With gas or vapor flow for contact with treated material
182 ...Axial treated material feed type
183 ..Axial treated material feed type
184 .Rotary or swinging carrier or rack
185 ..With agitating means or discharging scrapers
186 ..Plural rotary or swinging units
187 ..With gas or vapor circulation for contact with treated material
188 ...Air scoops and/or suspended treated material supports
189 .Elevator type
190 ..Plural
191 .Reversible or pulsating treating gas or vapor flow
192 .Removable shelf or tray type
193 ..Plural nonvertically aligned
194 ..With shelf or tray handling means
195 ..With gas or vapor circulation for contact with treated material
196 ...Recirculation of treating gas or vapor
197 ...With heater
198 ....With liquid heater or vaporizer
199 ...Zigzag treating gas or vapor flow
200 ..With liquid heater or vaporizer
201 .Houses, kilns and containers
202 ..Article inserted type
203 ..With conveyers providing plural or zigzag treated material paths
204 ...Separable truck or tray
205 ...Plural independent paths for treated material
206 ...Pusher type
207 ...Plural run endless conveyer
208 ...Single run endless, both courses carrying treated material
209 ..Plural treating units or compartments
210 ...With gas or vapor circulation for contact with treated material
211 ....Superposed floors or chambers
212 ....Recirculation of treating gas or vapor
213 .....Parallel circulation only
214 ....Parallel circulation only
215 ....With heater
216 .....With conveyer and/or movable treated material support
217 ....With conveyer and/or movable treated material support

	APPARATUS
	.Houses, kilns and containers
218	..With gas or vapor circulation for contact with treated material
219	...Recirculation of treating gas or vapor
220	....Caused by heater action only
221	....Caused by jet action
222	....Movable gas or vapor distributor
223	....Plural gas or vapor forcing means
224	....Plural gas or vapor inlets and/or outlets
225	.....In wall, ceiling or floor
226	...Tortuous gas or vapor path
227	...Gas or vapor flow toward or from treated material entrance or exit
228	....Counter-current to treated material motion only
229	...Movable gas or vapor distributor
230	...Plural gas or vapor forcing means
231	...Deflecting baffle in treating chamber
232	...Plural gas or vapor inlets and/or outlets
233	....In wall, ceiling or floor
234	...Caused by heater only
235	..With venting means
236	.Treated material handling or conveying
237	.Trays or floors
238	..Single or plural trays only
239	.Supports
240	..Rods or rolls
241	.Gas or vapor distributing and applying agitators
242	.Chamber seals
243 R	.Miscellaneous
243 C	...Car driers
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	DIGEST
	******************************
DIG 1	Absorbents and adsorbents

CLASS 36 BOOTS, SHOES AND LEGGINGS

DECEMBER 1990

1	MISCELLANEOUS
1.5	BOOTS OR SHOES AND DETACHABLE LEG COVERS
2 R	LEGGINGS AND GAITERS
2 A	..Spiral
2 B	..Molders
83	BOOTS AND SHOES
84	.Made of material other than leather
85	..Rigid material (e.g., metal, wood, etc.)
86	...Wood
87	..Plastic
88	.Foot-supporting or foot-conforming feature
89	..Ankle support
90	...For child's foot
91	..Arch support
92	..Heel support
93	..Form-fitting interior
94	...Toe spacer
95	...For relief of corn or bunion
96	..Foot shield
97	.With adjustment of shoe size
98	.With coating, treatment or impregnation of shoe
99	.Having plural similar parts (e.g., two tongues, etc.)
100	.Convertible from one style or color to another
101	..By detachable uppers
102	.Resilient or flexible shoe
103	.Having particular outsole (e.g., sectional sole)
104	..Flat sole
105	.Having particular heel (e.g., closure at rear of wearer's heel)
106	.Lacking particular shoe part (e.g., without upper)
107	.Having shoe-reinforcing plate
108	..Shank support
109	.With leg portion
110	.Shoe for cast on foot
111	.Animal shoe
112	.Shoe for children or dolls
113	.Occupational (e.g., Roof Climbing, Gardening, etc.) or Athletic Shoe
114	..Athletic shoe or attachment therefor
115	...For sports (e.g., skating, etc.) featuring relative movement between shoe and ground
116	....For walking on shifting media
117	.....Ski boot
118	......With leg extension
119	......With interior foot-retaining means
120	......With separate pivotal portion
121	.......Cuff-restraining means
122	.....Snow shoe (e.g., having binding, harness, etc.)
123	......Foldable or collapsible snowshoe
124	......With anti-slip means (e.g., cleat, etc.)
125	......With binding permitting foot to pivot
126	...For baseball
127	...For golf
128	...For football
129	...For track
130	...For bowling
131	...For riding (e.g., cycling, horse riding, etc.)
132	...Attachment (e.g., weight for shoe, etc.)
133	....Surface to control flight of kicked object
134	....Cleat (e.g., movable, detachable, etc.)
135	.....Blocking device
136	.Shoe attachment (e.g., ornament, pocket, etc.)
137	..Light-reflecting or illuminating means
138	..To facilitate removal or donning of shoe
139	..Noise maker
2.6	.Heated
3 R	.Ventilated
3 A	...Uppers
3 B	...Soles
7.1 R	.Overshoes
7.1 A	...With inside heel protector
7.2	..Heelless
7.4	...Rubber
7.7	...Antislipping sandals
7.3	..Rubber
7.5	..Sandals
7.6	...Antislipping
7.8	...Spring
8.1	.Bathing
8.2	.Burial
8.3	.Dancing
8.4	.Fitting
11	.Moccasins
11.5	.Sandals
4	.Rubber
9 R	.Felt and fabric
9 A	...Paper
10	INSIDE SLIPPERS
12	SOLE-ATTACHING MEANS
13	.Wooden soles
14	.Rubber
15	.Detachable soles
16	.Outturned uppers
17 R	.Welt connected
17 A	...Evaginated
17 PW	...Pre-welt connected
18	.Single-faced stitch
19 R	.Through and through
19 A	...Evaginated
19.5	.Cement only
21	.Seams
22 R	.Prepared soles
22 A	...With reinforcing means
23	.Fasteners
24	..Peg
24.5	INTERFITTED SOLE AND HEEL
25 R	SOLES
25 A	..Rope
26	.Fleeced slipper
27	.Spring heel
28	.Cushion
29	..Pneumatic
30 R	.Laminated
30 A	...Fillers
31	.Sectional
32 R	.Rubber
32 A	...From old tires
33	.Wooden
34 R	HEELS
34 A	..Plastic
34 B	..Covered
35 R	.Cushion
35 A	...Rubber and leather heel lifts
35 B	...Pneumatic
36 R	..Detachable
36 A	....Sectional
36 B	....Snap action
36 C	....Stud and slot
37	..Internal cushion
38	..Metallic spring
39	.Rotary
40	.Metallic shell
41	..Detachable
42	.Detachable
43	INSOLES
44	.Laminated
45	UPPERS
46.5	.Prepared for lasting
47	.Blanks

	UPPERS
	.Blanks
48	..Integral vamp and quarters
49	...Seamless
50	.Closures
51	..Elastic
52	..Buttonhole pieces
53	..Slit strays
54	..Tongue pieces
55	.Linings
56	.Pulls
57	.Seams, stays and pipings
58	.Metallic seam stiffener
58.5	BOOT AND SHOE RETAINING
58.6	.Heel engaging
68	COUNTER STIFFENERS
69	COUNTER AND HEEL SUPPORTS
71	PADS
76 R	SHANKS
76 C	..Reinforced insoles
76 HH	..Heel huggers
77 R	TOE CAPS AND TIPS
77 M	..Materials
78	WELTS AND RANDS
80	WITH HEEL LOCK
81	FOOT ELEVATORS
82	WITH HEEL PLATE
59 R	ANTISLIPPING DEVICES
59 A	..Rubber plugs
59 B	..Inserted
59 C	..Modified tread surface
59 D	..String type
61	.Disengaging
62	.Detachable
64	..Clamping
65	...Screw
66	..Attached fasteners
67 R	.Calks
67 A	...Cleats and calks
67 B	...Metal
67 C	...Driven
67 D	...Detachable
70 R	GARMENT PROTECTORS
70 A	..Blacking
71.5	PREFORMED, EXTERNALLY APPLIED, WEAR-CONNECTING ATTACHMENTS
72 R	PROTECTORS
72 A	..Shank
72 B	..Heel
72 C	..Shoe making operations
73	.Sole and/or heel
74	..Spur attached
75 R	..Embedded
75 A	....Driven
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	DIGESTS
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DIG 1	Cement
DIG 2	Plastic

1 MISCELLANEOUS
2 R STUMP AND STONE REMOVERS
2 P ..Tree pushers and bumpers
3 PEAT EXCAVATORS
196 SNOW OR ICE REMOVING OR GROOMING BY PORTABLE DEVICE
197 .Process
198 .Railway clearer
199 ..With melter
200 ...Heated plow
201 ..Explosive
202 ..Fluid current conveyer
203 ..For clearing single rail of set
204 ...Electrified rail
205 ...Including rotary excavating tool
206 ....And scraper blade
207 ...Including means clearing side of, or groove in, rail
208 ..With endless conveyer
209 ..Having rotary excavating tool
210 ...Plural rotary tools
211 ....Diverse tools performing different stages of operation
212 ....And V-shaped scraper blade
213 ...Screw-type auger
214 ..Having scraper blade
215 ...Inclined plane with V-divider
216 ....Having auxiliary blade or shiftable divider
217 ...V-shaped
218 ...Diagonal
219 .Snow or ice surface groomer
220 ..Including rut cutter
221 ..Having diverse tools
222 ...Including rotary tool
223 ..Having rotary tool
224 ...Compacting roller
225 .With compresser die
226 ..And heater
227 .With melter
228 ..Having heated transport chamber
229 ...Electric or solar heat source
230 ..Manually powered
231 .With specific means to facilitate connection to, or disconnection from, vehicle
232 .Vehicle mount with obstacle responsive trip, or yieldable tool (e.g., brush)
233 ..Resilient impeller or blade
234 .Including specific hydraulic control system to position implement
235 .Vehicle mount including power lift
236 ..Power means is hydraulically actuated piston
237 .With endless conveyor
238 ..And rotary excavating tool
239 ..Multistage conveyors
240 ..Carrying excavating tool
241 .Combined or convertible
242 ..Rotary excavating tool
243 ...Lawnmower
244 .Motorized rotary excavating tool
245 ..Tool arresting means responsive to sensed condition
246 ..Electric motor drive
247 ..Rotor shaft adjustable relative to direction of travel
248 ..Diverse multistage rotary tools or tool portions (e.g., feeding and throwing, etc.)
249 ...Including screw-type auger for first stage
250 ....Augers on separate shafts
251 ....And centrifugal impeller for final stage
252 .....Auger and impeller on single shaft
253 ..Fed by scraper blade
254 ...Including screw-type auger
255 ....Augers on separate shafts
256 ...Including centrifugal impeller
257 ..Screw-type auger
258 ...Having plural vane segments
259 ..Centrifugal impeller
260 ..Having specific flow guide
261 ...Having motor powered adjustment
262 ...Vane within chute controls flow path
263 .Tool prepares wheel path for passage of wheel
264 .Scoop
265 ..Manually powered
266 .Scraper blade
267 ..Invertible
268 ..Pulled (e.g., by horse or vehicle)
269 ...V-shaped
270 ..Mounted on surface contacting support or guide
271 ...For adjusting height of blade
272 ..V-shaped
273 ...Adjustment or collapsible apex
274 ...And auxiliary wing or extension
275 ....Top flap
276 ...Diverging forwardly
277 ...Supported on inclined plane
278 ...Manually powered
279 ..Diagonally oriented
280 ...Including side gate discharge preventer
281 ...And auxiliary wing or extension
282 ...Supported on inclined plane
283 ...Adjustable about central vertical hinge
284 ...Manually powered
285 .Manually powered
4 SELF-LOADING VEHICLES
7 .Endless floor
8 .Endless conveyer
9 .Elevating wheel
54 DREDGERS
55 .Shellfish
56 .Submarine chamber
57 .With screen
58 .Suction
59 ..Vacuum pump
60 ..Endless bucket
61 ..With jet pump
62 ...Jet digger
63 ..With jet digger
64 ..Rotary digger
65 ...Vertical axis
66 ...Transverse axis
67 ...Longitudinal axis
68 ...Suction-current operated
69 .Endless bucket
70 .Excavating wheel
71 .Scoop
72 .Pipe supports and couplings
73 .Bottom spud anchor
74 .Bank spud anchor
75 .Scouring
76 ..Digger
77 ...Rotary
78 ...Jet
79 ..Current deflector
80 R DITCHERS
80 A ..With side or auxiliary cutters
81 .Screw
82 ..Conveyer
83 .Endless bucket
84 ..Railway
85 ..Transverse cut
86 ..Longitudinal cut
87 ...Rotary digger
88 ...Reciprocating digger
89 ...Longitudinal endless conveyer
90 ...Transverse endless conveyer
91 .Wheel excavator

	DITCHERS
	.Wheel excavator
92	..Longitudinal axis
93	...Conveyer
94	..Transverse axis
95	...Conveyer
96	....Longitudinal endless
97	....Transverse endless
98	.Plow
99	..Conveyer
100	...Wheel and belt
101	...Longitudinal endless
102	....Transverse endless
103	.Shovel or scoop
104	RAILWAY GRADERS
105	.Side former
106	..Scoop
107	...Endless conveyer
108 R	ROAD GRADER TYPE
108 A	..With forms for guiding road grader
109	.Transverse endless scraper or bucket
	.Plow
110	..Transverse endless conveyer
	..Conveyer wheel
111	...Transverse axis
112	....Transverse endless conveyer
113	...Vertical axis
114	...Inclined axis
115	CABLE-OPERATED
116	.Boom type
117	.Trolley-supported
117.5	SCRAPER CONVERTIBLE TO OR COMBINED WITH SCOOP, SHOVEL OR THE LIKE
118 R	SCOOPS
118 A	..Scoops pushed forwardly of vehicle to fill bowl
119	.Shellfish
120	.Fork or rake
121	..Wheeled
122	.Sledded
124	.Wheeled
125	..Cable-operated
126 R	..Four-wheel
126 A	....The earth-containing compartment is disposed between front and rear supports
126 AA	....With coaction between apron and bowl
126 AB	....With coaction between apron and ejector
126 AC	....With significant bowl structure or manipulation
126 AD	....With significant apron structure or manipulation
126 AE	....Ejector structure per se and/or manipulation thereof
127	...Plural scoop
128	...Rear gate
129	..Two-wheel
130	...Hand-operated
131	...Caster wheel or shoe
132	...Vehicle-actuated
133	...Rear gate
134	...Lever and latch
135	.Cable-operated
136	..Valved
137	.Handled
138	..Pivot and latch
139	...Reversible
140	..Dumping runner
141 R	.Digging edge
141 T	...Bucket teeth details per se
142 R	..Teeth
142 A	....Resilient connection, or resilient element in connection between tooth and bucket
142.5	DITCH FILLER
182	ORANGE-PEEL BUCKETS
183 R	CLAMSHELL BUCKETS
183 A	..Bucket provided with releasable catch hooks to support bucket and load
184	.Common pivot
185	..Crossed lever
186	.Contiguous pivots
187	.Spaced pivots
188	.Link-connected
189	ROTARY DIGGER
190	.Endless conveyer
191 R	ENDLESS DIGGER
191 A	..Nonbucket type
192 R	.Endless conveyer
192 A	...Nonbucket-type endless digger
193	MOLE PLOWS
194	SAWMILL-CARRIAGE WHEEL GUARDS
195	PROCESSES
	*******************************
	DIGESTS
	*******************************
DIG 1	Excavators with automatic controls
DIG 2	Bucket cleaners
DIG 3	Combined implements
DIG 4	Scoops with front aprons
DIG 5	Scoops with front aprons in which the aprons perform a loading function
DIG 6	Grave diggers
DIG 7	Hydraulic motors
DIG 8	Dredging of undersea modules
DIG 9	Fluid pressure actuated scoops
DIG 10	Fluid pressure actuated bulldozer
DIG 11	Fluid pressure actuated scrapers
DIG 12	Scoop or scraper attachments
DIG 13	Land levelers, scrapers, bowl, etc.
DIG 14	Semiautomatic land leveling scrapers, scoops, etc.
DIG 15	Self-loading vehicles of front end loader type
DIG 16	Side cutters for trenching machines
DIG 17	Trenching machine drive details
DIG 18	Vibration means for excavating tool
DIG 19	Visual aids and indicators for excavating tool
DIG 20	Automatic leveling excavators

CLASS 38 TEXTILES, IRONING OR SMOOTHING

1 R	SMOOTHING MACHINES
1 A	..Cabinet structure
1 B	..Seam presser
1 C	..Electric control
1 D	..Time control
2	.Combined
3	..Moistener
4	.Multiple
5	..Cooperative platen elements only
6	.Different pressers with common smoother elements
7	.With article-transfer device
8	..Conveyer belt
9	...Conveyer belt between opposed elements
10	....Platen elements
11	...Conveyer belt opposed to single smoother
12	.With clamping or stretching
13	..And neckband engaging
14	.With fluid flow to or through the work
15	..Platen type
16	...Platen structure
17	.Platen presser
18	..Rotary presser
19	..Stacked platens
20	..Sectional press platen
21	..Having three or more press elements
22	...Sequentially usable
23	....Reciprocable press platen
24	...Selectively usable
	..Having two press platens
25	...Head and bed movable
26	....Reciprocable head or bed
27	...Head or bed movable
28	....Reciprocably
29	.....With intermediate textile roll
30	....Horizontally and vertically
31	.....Power-operated
32	....Pivotally and horizontally
33	.....Power-operated
34	....Pivotally and vertically
35	.....Power-operated
36	....Pivotally
37	.....Power-operated
38	......Electric motor
39	.......2-step
40	......Fluid motor
41	.......2-step
42	....Horizontally
43	....Vertically
44	.Roller presser
45	..With reciprocable element
46	...Reciprocable roll
47	...Reciprocable bed
48	..Four or more coplanar axes
49	..With plural cooperating rolls
50	...One aproned roll
51	...One textile-carrying roll
52	..With single cooperating pressing roll
53	...Textile-carrying roll
54	..With plural cooperating pressing beds
55	...Plural roller pressers
56	..With single cooperating pressing bed
57	...Plural roller pressers
58	...Roller translated
59	....Power translation
60	...Bed translated
61	....Power translation
62	..Textile roll
63	.Elements
64	..Work supports
66	..Platens or beds and covers
67	..Strippers
68	..Aprons
69	SMOOTHING IMPLEMENTS
70	.Smoothing and stretching devices
71	.Platen presses
72	..Stacked platens
73	.Wrapping devices
74	.Flatirons
75	..Combined
76	...With roller-presser element
77.1	...With moistening means
77.2	....Including gauge or inspection window for liquid
77.3	....Separable from iron
77.4	....Including handle pivotal for filling
77.5	....Steam and spray
77.6	....Connectable to remote source
77.7	....Including means to regulate steam generation
77.8	....Including reservoir for liquid in steam iron
77.81	.....Including means to increase pressure in or to vent reservoir
77.82	.....Baffled or compartmented
77.83	.....Additional chamber for generating steam (e.g., flash chamber)
77.9	....Steam-handling means
79	...With support
80	..Reversible pressing surfaces
81	..Detachable pressing surface
82	..Heating
83	...Additive hot solid
84	...Hot fluid
85	....Steam
86	...Fuel
87	....Solid
88	..Body structure
89	...Heat insulation
90	..Handles
91	...Detachable handle and shell
92	...Detachable handle
93	..Sole surface
94	..Attachments
95	...Hand shields and grips
96	...Supports
97	...Shoes
98	...Weight increasers
99	.Stationary nonplanar pressing surface
100	.Roller
101	..Opposed rolls
102	.Stretchers
102.1	..Cloth-stretcher frame
102.2	...Cooperating frames, e.g., embroidery hoop
102.3	...Frame with movable intermediate member
102.4	...Adjustable frame
102.5	....Longitudinally and transversely extensible
102.6	.....Pin and slot combination at crossing of frame members
102.7	.....Clamp at crossing of frame members
102.8	.....Telescoping or longitudinally overlapping sections
102.9	...Collapsible
102.91	...With fabric-fastening elements
103	IRONING TABLES
104	.Combined
106	..With rack
107	..With flatiron support
108	..With clamp or stretcher
109	...And neckband shaper
110	..With neckband shaper
111	..With fabric support
112	.Convertible
135	.Plural pressing surfaces
136	..Invertible boards
137	.Single pressing surface
138	..Sectional boards
139	...Hinged boards
140	.Covers or cover-securing means
141	ACCESSORIES
142	.Flatiron stands, combined

	ACCESSORIES
143	.Sheet shake out or spreader devices
144	PRESSING OR SMOOTHING PROCESSES
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
	DIGESTS
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
DIG 1	Paired leg (boards)
DIG 2	Leg structure
DIG 3	Leg latch

200	LICENSE PLATES
201	.With theft-preventive feature
202	..Of plate only
203	...With destruction of plate on removal
204	.Illuminated
205	..With translucent plate
206	...Plural or sectional
207	.Year tabs
208	.With reflecting means
209	.With framing means
210	.With additional signs
211	.Rotatable
212	AEROSTATIC DEVICES
213	.Skywriting
214	.Captive
215	.Towed
216	.Pamphlet distribution
217	.Ground indicia
218	FLAG-WAVING DEVICES
219	TRANSLUCENT MIRRORS WITH INDICIA
1	EXHIBITORS
1.5	BADGES
1.6	.Changeable reading
124.1	DISPLAY CARDS
124.5	MEMORIAL TABLETS
299	CHECK, LABEL, OR TAG
300	.Animal markers
301	..Ear or wing tags
302	...Clasp or overedge type
303	..Harness-supported
304	..Leg bands
305	.Bale-carried indicia
306	.Barrel-, can- or round box-carried indicia
307	..Lid-supported
308	.Basket-carried indicia
309	.Bolt- or roll-carried indicia
310	.Bottle-carried indicia
311	..Cap- or cork-attached
312	.Box-carried indicia
313	..With lid-supporting means
314	.Brush- or comb-carried indicia
315	.Button-carried indicia
316	.Cable-carried indicia
317	.Cane- or umbrella-carried indicia
318	.Car hand strap-carried indicia
319	.Cash register-carried indicia
320	.Chair- or seat-carried indicia
321	.Cigar- or cigarette-carried indicia
322	.Coat hanger-carried indicia
323	.Coin holder-carried indicia
324	.Cup-, saucer-, plate- or tray-carried indicia
325	.Drawer pull-carried indicia
326	.Fluid-carried indicia
327	.Game ball-carried indicia
328	.Hand stamp-carried indicia
329	.Hat-carried indicia
330	.Key-carried indicia
331	.Knob-carried indicia
332	..Taps or cocks
333	.Parking meter-carried indicia
334	.Pen- or pencil-carried indicia
335	..Calendar indicia
336	.Phone-carried indicia
337	..Dial-associated
338	..Mouthpiece-associated
339	..Upright phone standard-associated
340	.Phonograph record-carried indicia
359	.Folder-carried indicia
360	.Sheet-carried indicia
625	.Permanent identification device
626	..Having transparent member
627	...And illuminator
628	..Secured, attached or associated by shaping
629	...Incorporated within article by shaping operation
630	..Secured, attached or associated by adhesive
631	..Secured, attached, or associated by threaded member
632	..Strip or wire formed
633	.Identification bracelet
5	.Changeable reading
6	..Baggage checks
27	.Reinforced
27.5	.Coin or token type
634	.Key identification
635	.For use with cake of soap
636	.For attachment to shoe
637	.Food-carried indicia
638	.Adhesive-backed label (e.g., postage or revenue stamp)
639	.Carried by finger ring
640	.Carried by belt or buckle
641	.Index tabs
642	.Holder
643	..For use with automobile
644	...Flexible holder
645	..For holding plant marker
646	..For mounting at or near cornice
647	..Having hinged clamp
648	...And projecting spur
649	..Item slid into holder during installation
650	...Adapted to impart curve to card
651	...With fastener
652	....Spring biased clamp
653	...Having locking detent
654	....Permitting limited movement
655	..Having lock
656	...Adapted for use with mine equipment or personnel
657	..Board or rack holding plurality of items
658	..Clip-type holder
659	...Holder made of wire
660	..Tubular
661	..Transparent
662	.Fastener
663	..Fastener mounted in support hole
664	..Penetrating fastener looped through tag
665	..Band-type fastener
666	..Clip-type fastener
667	..Fastener having spring hook
668	..Fastener having head or barb
669	..Tag having fastening spur
670	...For use with tobacco
358	ON CLERICAL DESK ARTICLE
107	CALENDARS
109	.Charactered slide
110	.Character markers
111	.Rotatable
112	..Clutch take-up
113	..Disk
114	..Single axis
115	...Disk
116	.Single reel and web
117	.Double reel and web
118	.Endless
119	.Hinged leaves
121	.Tear-off tablets
122	.Card pockets
120	.Stands
341	COPYHOLDER
342	.Including copy-advancing means
343	..Motor-operated
344	..Orbital surface means
345	...Rotary pinch pair
346	....Including cyclical actuator
347	..Double reel and web
348	..Including holding means for lead end of copy
349	..Elevatable copy

COPYHOLDER
.Including copy-advancing means
..Elevatable copy
350 ...By clutch-actuated bar
351 ...By flexible elongated member
352 .Including movable indicator (e.g., line guide)
353 ..Mechanically actuated
354 ...By rack and pinion or pawl
355 ...By clutch
356 ...By means including flexible elongated member
357 ..Pivoted indicator
361 PHOTOGRAPHIC TRANSPARENCY VIEWER, E.G., X-RAY VIEWER
362 .Hand held slide viewer
363 ..With external light source (e.g., with translucent window opposite viewing lens)
364 ...Strip film viewer
365 ...Folding or collapsible film viewer
366 .Portable slide viewer
367 ..With internal light source
368 STATION INDICATOR
369 .Post mounted
370 .Railroad car mounted
371 REGISTER, OR FILE (E.G., TELEPHONE DIRECTORY FILE)
372 .With means to separate or riffle file item (e.g., magnet)
373 .Interchangeable file item
374 ..Sliding item
375 .Sliding panel
376 .Pivoted panel
377 .Rotatable carrier for file
378 ..With means to select
379 ..With rod or channel for retaining file item
380 .Shiftable file item or file item support (non-sliding, arcuate path)
381 ..With shift mechanism
382 ..Overlaying
383 ..Depository with positioning channel or retention means (e.g., rod)
384 ..Plural index
385 .Reel and web
386 ..Reversing gears
387 ..Intergeared reels
388 .Hinge mounted file item or file item support
389 ..With means to pivot
390 ..Hinged on single axis
391 ..Overlying with end exposed (i.e., shingled)
392 ...With stop or follower
393 ...Plural index
394 ...Hinge element cooperating with base
395 ....Releasably attached to file item
396 .....Cooperating with sheet fold
397 ....Extended hinge
398 ...Hinge cooperating with outwardly directed flanges of base
399 ...File item hinges to adjacent file item
400 ...Hinge cooperating with aperture in base
401 ...Secured by means through aperture or notch or engaging a protrusion in the file item
402 ....Opposed prongs cooperating with aperture
403 ..Hinge cooperating with aperture or channel in base
404 ..Secured by means engaging aperture in file item or file item support
405 ..File item secured to carrier by aperture or pocket
406 DISPLAY DEVICE WITH GAS OR LIQUID MOVEMENT
407 .With dispersion of fluid medium
408 ..As soap bubble
409 DISPLAY DEVICE WITH FREE ARTICLE MOVEMENT
410 .Snowfall simulator
411 THREE-DIMENSIONAL MOVABLE FIGURE DISPLAY DEVICE
412 .Fluid operated
413 ..Automobile hood ornament
414 .Electromotor operated
415 .With translation of figure
416 .With eye or lip movement
417 .With wing movement
418 .With arm and leg movement
419 .With arm movement
420 .With leg movement
421 TWO-DIMENSIONAL MOVABLE FIGURE DISPLAY DEVICE
422 .Fluid operated
423 .Electromotor operated
424 .Operated by vibration of vehicle
425 ..With eye or lip movement
426 DISPLAY DEVICE WITH MAGNETICALLY MOVED OBJECT
427 DISPLAY WITH SPECIAL EFFECTS
428 .Simulated fireplace
429 .Electromotor operated
430 ..Rotatable
431 ...Illuminated
432 ....Rotating lamp
433 ....Disk
434 .....Polarized
435 ...Disk
436 ..Movable screen
437 ...Grid or artwork
438 ...Moving belt
439 .Fluid operated
440 ..Rotatable
441 ...Illuminated
442 .Selective or intermittent illumination
443 ..Alternate front and rear illumination
444 ..Colored lights
445 .Movable card
446 CHANGING EXHIBITOR
447 .Alphanumeric (monogram) device
448 ..Liquid crystal
449 ..Magnetic
450 ..Bar segment, e.g., figure eight
451 ...Illuminated
452 ..Illuminated
453 .Variable reading stationary exhibitor
454 ..Lenticular lens
455 .With sound
456 ..Exhibitor (e.g., toy doll) rotated or operated by turntable or phonograph
457 ..Exhibitor controlled by sound circuit
458 .Scale operated
459 .Door operated
460 .Door latch operated
461 .Cigar cutter or lighter operated
462 .Train-order holder
463 .With electric circuit control
464 ..Mechanical switch
465 ..Photoelectric and capacity switching
466 ..Electromotor operated
467 ...Web advancing means in combination with sensing or selector means
468 ..Magnetoclutch let off
469 ..Magnetoclutch take-up
470 .Motor operated
471 ..Double reel and web
472 ..Endless web
473 ..Rotatable
474 ...Disk
475 ...Hinged leaves
476 ..Shifter

	CHANGING EXHIBITOR
477	.Fluid operated
478	..Double reel and web
479	..Rotatable
480	...Illuminated
481	.Pedal operated
482	.Axle operated
483	..Double reel and web
484	..Rotatable
485	.Pendulum operated
486	.Inscription cover
487	..Movable curtain
488	..Sliding
489	.Interchangeable plate
490	..Sliding
491	.Sliding plate
492	.Pivoted plate
493	.Rotatable carrier for display item
494	..Including encircling retention rod for display item
495	..Disk-like
496	...Clutch take-up
497	..Hinged display item
498	...Clutch take-up
499	...Flaccid type
500	...Sequential exposure of display item
501	..Radially movable display item
502	..Illuminated
503	..Plural cylindrical or polygonal rotatable carrier
504	...Biaxial
505	....Carrier with common positive drive
506	..Cylinder or polygonal carrier
507	...Clutch take-up
508	.Shiftable display item or item support
509	..Including shift mechanism
510	...For random selection of item from group thereof
511	...Having continuous cycle of item or item support
512	....Endless carrier type
513	..Reciprocating
514	.Single reel and web
515	..Reel cabinet
516	...Revolving
517	..Spring rewind
518	.Double reel and web
519	..Cluth take-up
520	..Spring rewind
521	...With clutch
522	..Reversing gear
523	...Clutch take-up
524	.Endless conveyor
525	..Driven by frictional contact
526	..Hinged leave
527	..Radial leave
528	..Clutch take-up
529	.Folding web and reel
530	.Hinge mounted display item or item support
531	..With means to rotate
532	...With means to select
533	..Display item hinged on single axis
534	..Overlaying
535	..Hinge cooperating with aperture or channel in base
536	..Secured by means engaging aperture in item or item support
537	..Item secured to carrier by aperture or pocket
538	DUMMY SIGN
539	.Folding display
540	.Illuminated
541	ILLUMINATED SIGN
542	.Luminescent
543	..Ultraviolet source
544	..Electroluminescent
545	.Gas filled tube
546	.Edge illuminated
547	..Fiber optic, i.e., light pipe
548	.Polarized
549	.Extruded frame
550	.Light bulbs arranged in the outline of indicia
551	..Mounted on three-dimensional alphanumeric structure
552	.Three-dimensional alphanumeric structure
553	.Having multiple function (i.e., illumination per se)
554	..Lamp shade attached
555	..Flashlight attached
556	..Vehicle light
557	..Streetlight
558	..Elongated tubular light
559	.External light source
560	..Projected
561	..Concentration of natural light
562	...With auxilliary light source
563	.Indirect
564	.Lamp box
565	..Pavement embedded
566	..Mailbox receptacle
567	..Trash receptacle
568	..Directory, e.g., building type
569	...Map type
570	..Exit
571	..Collapsible
572	..Double face
573	..Compartmented
574	..Detachable or hinged cover
575	..Interchangeable plate
576	...Interchangeable letters or numbers
577	..Multiple spaced screen
578	..Light or weather seal
579	..Perforated face
580	...Stencil screen
581	.Colored light
582	.Reflective
583	..Reflectors arranged in the outline of indicia
584	SIGNS
585	.Directory
586	.Person carried
587	.Tire or wheel
588	.Tanker truck or car carried, reversible type
589	.Streetcar carried
590	.Trailer, wagon or cycle carried
591	.Automotive vehicle carried
592	..Roof mounted
593	..Interior mounted
594	.Adhesive attaching feature
595	..Lettering kit
596	.Three-dimensional letter
597	.Suction cup mounting means
598	.Football line or down marker
599	.Door handle bar attached
600	.Magnetic attaching feature
601	.With raising or lowering means
602	.With wind spilling feature
603	.Stretched or tensioned
604	..Banner type
605	.Modular
606	.Sign stand and support
607	..Post attachment
608	...Self righting post
609	..Pump top
610	..Collapsible
611	.Removable panel or sheet
612	.Highway or street marker
613	.Vibratory
614	..Motor operated
615	.Multiple layer
616	.Embossed, molded, rolled or stamped
617	.Hanging

	SIGNS
618	.Interchangeable
619	..Glass
620	..Fastener
621	...Magnetic
622	...Prong
623	...String
624	.Billboard type
124	CARD RACK
124.2	.Including pockets
124.4	.Including apertures, notch or struck-out portions
152	PICTURE FRAMES
152.1	.With supports
152.2	..Illuminated
153	.Cord or wire
154	.Embossed, molded, rolled, or stamped
155	.Extensible, folding, or knockdown
156	.Card or picture retainers
157	.Cover retainers
158.1	.Mat, mount, or back
159	..Pocketed
159.1	..Corner piece
159.2	..Film mount
160	.Relief picture
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	MIRROR THAT HAS CHANGING EFFECT
901	TV/RADIO PROGRAM INDICATOR
902	CIRCUIT CONTROL (FLASHING LIGHT, ETC.)
903	REFLECTIVE TRIANGLE FOR HIGHWAY USE
904	MAP OR CHART HOLDER
905	PEN AND PENCIL
906	SOUND
907	OUT-TO-LUNCH
908	ANIMAL OR FUR SKIN IDENTIFICATION
909	STORAGE BATTERY IDENTIFICATION
910	AUTOMOBILE LICENSE IDENTIFICATION
911	AUTOMOBILE BODY IDENTIFICATION
912	AUTOMOBILE MOTOR IDENTIFICATION
913	TOOL IDENTIFICATION
914	NUCLEAR FUEL ELEMENT IDENTIFICATION
915	GOLF CLUB IDENTIFICATION

CLASS 42 FIREARMS

1.01	INDICATORS
1.02	.Magazine shot
1.03	.Single shot, e.g., digital type
1.04	.hammer position
1.05	.Chamber status
1.06	WITH RECOIL REDUCER
1.07	WITH ADJUSTABLE HEAD SPACE
1.08	FOR DISCHARGING A STUNNING AGENT
1.09	DISGUISED AS BODY ARTICLE
1.11	BODY BORNE REMOTE OPERATED
1.12	CATTLE SLAUGHTER TYPE
1.13	TRIP, TRAP OR BURGLARY PREVENTION
1.14	UNDERWATER TYPE
1.15	FLARE TYPE GUN
1.16	BILLY CLUB TYPE
52	CANE GUNS
53	PISTOL SWORDS
54	TOY
57	.Ribbon fed
58	.Revolvers
55	.Cannon
2	BREECH LOADING
5	.Spring-motor operated
8	.Breech hinged barrel
9	.Faucet breechblock
10	.Forward-sliding barrel
11	..Magazine
12	.Side swinging barrel
13	..Parallel pivot
14	.Sliding breechblock
15	..Movable chamber
16	..Rearward
17	...Magazine
18	....Box
19	....Rotary
20	...Pivoted hammer
21	....Magazine
22	.....Box
25	...Extractors
23	..Vertical mortise
24	...Magazine
26	.Swinging breechblock
27	..Movable chamber
28	..Downward and rearward
29	...Magazine
30	..Laterally forward
31	..Laterally rearward
32	..Parallel pivot
33	...Magazine
34	..Rearward and downward
35	...Magazine
36	..Upward and forward
37	...Magazine
38	..Upward and rearward
39	...Magazine
39.5	.Movable chamber
40	.Upward-tilting breech
41	..Firing mechanism
42.01	...With single actuator
42.02	....Plural triggers
42.03	....Single trigger and hammer
43	...Cocking devices
44	..Barrel locks
45	...Hammer cocking
46	..Extractors
47	..Ejectors
48	...Hammer
7	.Grip magazine pistols
6	.Magazine guns
49.01	.Magazines
49.02	..Adapters or capacity reducers
50	..Box
51	MUZZLE LOADERS
59	REVOLVERS
60	.Magazine-fed cylinder
61	.Cylinder loaded from muzzle end
62	.Swinging cylinder
63	.Hinged barrel
64	..Barrel catches
65	.Firing mechanism
66	..Safety devices
67	..Cylinder stops
68	.Shell extractors
69.01	FIRING MECHANISM
69.02	.Rearward sliding breech bolt
69.03	..With pivoted hammer
70.01	SAFETY MECHANISM
70.02	.Magazine operated
70.03	.Shoulder operated
70.04	.Sear trigger lock
70.05	.Sear lock
70.06	.Trigger lock
70.07	.On trigger guard
70.08	.Hammer or firing pin
70.09	.Responsive to particular firing angle
70.11	.Firearm lock
71.01	STOCKS
71.02	.For pistols
72	.Auxiliary
73	.Adjustable
74	.Cushioned
75.01	STOCK OR BARREL CONNECTORS
75.02	.Barrel to receiver
75.03	.Receiver to stock
75.04	.Hinged or pivoted barrel
76.01	BARRELS
76.02	.Materials or coatings
77	.Auxiliary
78	.Rifling
79	.Choke devices
83	NIPPLES AND GUARDS
84	ELECTRIC APPLIANCES
85	GUN TRIMMINGS
86	BAYONETS
87	MAGAZINE CHARGERS
88	.Packs
89	..Revolver
90	IMPLEMENTS
93	.Intrenching
94	.Rests
95	.For barrel cleaning
96	.Firearm protectors
97	.Weights and balances
98	.Shell catchers
99	.Magnetic holding devices
100	.Sight devices
101	..Telescopic
102	..Ventilated sight
103	..Including lights
104	.Finger recoil pad
105	.For launching grenades
106	MISCELLANEOUS

****

DIGEST

****

DIG 1 Release trigger

CLASS 43 FISHING, TRAPPING AND VERMIN DESTROYING

DECEMBER 1990

1	MISCELLANEOUS
2	DECOYS
3	.Duck
4	FISHING
4.5	.Methods of fishing
5	.Fish landing devices combined with tackle, e.g., gaffs, grapples
6	.Harpoons and spears
6.5	.Gathering or catching device with conveyer to boat
7	.Nets
8	..Handling apparatus
9.1	..Trawl
9.2	...Having excluder device
9.3	...Having limiting or limit indicating feature
9.4	...Bottom running sled
9.5	...Bottom running roll
9.6	...Utilizing electrical shock to control fish or aquatic animal
9.7	...Having specific flow affected board device for holding net mouth open, e.g., an otterboard, etc.
9.8	...Having specific line element
9.9	...Having specific chafe preventing element
9.95	...Fabric construction
10	..Gill
11	..Dip
12	...Foldable
13	..Fish wheels
14	..Seines
15	.Automatic hookers or catchers
16	..Signaling
17	.Signal devices
17.1	.Electric current or sonic wave energy
17.2	.Releasing devices
17.5	.Illuminated, e.g., luminous
17.6	..Artificial bait
18.1	.Rod
19	..With line propelling or trajecting means
19.2	..With nonreeling motion means for rod and line, or line
20	..Reel section
21	...Motor operated
21.2	..Holders, supports, steadying devices
22	..Reel mounts
23	..Butts
24	..Line guides or tips
25	..Attachments
25.2	...Hook and tackle holders
26	..Cases
18.5	..Fiber glass or graphite fishing rod
26.1	.Motor-operated
26.2	..Artificial bait
27.2	.Trolley apparatus
27.4	.Fixed support line handling means, e.g., trawls
34	.Trap hooks
35	..Artificial bait
36	..Expanding
37	..Pull-actuated
41	.Enclosed or protected
41.2	..Casting guards
42	.Artificial bait
42.02	..Line surge action with biased reaction
42.03	..Automatically movable directing vane
42.04	..Shiftable on strike
42.05	...Lure slidable on line
42.06	..Substance emitting and/or water passage
42.08	..Interlocked hook lure and line connections
42.09	..Interchangeable body parts
42.1	..Flexible body's housing or guarding hook
42.11	..Plural lures and movably connected rigid lure members
42.12	...One member within the other, at least one spinning
42.13	...Plural movable members offset or at sides of body
42.14	...Plural rotating members
42.15	...Movably connected in series
42.16	....One member rotating
42.17	.....Sheet material member preceding and rotating
42.18	....Sheet material
42.19	..Spinner rotatably mounted on shaft
42.2	...Spiral or oppositely turned vanes
42.21	....Plug or minnow type
42.22	..Adjustable direction or buoyancy control
42.23	...Selective or shiftable lure to line connection
42.24	..Flexible or with flexible appendages, e.g., worms
42.25	...Feathers, strands, fibers, etc., only, e.g., flies
42.26	...Bodies with plural side-attached appendages
42.27	....Wing simulations
42.28	...Bodies with trailing appendages
42.29	....Detachable bait strip
42.3	....Two rearwardly directed appendages, e.g., frogs
42.31	..With confined shifting material and/or sound making
42.32	..Ornament
42.33	...Transparent, with reflector or pattern
42.34	...Projections and indentations for simulation and reflecting
42.35	..Hollow bodies
42.36	..Hook and line connection extending through or along body
42.37	..Mounted on hook
42.38	...Detachable
42.39	..Weighted
42.4	..With guards
42.41	...Hook housed or guarded by body
42.42	...Guards downwardly projecting
42.43	...Hook closing
42.44	..Hook pivoted to lure with motion-limiting means
42.45	..Solid bodies
42.46	...With spiral or vanes for spinning
42.47	...With sheet material vane
42.48	...Plugs
42.49	..Special line attachments
42.5	..Spoon type
42.51	...With spiral or oppositely directed vanes
42.52	...Nonmarginal and/or nonpivoted hook attachments
42.53	..Methods of making
42.7	.Snagging and shellfish rigs, e.g., jiggers
42.72	.With line shock absorber or resilient extension feature
42.74	.Spreaders or separators for plural lines and/or hooks
43.1	.Line-attached bodies, hooks and rigs
43.11	..Line storing
43.12	..Releasable from line, e.g., casting weights
43.13	..Line-guiding or twist-controlling, e.g., trolling vanes, otters
43.14	..With adjustable weight or buoyancy
43.15	..Plural diverse-type bodies
43.16	..Hooks
43.2	...Guards, e.g., weedless hooks
43.4	....Shiftable, collapsible, or line-operated

	FISHING
	.Line-attached bodies, hooks and rigs
	..Hooks
	...Guards, e.g., weedless hooks
43.6	....Hook closing
44.2	...Bait holders and retainers
44.4	....Bait encircling
44.6	....Opposed gripping jaws
44.8	....Mounted on, integral with, or rigidly connected to hook
44.81	...Weighted
44.82	...With plural piercing points
44.83	...With leaders and/or line-connection feature
44.84	....Branch or lateral line type
44.85	.....Adjustable along line
44.86	....With check or collect ring keeper
44.87	..Selectively free sliding or fixed on line
44.88	...Line strain or motion actuated, e.g., strike or pole tip released
44.89	..Bendable or deformable material for line connection, e.g., split shot
44.9	..With line passing through center of body
44.91	...With line-gripping means
44.92	..With relatively movable parts and/or resilient construction for attachment to line
44.93	...Movable wedge or collect ring type
44.94	...Spiral or pigtail line holder wrapped around stem
44.95	...Resiliently biased or elastic line clamping means
44.96	..Sinkers with ground-engaging means, e.g., trolley or surf anchors
44.97	..Sinkers with guards or retrieving features
44.98	.Lines and/or leaders
44.99	.Bait distributors, e.g., chumming devices
53.5	.Disgorgers and gags
54.1	.Holder
55	..Catch and natural bait
56	..Minnow buckets
57	...Aerating pump
57.1	..Hook
57.2	...Holder for snelled hook under tension
57.3	..Trotline holder
58	TRAPS
59	.Burglar
60	.Imprisoning
61	..Swinging or sliding closure
62	..Falling encaging member
63	..Jaw cage type
64	.Self and ever set
65	..Nonreturn entrance
66	...Victim-opened
67	...Victim-closed
68	..Sinking compartment
69	..Tiltable platform
70	...Trigger-released
71	..Rotatable platform
72	...Trigger-released
73	.Self-reset
74	..Rotating door or platform
75	..Smiting
76	.Victim-reset
77	.Impaling or smiting
78	..Rectilinear striker movement
79	...Impaling
80	....Burrow type
81	..Swinging striker
81.5	...Auxiliary striker holder
82	...Direct engaging latch
83	....Automatic catch
83.5	...Automatic set
84	.Explosive
85	.Choking or squeezing
86	..Movable loops
87	..Constricting noose
88	.Jaw
89	..Suspended
90	..Modified jaw
91	...Parallel oscillating
92	..Modified trigger mechanism
93	...Direct engagement
94	....Wedge or toggle
95	...Automatic catch
96	..Attachments
97	...Setting
98	.Electrocuting
99	..Body-removing or concealing
100	.Fish
101	..Weirs
102	..Elevatable cage
103	..Portable or floating
104	...Towable
105	..Foldable or collapsible
106	..Porpoise
107	.Insect
108	..Tree trunk
109	..Furniture
110	..Operator-controlled
111	..Mechanically operated
112	..Electrocuting
113	..Illuminated
114	..Adhesive
115	...Flypaper holders
116	...Flexible with drawable section
117	...Upright perch slidable receptacle
118	..Reticulate fabric
119	..Window screen or door
120	..Garbage can
121	..Crawling insect type
122	..Fly vases
123	..Bedbug type
124	VERMIN DESTROYING
125	.Fumigators
126	..Tree apparatus
127	..Smokers
128	...Bee type
129	..Vaporizers
130	...Steam
131	.Poison holders
132.1	.Insect
133	..Catchers
134	...Implements
135	....Spring-operated
136	....Adhesive
137	....Swatters
138	...Machines
139	....Suction
140	.....Traveling
141	....Blast
142	....Rotated agitator
143	....Oscillated agitator
144	..Burners
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	CROSS-REFERENCE ART COLLECTION
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900	LIQUID INSECTICIDE SPRAYER

250 FLAMELESS OR GLOWLESS
251 .Activatable by or containing water
252 ..Free metal-containing
253 ...With organic or second elemental material
265 SOLIDIFIED LIQUID (E.G., GEL, ETC.)
266 .Liquid alkanol base
267 ..With carbohydrate (e.g., cellulose compound, cotton, etc.)
268 .Liquid hydrocarbon base (e.g., gasoline, etc.)
269 ..With plant derivative of unknown composition (except rosin or rosin derivatives) or carbohydrate
270 ..With organic nitrogen compound
271 ..With organic polymer polymerized through olefinic or acetylenic bond (e.g., methacrylate polymers, polypropylene, etc.)
272 ..With organic -C(=X)X- compound, wherein the X's are the same or diverse chalcogens (e.g., aluminum carboxylates, rosin salts, etc.)
275 CANDLE COMPOSITION
280 SOLID CARBONACEOUS FUEL DISPERSED IN A LIQUID MEDIUM (E.G., DISPERSED COAL, COKE, CARBON POWDER, PEAT, ETC.)
281 .The liquid medium is, or contains, hydrocarbon
282 ..Liquid hydrocarbon, or liquid hydrocarbon and water, are the only components
300 LIQUID FUELS (EXCLUDING FUELS THAT ARE EXCLUSIVELY MIXTURES OF LIQUID HYDROCARBONS)
301 .Emulsion fuel (e.g., water-gasoline emulsions, etc.)
302 ..Alkanol component
303 .Oxo still bottoms containing (i.e., distillation residues from reaction product of carbon monoxide, hydrogen, and olefin)
304 .Organic compound of indeterminate structure which is a reaction product of an organic compound with sulfur halide or elemental sulfur containing
305 .Phosphosulfurized or phosphooxidized organic compound of indeterminate structure containing (i.e., reaction products of organic compounds with phosphorus sulfides or oxides)
306 .Rosin, tall oil, or derivatives thereof containing (except abietic acids or fatty acids derived therefrom)
307 .Plant or animal extract mixtures or extracts of indeterminate structure containing
308 ..Containig triglycerides (e.g., castor oil, corn oil, olive oil, lard, etc.)
309 .Organic oxidate of indeterminate composition containing (e.g., paraffin wax oxidate or petroleum oxidate, etc.)
310 ..Chemically reacted organic oxidate (e.g., esterified, etc.)
311 .Sludge, pitch, tar, or tar distillate containing
312 .Quinone or anthraquinone containing (e.g., quinhydrone, benzoquinones, etc.)
313 .Carbohydrate containing
314 .Boron containing
315 ..Phosphorus attached directly or indirectly to the boron
316 ..Three carbons or three fluorines bonded directly to the boron
317 ..Nitrogen attached directly or indirectly to the boron
318 ..Three identical or diverse chalcogens bonded directly to the boron
319 ...Carbon, chalcogen, and boron in the same ring
320 .Silicon containing
321 .Free metal or alloy containing
322 .Containing acyclic oxygen single bonded to acyclic oxygen (i.e., peroxy compounds)
323 .Containing -X-N(=X) or -X-N(=X)(=X) bonded directly to carbon, wherein the X's are the same or diverse chalcogens (e.g., thionitrite esters, etc.)
324 ..Nitrates or Thionitrates (i.e., -X-N(=O)(=O) bonded directly to carbon)
325 ...With organic non-nitrate nitrogen compound
326 ...With organic non-nitrate chalcogen compound
327 .Organic azide compound, or organic compound having acyclic nitrogen double bonded to acyclic nitrogen (e.g., diazo compounds, etc.)
328 ..Azo compound (i.e., each of the nitrogens is single bonded to carbon)
329 .Heterocyclic carbon compound containing a hetero ring having chalcogen or nitrogen as the only ring hetero atoms
330 ..Compound of indeterminate structure prepared by reacting a heterocyclic compound of known structure
331 ...The heterocyclic compound reactant is a dicarboxylic acid anhydride (e.g., reaction product of succinic anhydride with a polyamine, etc.)
332 ...The heterocyclic compound reactant is an oxirane (e.g., reaction product of epihalohydrin with amine, epoxide reactions, etc.)
333 ..The hetero ring contains six members including nitrogen and carbon
334 ...Chalcogen in the hetero ring
335 ...Plural nitrogens in the hetero ring (e.g., piperazines, etc.)
336 ....Triazine or 1,3-diazine
337 ...Polymer or copolymer of a vinyl pyridine
338 ...Acyclic chalcogen or acyclic nitrogen bonded directly to ring carbon of the hetero ring
339 ...The hetero ring is unsubstituted or hydrocarbyl substituted only, or salts thereof (e.g., pyridyl salicylate salts, isoquinoline, etc.)
340 ..The hetero ring contains five members including nitrogen and carbon (e.g., pyrrolidones, porphines, etc.)
341 ...Chalcogen in the hetero ring
342 ...Plural nitrogens in the hetero ring (e.g., imidazolines, etc.)
343 ....At least three nitrogens in the hetero ring (e.g., triazoles, tetrazoles, etc.)
344 ....Having -C(=X)-, wherein X is chalcogen or NH, attached indirectly to the hetero ring by nonionic bonding
345 ....Carboxylic acid salt of the hetero ring compound, or a free carboxylic acid is present

LIQUID FUELS (EXCLUDING FUELS THAT ARE EXCLUSIVELY MIXTURES OF LIQUID HYDROCARBONS)
.Heterocyclic carbon compound containing a hetero ring having chalcogen or nitrogen as the only ring hetero atoms
..The hetero ring contains five members including nitrogen and carbon (e.g., pyrrolidones, porphines, etc.)
346 ...Polymeric or copolymeric compound having plural occurrences of the hetero ring (e.g., alpha-olefin maleimide copolymers, etc.)
347 ...Acyclic chalcogen bonded directly to each carbon adjacent to the ring nitrogen (e.g., succinimides, etc.)
348 ....Substituent on the ring nitrogen contains an acyclic -C(=X)- group, wherein X is chalcogen
349 ..The hetero ring contains six members including carbon and chalcogen (e.g., six-membered sorbitans, ketone peroxides, etc.)
350 ..The hetero ring contains five members including carbon and chalcogen
351 ...Acyclic chalcogen bonded directly to ring carbon of the hetero ring (e.g., five-membered lactones, anhydrides, sorbitans, etc.)
352 ...Ring carbons of the hetero ring are unsubstituted or hydrocarbyl substituted only
353 ..The hetero ring contains three or four members
354 .Aluminum or heavy metal, other than lead, containing
355 ..Inorganic metal carbonyl compound (e.g., iron carbonyl, etc.)
356 ...With organic -C(=O)O- containing compound (e.g., carboxylic acids, esters, etc.)
357 ..Inorganic compound of Zr, Cr, Cu, Zn, or Ni
358 ..Organic compound containing the heavy metal or aluminum
359 ...Metal carbonyl compound (e.g., cyclopentadienyl manganese tricarbonyl, etc.)
360 ....Substituted or unsubstituted cyclopentadienyl manganese tricarbonyl, with an organic compound having -C(=O)O- not bonded to heavy metal or aluminum
361 ...Five-membered, unsaturated carbocycle bonded directly to the heavy metal or aluminum (e.g., ferrocene, etc.)
362 ...Heavy metal or aluminum complex of compounds having two -C(=X)- groups, wherein X is chalcogen, bonded to the same carbon, or enols thereof (e.g., iron acetylacetonate, etc.)
363 ...Heavy metal or aluminum carboxylate salt or complex
364 ....The heavy metal is Cr, Zr, or a lanthanide
365 ...Heavy metal or aluminum sulfonate salt or complex
366 ...Heavy metal or aluminum salt of organic phosphorus acid
367 ...Nitrogen bonded directly or indirectly to the heavy metal or aluminum
368 ...Organic compound containing arsenic, antimony, or bismuth
369 .Containing -O-S(=O)(=O)O- or -O-S(=O)O- attached directly or indirectly to carbon by nonionic bonding (e.g., sulfate esters, sulfite esters, etc.)
370 .Containing organic -S(=O)(=O)O- compound (i.e., sulfonates)
371 ..Nitrogen or -C(=X)-, wherein X is chalcogen, attached indirectly to the sulfonate group by nonionic bonding
372 ..Hydrazine or organic nitrogen compound salts of sulfonic acids
373 ..Overbased sulfonate or carbonated alkaline earth metal sulfonate
374 ..With organic -C(=O)O- compound (e.g., carboxylic acids, esters, etc.)
375 .Containing compound having phosphorus bonded directly to chalcogen and directly or indirectly to carbon by nonionic bonding (e.g., alkyl acid phosphates, etc.)
376 ..Nitrogen attached to the phosphorus directly or indirectly by acyclic nonionic bonding
377 ...Lecithin or indeterminate structure reaction product thereof
378 ..Carbon bonded directly to the phosphorus
379 ..Chalcogen or halogen attached indirectly to the phosphorus by acyclic nonionic bonding
380 ..Organic nitrogen compound salt of organic phosphorus acids
381 ...Chalcogen or additional nitrogen in the organic nitrogen compound
382 ..Phosphorus triester
383 .Containing organic -C(=X)X- compound, wherein the X's are the same or diverse chalcogens, with at least one X being sulfur
384 .Organic compound containing -NC or -CN group
385 .Containing organic -C(=O)O- compound (e.g., fatty acids, etc.)
386 ..Compound of indeterminate structure prepared by reacting an organic -C(=O)O- compound
387 ..Nitrogen or oxygen bonded directly to the carbon of the -C(=O)O- group (e.g., carbamic and carbonic compounds, etc.)
388 ..The single bonded oxygen is bonded directly to an additional carbon, which carbon may be single bonded to any element but may be multiple bonded only to carbon (i.e., carboxylic acid esters)
389 ...Plural -C(=O)O- groups attached to each other directly or indirectly by nonionic bonding (e.g., polyesters, half ester-half acid compounds, etc.)
390 ....Halogen or sulfur attached indirectly to the -C(=O)O- by nonionic bonding
391 ....Nitrogen attached indirectly to the -C(=O)O- by nonionic bonding
392 .....Product polymerized through an olefinic double bond
393 ....Copolymer of olefinically unsaturated hydrocarbon monomer and additional monomer (e.g., ethylene-vinyl acetate copolymers, etc.)
394 .....With organic nitrogen compound
395 .....With additional synthetic nonhydrocarbon polymer

LIQUID FUELS (EXCLUDING FUELS THAT ARE EXCLUSIVELY MIXTURES OF LIQUID HYDROCARBONS)
.Containing organic -C(=O)O- compound (e.g., fatty acids, etc.)
..The single bonded oxygen is bonded directly to an additional carbon, which carbon may be single bonded to any element but may be multiple bonded only to carbon (i.e., carboxylic acid esters)
...Plural -C(=O)O- groups attached to each other directly or indirectly by nonionic bonding (e.g., polyesters, half ester-half acid compounds, etc.)
....Copolymer of olefinically unsaturated hydrocarbon monomer and additional monomer (e.g., ethylene-vinyl acetate copolymers, etc.)
396 .....One of the monomers contains a benzene ring (e.g., styrene, etc.)
397 ....Polymer or copolymer of nonhydrocarbon olefinically unsaturated monomers polymerized through an olefinic double bond (e.g., trimer esters, etc.)
398 ....Mono- di-, or polyester of polycarboxylic acids
399 ...Nitrogen attached indirectly to the -C(=O)O- group by nonionic bonding
400 ...Chalcogen or halogen attached indirectly to the -C(=O)O- group by nonionic bonding
401 ...Alkyl ester of formic or alkanoic acids
402 ....With alkanol or dialkyl ether
403 ..Plural -C(=O)O- groups attached to each other directly or indirectly by nonionic bonding
404 ...Carboxylic acid dimer, trimer, or homopolymer
405 ..Nitrogen attached indirectly to the -C(=O)O- group by acyclic nonionic bonding
406 ...The nitrogen is bonded directly to an additional -C(=O)- group
407 ....Plural nitrogens or plural chalcogens attached indirectly to the -C(=O)O- group by acyclic nonionic bonding
408 ..Organic nitrogen compound salt of carboxylic acids
409 ...Plural nitrogens in the organic nitrogen compound (e.g., diamines, aminoamides, guanidines, etc.)
410 ..Nitrogen or chalcogen attached indirectly to the -C(=O)O- group by nonionic bonding
411 ..With alkanol, ketone, or phenol
412 .Organic nitrogen compound containing
413 ..Nitro or nitroso bonded directly to carbon
414 ...The carbon is acyclic or alicyclic
415 ..Compound of indeterminate structure prepared by reacting a phenol, an aldehyde, and ammonia or substituted ammonia
416 ..The nitrogen is single bonded directly to nitrogen
417 ..Plural nitrogens bonded directly to the same -C(=X)- group, wherein X is chalcogen (e.g., ureas, etc.)
418 ..Having -C(=X)- bonded directly to the nitrogen, wherein X is chalcogen
419 ...Additional nitrogen attached indirectly to the -C(=X)- group by acyclic nonionic bonding
420 ..Carbon double bonded to the nitrogen
421 ...Plural nitrogens attached indirectly to each other by acyclic nonionic bonding
422 ..Quaternary ammonium salt or amine oxide
423 ..Chalcogen or phosphorus attached directly to the nitrogen by nonionic bonding
424 ..Benzene ring attached indirectly to the nitrogen by acyclic nonionic bonding
425 ...Additional nitrogen attached indirectly to the nitrogen by acyclic nonionic bonding
426 ..Benzene ring bonded directly to the nitrogen
427 ...Chalcogen attached directly or indirectly to the benzene ring by nonionic bonding
428 ....Acyclic carbon bonded directly to the nitrogen
429 ...The benzene ring is part of a polycyclo ring system
430 ...Plural nitrogens bonded to the same benzene
431 ....Plural rings bonded to the same nitrogen atom
432 ..Plural nitrogens attached indirectly to each other by acyclic nonionic bonding
433 ...Chalcogen attached indirectly to one of the nitrogens by acyclic nonionic bonding
434 ..Chalcogen or halogen attached indirectly to the nitrogen by acyclic nonionic bonding
435 .Sulfur or phosphorus attached directly or indirectly, by nonionic bonding, to carbon of an organic compound
436 .Organic oxygen compound containing (e.g., alicyclic alcohols, hypochlorites, etc.)
437 ..The oxygen is part of a -C(=O)- group
438 ...With alkanol or dialkyl ether
439 ...Acyclic ketone
440 ..Plural benzene rings bonded directly to each other or to the same acyclic carbon
441 ..Oxygen bonded directly to a polycyclo carbocyclic ring system
442 ..Plural oxygens bonded directly to the same monocyclic benzene ring
443 ..Plural oxygens attached indirectly to each other by acyclic nonionic bonding
444 ...Plural oxygens bonded directly to the same acyclic or alicyclic carbon (e.g., acetals, etc.)
445 ...All the oxygens are present as -OH groups (e.g., glycols, triols, etc.)
446 ..Alkanol compound with dialkyl ether compound
447 ..Ether
448 ...Dialkyl ether
449 ....Tertiary carbon bonded directly to the ether oxygen
450 ..Phenol or salt thereof
451 ..Alkanol
452 ...Mixture of alkanols
453 ...Dehydration processes, and products thereof
454 .Lead-containing organic compound
455 ..With inorganic additive

LIQUID FUELS (EXCLUDING FUELS THAT ARE EXCLUSIVELY MIXTURES OF LIQUID HYDROCARBONS)
456 .Halogen bonded directly to carbon
457 .Inorganic component (e.g., carbon dioxide, etc.)
458 ..Nitrogen or sulfur containing (e.g., carbon disulfide, etc.)
459 .Solid hydrocarbon polymer containing
490 PEAT
491 .Briquet
492 .Process including heat
500 PARTICULATE (E.G., POWDERED, ETC.)
501 .Treated to reduce spontaneous ignition
502 .Solid particle containing liquid fuel
503 .Mixed with particles of different size
504 .Mixed with particles of different composition
505 .Process including removal of undesirable
506 COMBINED WITH FRICTION IGNITING MASS OR SURFACE
507 .Hand manipulable (e.g., match, etc.)
508 ..Plural integral (e.g., string, etc.)
509 ...Parallel
510 ..With scratcher
511 MATCH SPLINT OR STICK
512 .Process of making
519 PROVIDED WITH WICK OR FUSE
520 FUEL PRODUCT HAVING PASSAGEWAY FOR GAS
521 .Plural elements, with passageway unobstructed from side to opposite side
522 .Single element having aperture
530 FUEL PRODUCT OF DEFINED SHAPE OR STRUCTURE
531 .Composed of moveable (e.g., articulated, etc.) or readily-breakable sections
532 .Shaped or arranged for easier ignition
533 ..And containing easier-igniting material
534 ...Material acts as at least part of a wrapper or packaging
535 .Cylindrical (e.g., log, etc.)
540 WITH INCOMBUSTIBLE CARRIER (E.G., TORCH, ETC.)
541 BUNDLED, COVERED OR WRAPPED
542 COATED OR IMPREGNATED FOR EASIER IGNITION
543 .Solid fiber or particle in coating (e.g., sawdust, etc.)
544 .With wax
545 .With normally-liquid material
550 CONSOLIDATED SOLIDS (E.G., BRIQUETTE, ETC.)
551 .Containing specified binder
552 ..With sewage, animal blood, or animal manure
553 ..With synthetic organic polymer prepared by polymerizing specified monomer (e.g., polyacrylonitrile, urea-formaldehyde resins, etc.)
554 ..With vegetable flour, vegetable meal, or dairy product
555 ..With glue or gelatin
556 ..With nonproteinaceous organic nitrogen compound (e.g., hexamethylenetetramine, alkanolamine salts, etc.)
557 ..With phosphorus- or boron-containing compound
558 ..With oxidant (e.g., nitrates, chlorates, chromates, permanganates, black manganese oxide, etc.)
559 ..With gypsum or silicon-containing material (e.g., clay, portland cement, water glass, etc.)
560 ...With nonfibrous carbohydrate (e.g., molasses, starch, etc.)
561 ...With pitch, tar, tar oil, or bitumen
562 ...With paraffin, liquid hydrocarbon, or wax hydrocarbon
563 ...With fibrous vegetable material, resin, or organic -C(=O)- compound (e.g., rosin, tall oil, tallow, pine resin, etc.)
564 ..Tar, pitch, or tar oil
565 ...With nonfibrous carbohydrate (e.g., molasses, starch, etc.)
566 ...With elemental metal, metal oxide, limestone, or inorganic metal salt (e.g., lime, etc.)
567 ...With fibrous vegetable material (e.g., cellulose, wood, paper, sawdust, etc.)
568 ...Solid fuel, or solid fuel and water, are the only other components of the composition
569 ..With bitumen or asphaltic material
570 ...With elemental metal, metal oxide, limestone, or inorganic metal salt (e.g., lime, etc.)
571 ...With paraffin, liquid hydrocarbon, or wax hydrocarbon
572 ..With paraffin, liquid hydrocarbon, or wax hydrocarbon
573 ...With resin or organic -C(=O)O- compound (e.g., rosin, tall oil, tallow, pine resin, carboxylic acid esters, etc.)
574 ...With preliminary purification of coal (e.g., oil agglomerates of desulfurized or deashed coal, etc.)
575 ...With elemental metal, metal oxide, limestone, or inorganic metal salt (e.g., lime, etc.)
576 ...With fibrous vegetable material (e.g., cellulose, wood, paper, sawdust, etc.)
577 ..With nonfibrous carbohydrate (e.g., molasses, starch, etc.)
578 ..With lignin, lignin derivative, or sulfite liquor (e.g., lignones, lignosulfonates, etc.)
579 ..With rubber, resin, or organic -C(=O)O- compound (e.g., rosin, tall oil, tallow, pine resin, carboxylic acids, etc.)
580 ..With limestone, elemental metal, elemental sulfur, or inorganic compound (except water)
589 .Vegetation or refuse
590 ..Wood, sawdust or paper
591 .Carbonized material (e.g., coke, etc.)
592 ."Low-rank" coal (e.g., lignite, etc.)
593 .Consolidation process using specified condition or technique
594 ..Predrying or moistening
595 ..Comminuting (e.g., grinding, etc.)
596 ..Pressing
597 ...With applied heat
598 ..Baking or drying of formed product
599 ..With chemical reaction (e.g., carbonizing.etc.)
600 WITH APPEARANCE MODIFYING ADDITIVE OR TREATMENT
601 WITH ANTIFREEZING ADDITIVE OR TREATMENT
602 WITH ANTIDUSTING ADDITIVE
603 WITH COMBUSTION IMPROVER
604 .Sulfur bindant
605 FROM VEGETATION OR REFUSE
606 .Wood, sawdust or paper
607 CARBONIZED COMPONENT (E.G., COKE, ETC.)
608 "LOW-RANK" COAL (E.G., LIGNITE, ETC.)
620 COAL TREATING PROCESS OR PRODUCT THEREOF

COAL TREATING PROCESS OR PRODUCT THEREOF
621 .Removal of undesirable
622 ..Sulfur
623 ...Using a transition metal-containing material
624 ...Using liquid aqueous material
625 ....And treatment with gas
626 ..Water (e.g., drying, etc.)
627 ..Ash or ash-former
628 MISCELLANEOUS FUEL COMPOSITION
629 APPARATUS FOR MAKING OR TREATING FUEL COMPOSITION
630 .Peat
631 ..Plural operations
632 ...With molding
633 ..Disintegrating
634 .Briquetting
635 ..Plural operations
636 ...With molding
639 .Liquid
640 WALL DEPOSIT PREVENTING OR REMOVING COMPOSITION (E.G., SOOT REMOVAL, ETC.)
641 SOLID FUEL COMBUSTION IMPROVING COMPOSITION
642 FLAME COLORANT COMPOSITION
643 MATCH SCRATCHER COMPOSITION OR STRUCTURE

****
CROSS-REFERENCE ART COLLECTIONS
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901 FUEL COMBINED WITH MATERIAL TO BE HEATED
902 .Flameless or glowless, e.g., hair curler, etc.
903 METHOD INCLUDING MEASURING, TESTING OR AUTOMATIC CONTROL
904 METHOD INVOLVING ELECTRIC OR WAVE ENERGY
905 METHOD INVOLVING ADDED CATALYST

CLASS 47 PLANT HUSBANDRY

DECEMBER 1990

1.01	**MISCELLANEOUS (FIRST SUBCLASS)**
1.1	MUSHROOM CULTURE
59	WATER CULTURE
60	.Cultivating chamber
61	..Seed germinator
62	.Nutrient supply system
63	.Individual support
64	..Porous support
65	.Dynamic plant receptacle
1.3	ELECTROCULTURE
1.4	ALGAE CULTURE
1.41	POLLINATION
1.42	HEATING SEPARATED EARTH
1.43	CROP THINNING
1.44	FLAME CULTIVATING
1.5	PLANT SURFACE CONTACT MATERIAL APPLICATOR
1.7	MATERIAL DISTRIBUTOR WITH PLANT MANIPULATING, CULTIVATING OR SENSING (E.G., TO POSITION PLANT RELATIVE TO DISTRIBUTOR)
2	FROST PREVENTING
3	CELERY BLANCHING
4	HEDGE TRAINING
5	COTTON TREATING
5.5	LAYERING
6	GRAFTING
7	.Budding
8	TREE SURGERY
9	MULCHING
10	TURPENTINE AND RUBBER
11	.Buckets and spouts
12	.Tools
14	SEED TESTERS
15	.Roll
16	.With heater
17	GREENHOUSES
18	.Benches
19	HOTBEDS
20	TREE COVERS
21	.Single tree
22	..With heater
23	TREE-TRUNK GUARDS
24	.Belts
25	.Root
26	PLANT COVERS, SHADES AND SCREENS
27	.With irrigator
28.1	.Cover
29	..Transparent top
30	..Open top
31	..Screen
32	..Root
32.1	..Inflatable
33	ORNAMENTAL BEDS
66	PLANT RECEPTACLE
67	.Hanging support
68	.Window box
69	.Terrarium
70	.Trellis
71	.Saucer
72	.Jardiniere (e.g., decorative wrapper)
73	.For transplanting
74	..Biodegradable
75	..Nested
76	..Big ball tree
77	..Seedling
78	..Mesh
79	.Irrigator
80	..Porous member or crock
81	..Fibrous wick
82	..Vertical array
83	.Vertical array
84	.With shipment package
85	.Divider
86	.Modular
87	.Monolythic
39	PLANT STANDS
40	.Window
40.5	TREE TRUNK SUPPORTING BASE WITH LIQUID RESERVOIR
41.01	FLOWER HOLDER
41.1	.Embedded
41.11	.Receptacle top supported
41.12	.Stem forced into penetratable holder
41.13	.Holder for stem end (e.g., frog)
41.14	.Having ground anchor support
41.15	.Single stem type
42	TREE SUPPORTS
43	.Props
44	PLANT SUPPORTS
45	.Cage
46	.Linear
47	.Vertical
48.5	PLANT IRRIGATORS AND/OR FERTILIZERS
50	SAP BUCKETS
51	.Combined with cover and spout
52	.Spouts
53	..With bucket support
54	Covers
55	FALSE STEMS
56	SEED TAPES
57.5	INJECTION
57.6	COATED OR IMPREGNATED SEED
58	MISCELLANEOUS PROCESSES
	******************************
	CROSS-REFERENCE ART COLLECTION
	******************************
901	PLANT CONTAINER WITH FLATS, FILLING, PLANTING OR CONVEYING
	******************************
	DIGESTS
	******************************
DIG 1	Methods of plant-breeding and including chromosome multiplication
DIG 3	Propagation of plant by cuttings
DIG 6	Plant growth regulation by control of light thereon
DIG 8	Treatment of plants and seeds with radioactive energy
DIG 9	Physical and chemical treatment of seeds for planting
DIG 10	Physical and chemical treatment of agricultural soils
DIG 11	The application of protective coatings to plants
DIG 12	Sonic or ultrasonic treatment

CLASS 48 GAS, HEATING AND ILLUMINATING

	ACETYLENE
1	.Generation and liquefaction
2	.Generator and holder
3 R	.Generator and mixer
3 A	...Special features
	.Generators
4	..Water feed
5	...Holder operated
6	....Series
7	.....Automatic switch
8	....Cell series
9	....Gasometer and high-pressure holder
10	....Interior valve
11	....Rotary cylinder
12	....Underfeed
13	....Valveless
14	.....Displacer
15	.....Flexible tube
16	.....Generator supported
17	.....Siphon
18	.....Tilting
19	...Ebb and flow
20	....Series
21	....Cell series
22	....Concentric
23	...Series
24	...Cell series
25	...Capillary
26	....Adjustable
27	...Percolating
28	....Pressure valves
29	...Expansible carbide container
30	...Expansible water holder
31	...Inexpansible gas holder and water feed
32 R	...Oscillating
32 A	.....Floating generator or carbide container
32 B	.....With inversion to contact carbide
33	...Rotary cylinder
34	...Rotary grate
35	...Underfeed
36	...Interlocking devices
37	...Pressure valves
38	..Carbide feed
39	...Apron or belt
40	...Cock
41	...Dip
42	....Cell series
43	...Flap valve
44	...Hand
45	....Dip
46	...Measured charges
47	....Cartridges
48	....Rotary carrier
49	.....Vertical
50	....Stationary
51	...Piston
52	...Plate valve
53	...Pop valve
53.1	....Bell operated
53.2	.....Bell and holder combined
53.3	....Diaphragm operated
53.4	....Float operated
54	...Screw
55	...Slide valve
58	..Valves, gas and water feed
56	..Automatic safety escape
57	..Sludge remover
59	.Carbide cartridges
60	..Conglomerate
61	GENERATORS
	.Hydrogen
116	..Carburetor
117	...Air
118	...Floating oil
62 R	.Cupola
62 A	...Partial combustion carburetor
71	..Coal, oil and water
72	..Coal and oil
73	..Coal and water
76	..Producers
77	..Coal
78	..Water
79	...Carburetor
80	....Fixer
81	....Retort
84	...Oil gas
82	...Up-and-down run
83	....Interlocking valves
85	...Carbon monoxide
75	..Oil and steam injected
63	..Air and steam injected
64	...Superheated
65	..Electric
66	..Rotary bottom
67	..Water jacket
68	...Rotary bottom
69	..Water-seal pit
74	..Refractory filling
	..Fuel agitating
85.1	...Movable wall
85.2	...Stirrer
86 R	..Chargers
86 A	....Gas making underfeed
87	..Accessories
89	.Retort
98	..Coal, oil and water
99	..Coal and water
100	..Coal and oil
101	..Coal
102 R	..Oil
102 A	....Utilizing heat from exhaust gases
103	...Electric heater
104	...Jet mixers
105	...Steam injected
106	...Automatic feed
107	...Air injected
108	..Water
109	...Carburetor
110	...Oil gas
111	..Wood
112	...Oil
92	..Metal bath
93	..Oil and gas injected
94	..Oil and steam injected
95	...Air
96	...Carburetor
90	..Domestic plants
113	..Furnaces
118.5	.Portable
119	RETORTS
120	.Compounds
122	.Inclined
123	.Vertical
124	.Lids
126	.Attachments
127.1	CONVERSION OF HYDROCARBON GAS AND BLENDING OF PRODUCT WITH FURTHER HYDROCARBON GAS, PROCESS
127.3	METHANE (NATURAL GAS) -CONTAINING PRODUCT, OR TREATMENT OR RECOVERY PROCESS
127.5	.Process including chemical reaction
127.7	..Catalytic
127.9	APPARATUS FOR CONVERTING OR TREATING HYDROCARBON GAS
144	CARBURETORS
160	.Gravity
128	PURIFIERS
170	CENTER AND BY-PASS VALVES
173	EXHAUSTERS
174	HOLDERS
175	.High-pressure safety escape
176	.Bell and tank
177	..Sectional bell

	HOLDERS
178	.Collapsible
179	.Tank
180.1	MIXERS
181	.Bell and tank
182	..Anterior
183	..Posterior
184	.Diaphragm
185	.Gravity
186	.Pump
187	.Rotary drum
188	..Anterior
189	..Posterior
189.1	.Three or more different fluids entering apparatus
189.2	.With heating means
189.3	.Auxilary air inlet
189.4	.Mixer in flow path of existing mixture
189.5	..Rotating mixer
189.6	..Includes element made of engaged strands or fibers, e.g., screen, fabric, etc.
190	DISTRIBUTION
191	.Regulating pressure
192	.Safety devices
193	.Leakage
194	..Preventing
195	..Odorizers
197 R	PROCESSES
197 FM	..Fuel mixtures
197 A	..Sewage treatment
198.1	.Manufacture from methane (natural gas)
198.2	..Employing carbon particles, porous barrier element or molten material
198.3	..With specified treatment of converted product, e.g., purification, particular cooling, testing, etc.
198.5	..Employing oxygen donor particles or carbidable metal particles
198.6	..Specified direction of gas travel through particle mass, e.g., fluidization, flow reversal, etc.
198.7	..Employing catalytic particles
198.8	..With specified reactant velocity, angle of entry to reactor or mechanical energy production, e.g., use of internal combustion engine, etc.
	.Hydrogen
199 R	..Carbureting
199 FM	....Fuel mixtures
200	.Coal, oil and water
201	.Coal and oil
202	.Coal and water
203	.Producer
204	.Water
205	..Carbureting
206	..Continuous
207	..Down run
208	..Up-and-down run
209	.Wood
210	.Coal
211	.Oil
212	..Air injected
213	..Gas injected
214 R	.Oil and steam injected
214 A	...Catalytic processes
215	..Air
216	.Acetylene
217	..Slow
219	.Carbureting

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DIGESTS

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DIG 1	Recirculation of gases produced to lower part of fuel bed
DIG 2	Slagging producer
DIG 3	High pressure
DIG 4	Powdered fuel injection
DIG 5	Diffusion membrane for gas reaction or separation
DIG 6	Underground gasification of coal
DIG 7	Slurry
DIG 8	Internal combustion engine for gas making
DIG 9	Solar gasification
DIG 10	Computer resisted control

CLASS 49 MOVABLE OR REMOVABLE CLOSURES

DECEMBER 1990

1	THERMAL RELEASER OR ACTUATOR
2	.Nonfusible
3	.Common fuse releases closures for plural openings
4	.Pull cable with fusible connection
5	.Terminates counterweight condition
6	..Overbalanced by released weight supplementing counterweight
7	.Fusible closure latch or retainer
8	..Fusible connector disengages pawl or catch
9	IMPACT ABSORBING FLEXIBLE BARRICADE
10	FLOOD ACTUATED
11	.Float or vane controlled latch release
12	.Axially pivoted picket pole
13	CLOSURE CONDITION SIGNAL OR INDICATOR
14	.Indicator at remote station
15	JAIL TYPE CLOSURE WITH REMOTE CONTROL STATION
16	.Additional key or combination control of individual closure
17	.Enclosure for remote control
18	.Motor operated control
19	.Rotary gang bar
20	.Ganged closures with selector means
21	RESPONSIVE TO OR DIRECTLY ACTUATED BY AMBIENT FLUID
22	.Fluid softenable or soluble latch release
23	.Water accumulator type
24	WITH MASTER CONTROL FOR INDIVIDUALLY CONTROLLED CLOSURES
25	RADIANT ENERGY CONTROL
26	SAFETY MEANS RESPONSIVE TO OBSTRUCTION TO CLOSURE
27	.Sensing shoe on leading edge
28	.Closure drive stopping or reversal
29	TIME CONTROLLED
30	.Predetermined delay governs start of closure movement
31	CONDITION RESPONSIVE CONTROL
32	INITIAL MANUAL DISPLACEMENT ENERGIZES MOTOR DRIVE, E.G., TOUCH PLATE INITIATOR
33	CLOSURE SHIFTABLE TO PIT OR OBSTACLE BRIDGING POSITION
34	DISTORTABLE, E.G., FLEXIBLE STRAND TYPE BARRICADE
35	CHECK OR KEY CONTROLLED
36	CONTINUOUS CLOSURE OPENING IN INTERSECTING BARRIERS
37	CONVERTIBLE
38	REGISTERABLE OPENING IN FACIALLY OPPOSED CLOSURE AND BARRIER
39	.Radially positioned
40	CONVEX OR CONCAVE CLOSURE AND OPENING
41	ARCUATE CLOSURE ROTATES ACROSS ARCUATE OPENING
42	PLURAL WINGS RADIATE FROM COMMON PIVOT, I.E., REVOLVING
43	.With speed regulator
44	.Wings fold for through passage
45	..Move laterally of opening
46	.Successive position type, e.g., turnstile
47	..Drop-arm type
48	WITH SECTION FOR HAND SIGNALLING
49	WITH TRAFFIC DIRECTOR OR CONTROLLER, E.G., ONE-WAY
50	WITH PROTECTIVE GRILLE OR SAFETY GUARD
51	.Facing interconnected movable louvers
52	.Closure operator extends through grille
53	..Swinging handle actuator
54	.Carried by closure to vacated opening
55	.Adjustable to various size opening
56	.Moves relative to primary closure
57	.Removable
58	WITH ANIMAL BLOCKER REPELLER OR CHASER
59	.Electrically charged
60	.Actuated by closure movement
61	FACIALLY OPPOSED PRIMARY AND AUXILIARY CLOSURE FOR COMMON OPENING
62	.Auxiliary movable or removably mounted on primary
63	.Auxiliary mounted for movement
64	..Of interconnected movable louvers
65	..Connected for movement with primary
66	...Sliding primary imparts swinging movement
67	..Pivoted
68	SEQUENTIAL CLOSURES FOR PASSAGEWAY
69	MAIN CLOSURE ACTUATES SUPPLEMENTAL CLOSURE FOR TRACKWAY
70	COMBINED
71	WITH SIDE PANELS, E.G., AWNING
72	WINDOW POSITION OR MOVEMENT INTERRELATED WITH DOOR LATCH
73	CLOSURES INTERCONNECTED FOR CONCURRENT MOVEMENT
74	.Closures are louvers
75	..Mounted in movable frame
76	...Closures and frame axes parallel to each other
77	..Distinct groups
78	...Opposed movement
79	..Manipulation of control closure connects and disconnects remaining closures
80	..Sequential or independent movement
81	..Multidirectional
82	..Geared, interconnector or interconnector operator
83	...Plural paths to opposite interconnectors
84	...Gear coaxial of closure pivot
85	...Crank, worm and gear
86	..Cable, interconnector or interconnector operator
87	..Handle is actuator
88	...Interconnector or closure mounted
89	..With biasing means
90	..With position holder
91	..With weather seal
92	...Includes configuration of closures
93	.Closures on opposite approaches to crossing
94	.Closures on opposite or angularly related barriers
95	.Closures in spaced openings along barrier
96	..Levers acting between interconnector and closures
97	...Rock shaft interconnector
98	.One closure with complete independent movement
99	..Counterbalancing closures with adjustable or detachable cable interconnector
100	.Moves at different speeds
101	..Lever interconnected
102	..Cable interconnected
103	.Sequential movement
104	.Closures mounted for swinging
105	..Treadle or treadle bar interconnector
106	...Common interconnector actuated from opposite approaches
107	..Geared, interconnector or interconnector operator
108	...Drives lever pivoted on closure
109	..Link or link system interconnected
110	...With operator or energy stored opening means
111	....Allochiral link system from closures to input connection
112	.....Input acts at pivot of diverging links

CLOSURES INTERCONNECTED FOR CONCURRENT MOVEMENT
.Closures mounted for swinging
..Link or link system interconnected
...With operator or energy stored opening means
....Allochiral link system from closures to input connection
.....Input acts at pivot of diverging links
113 ......Links sliding carriage mounted
114 ....Actuating force applied through one closure to other closure
115 ..Cable interconnector sheaved on closure pivots
116 .Opposed similar movement
117 ..With actuator on opposite approaches
118 ..Motor driven
119 ..Counterbalance effect derived from opposed closure
120 ...Bipartite, center-opening type, e.g., elevator door
121 ...Cable interconnected
122 ..Lever interconnected
123 ..Cable interconnected
124 EXTENSIBLE BAR SECTIONS
125 MOUNTED FOR MOVEMENT TO FACIALLY STACKED POSITION
126 .From vertical to horizontal overhead stacked position
127 .From collinear to stacked position
128 COLLINEAR CLOSURES, ONE MOVES TO OFFSET POSITION
129 .Moved closure has additional movement
130 .Horizontal sliding
131 CLOSURE SURFACE MOVED TO INOPERATIVE POSITION FLUSH-WITH-GROUND
132 .Treadle actuated
133 ..Actuation raises closure to blocking position
134 ...Treadle on opposite approaches
135 WITH WIND VANE OR SAIL
136 SINGLE ACTUATOR SELECTIVELY MOVES INDIVIDUAL CLOSURES
137 UNITARY OR INTERRELATED FLUID OPERATOR AND CLOSURE CHECK
138 WITH MEANS TO VARY OPENING SPAN OR SPEED DURING MOVEMENT
139 OPTIONALLY MOVED, MANUALLY OR BY MOTOR
140 .With manually actuated operator
141 WITH SPECIFIED MEANS TO EFFECT EMERGENCY RELEASE TO CLOSURE
142 PLURAL CLOSURES, EACH WITH INDEPENDENT DIVERSE MOVEMENT
143 .One sliding and other swinging
144 ..One slides up to close, other vents about vertical axis
145 ..One slides vertically, other swings about horizontal axis
146 VERTICALLY RECIPROCABLE, ADDITIONAL SIDEWARD VENTING MOVEMENT FROM CLOSED POSITION
147 CLOSURE HANGS ON FLACCID CONNECTOR
148 DISPARATE SUPPORT FOR DISPLACED CLOSURE
149 MOUNTED FOR OPTIONAL MOVEMENTS
150 .Common counterbalance for sliding and swinging movements
151 ..Cable guide changes direction of counterbalancing force
152 .One movement multidirectional
153 ..Swings on link
154 ...Other movement is sliding on link at balance point of closure
155 ...Other movement is sliding within portal frame
156 ..Slides on pivoted support, other movement is relative vertical adjustment
157 ..Other movement is vertical sliding
158 .Mounted on rod for sliding or swinging
159 ..With latch for sliding movement
160 ...Rod latch
161 .Pivoted closure within framework of double hung sash
162 ..Vertical axis pivot
163 .One closure movable separately from or with other closure
164 ..Closure slide within swingable frame
165 ...Divided frame with pivoted section
166 ..Upper closure mounted on horizontally swinging closure, e.g., sliding window on swinging door
167 ...Power conduit for upper closure extends across hinge
168 ..Plural independently mounted movable closures
169 ..Within encompassing closure
170 ...With common edge
171 ...Viewing, ventilating or packet passage
172 .Edgewise separable stile-slide supports closure for vertical swinging
173 ..Coil spring bias coaxial of closure pivot
174 .Edgewise retractable bearing acting between closure and portal frame
175 ..Towards closure
176 .Pivot mounted on sliding member, e.g., slide-stile
177 ..Vertical axis pivot
178 ...With free stile slide-portal latch
179 ...Displaceable stop strip
180 ...Free stile slide-closure latch, closure carried
181 ..Vertical position holder actuated by pivoting closure
182 ..Diagonally opposed stop flanges on stile slide or closure
183 ..Key or latch between closure and stile slide
184 ...Longitudinal key
185 ....Retractable edgewise towards closure
186 ...Cap-type latch
187 ..Link-brace between closure and stile slide
188 .Separable hinge permits sliding of closure
189 ..Retractable portion
190 .Means adjusting closure vertically on vertical support pivot
191 ..Angularly adjusted about horizontal pivot
192 .On alternative axes
193 ..On opposite ends of closure
194 .Movable or removable guide
195 ..Pivoted
196 ...Closure swings with guide
197 UP-AND-OVER TYPE, E.G., MOVES FROM VERTICAL TO WITHDRAWN HORIZONTAL OVERHEAD POSITION
198 .Independently movable closure sections
199 .With operator
200 ..And counterbalance
201 .Upward sliding followed by distinct swinging
202 ..Pivoted guide
203 .On lever or link
204 ..Pivoted at closure
205 ...Multiple links angularly related
206 ...Actuating spring co-directional with or acts on links
207 SUPERIMPOSED CLOSURES, INDEPENDENT EDGEWISE MOVEMENT TO SIDE OF OPENING
208 MOUNTED FOR MULTIDIRECTIONAL OR OBLIQUE MOVEMENT

	MOUNTED FOR MULTIDIRECTIONAL OR OBLIQUE MOVEMENT
209	.Initial or terminal movement transverse to sliding movement edgewise of portal
210	..Common operator for both movements
211	..Transverse movement aligns closure for movement into housing
212	..Transversely movable track
213	..Skewed track
214	...Separate track section for rear of closure
215	...Rear of closure moves transversly on crank arm
216	..Moves transversely on link
217	...Closure pivoted to tilting link-carriage
218	...Crank arm-type link
219	....Paired sets of crank arms
220	.....Operator interconnected with sets
221	..Closure carried by track mounted carriage
222	...Tiltable carriage
223	...Closure hinged to carriage
224	...Inclined transverse movement
225	...Terminal cam
226	.In plane of closure, e.g., oblique
227	..Permits movement from housing to raised closed position
228	..Gravitates on tilted track
229	...Oscillating track
230	....Sectional or nonlinear
231	...Pendant closure
232	..Swings on co-planar pivotal link arm
233	...Longitudinal-spaced parallel links
234	..Closure actuated vertically to retard horizontal travel
235	...By track roller-closure displacement
236	.One direction imparts gravitational bias to swinging closure, e.g., rising hinge
237	..Biased by inclined cam and descending slide or roller
238	...Shiftable cam
239	...Mating inclined cam and slide surfaces
240	..Shiftable pivot
241	...On crank arm
242	...Mounted on eccentric or lever
243	....Pivot on hinge post cap lever
244	....Pivot on vertically oscillating lever
245	...Pivot pin shifted in slot
246	.Swings on plural axes, e.g., pivotal link arms
247	..Axes normal to each other
248	..Multiple links angularly related
249	...One link jointed
250	..With additional slide guiding closure movement
251	...Friction slide mount, e.g., biased
252	...Guide on portal frame
253	..Link at closure balance point
254	.Sequential translation and swinging
255	..Operated vertically to permit horizontal swinging
256	...Camming lever
257	..Translation shifts pivot axis
258	..Translates on pivoted axis
259	...Supporting frame extends laterally of its pivot
260	.Pivot axis moves along guide
261	.Swings about seat on portal frame, e.g., indeterminate axis
262	VEHICLE ACTUATED ROLLER OR CARRIAGE OR CARRIED COOPERANT
263	TREADLE OR IMPACT INITIATED OPERATOR
264	.Switch in approach to closure
265	.Fluid controller in approach to closure
266	.With alternative hand operator
267	.Two stage operator
268	.Sequential initiators for latch release and operator
269	.Spaced open and close initiators on opposite sides of closure
270	..Plural interconnected paired initiators
271	..Releases latch from either side
272	.Releases latch
273	.Load maintained, self returning
274	..Spring return
275	CLOSURE MOVED BY STEP BY STEP OPERATOR
276	STARTER TYPE OPERATOR, E.G., SEAL BREAKER
277	.Lever actuator engages strap-fastener or longitudinally shiftable bar
278	.Handle camming lever
279	OPERATOR INTERRELATED WITH CLOSURE LATCH RELEASE
280	.Motor driven
281	.Common actuator, different movements to unlatch and move closure
282	.Actuator or opposite approaches
283	..Latch for diverse positions of closure, separate trains
284	..Latch train and closure operator train from diverse points on actuator
285	..Lever interconnector, separate trains to latch and closure mover
286	..Force applied at closure pivot releases latch
287	...Geared
288	...Sheaved
289	..Closure or latch interposed in endless or looped cable
290	..Lost motion branched cable
291	..Lost motion pin or lever and slot
292	..Lost motion cam drive
293	..Closure moving force applied through latch releaser
294	...Duplicate links release common latch
295	...Crank link-type interconnector
296	...Bell crank-type interconnector
297	...Latch train includes closure mounted cable guide
298	...Link system interconnector
299	...Allochiral actuators to common latch release
300	.Common input, diverse trains to latch and closure mover
301	.One direction pull cable type
302	.Actuator at remote station
303	CLOSURE MOVEMENT ACTUATED RETRACTABLE SEALING, GUIDING OR LOCKING STRIP
304	.Strip mounted on sill
305	..Interengages strip on closure
306	.Strip movement in plane of closure
307	..Horizontally reciprocating plunger actuator
308	...Lever interconnects or cams strip
309	..Oblique movement
310	.Resilient means swings strip to retracted position
311	..Offset or lever actuator, axis parallel to strip axis
312	...Spring coaxial or strip axis
313	..Deflector in path of strip
314	...Jamb mounted
315	.Weight or gravity biased to retracted position
316	OPERATOR FOR RETRACTABLE SEALING, GUIDING OR LOCKING STRIP
317	.Opposed strips actuated concurrently
318	..With interconnected strip on adjacent side
319	.Interrelated with closure latch

OPERATOR FOR RETRACTABLE SEALING, GUIDING OR LOCKING STRIP
320 .Rotating shaft normal to plane or strip movement
321 .Includes lever
322 WITH SAFETY BRAKE OR CATCH
323 CLOSURE GUIDED FROM HOUSING BY RETRACTABLE SUPPORT
324 WITH OPERATOR FOR MOVABLY MOUNTED CLOSURE
325 .Reversibly flexible and rigid rod
326 .Moves closure in either direction from closed position
327 .Actuated from opposite approaches
328 ..By vertically oscillating lever
329 ...Link system connects lever to closure
330 ....Actuating force applied between link pivots, e.g., over center toggle type
331 ..Pull cable, lever interconnector
332 ..Cable with pulley or drum
333 .Coaxial of closure pivot
334 ..Motor driven
335 ..Coaxial gear
336 ...Rack drive
337 ...Worm drive
338 ..Link drives coaxial connector
339 .Operating lever or link and closure swing about parallel axes
340 ..Motor-driven lever
341 ..Gear-driven lever
342 ...Toothed lever end engages gear
343 ...Lever carries screw gearing component
344 ..Reciprocating rod drives lever
345 ..Multiple links
346 ..Lever end slide engages guide on closure
347 .One direction pull cable
348 .Drive within closure housing
349 ..Motor driven
350 ..Gear-driven lever moves within limits of housing
351 ...Multiple levers
352 ..Cable drive
353 ..Exposed handle drives concealed lever
354 .Through wall type
355 ..With weather seal or flap for drive element
356 .Push-rod actuator
357 .Remote actuating or initiating station
358 .Closure-mounted drive
359 ..Lever-actuated drive
360 .Operator drives closure along guide
361 ..Common input for drives adjacent opposed guides
362 ..Rack or screw parallel to closure guide
363 ..Lever
364 BUMP ACTUATED LATCH RELEASE FOR BIASED CLOSURE
365 CLOSURE MOUNT OR STOP ON INDEPENDENT MOVABLE OR REMOVABLE CENTER POST
366 BIPARTITE, CENTER OPENING
367 .Overlapping meeting edges
368 ..With disparate seal
369 ..Z-bar-type edge
370 .Sliding closures
371 SWINGING CLOSURES CLOSING SINGLE OPENING
372 STORED IN HOUSING
373 .With cover or lid for housing opening
374 .Reciprocates vertically in and out of housing
375 ..Vertical extension on closure bottom edge guided with housing
376 ..Inclined guide on side edge of portal opening
377 ..With cushioning means adjacent housing opening
378 ..One-piece housing facing and portal frame contains guide
379 LATCH RELEASE OF MOVEMENT-STORED ENERGY
380 MOVABLE CLOSURE AND ITS SUPPORT TRANSFERABLE AS UNIT
381 WITH MEANS MOUNTING CLOSURE FOR SWINGING
382 .Hinging position reversal means
383 .Hinge edge, finger guard, lock or disparate seal
384 ..Cylinder and sleeve type
385 .Transverse pivot, e.g., single pivoted corner
386 .With biasing means
387 ..Distinct weight
388 .Pivots on opposed portal members
389 ..Closure removable in inclined position
390 ..Closure portions on opposite sides of portal in open position
391 ...Inclined opposed member, e.g., vent window type
392 ...Diagonally opposed stops or seals
393 ....On pivot carrying portal members
394 .With latch or lock
395 ..Plural, e.g., gang
396 .Compensator for front end weight, e.g., sag preventer
397 .Unitary structural member and hinge element
398 .Concealed hinge
399 .Hinge leaf mounted on closure edge surface
400 .Closure nests within portal frame
401 ..Marginal closure flange overlaps portal frame
402 .Closure overlies portal frame
403 .Louver end caps, e.g., mounting clips
404 WITH MEANS MOUNTING CLOSURE FOR RECIPROCATION
405 .By link mount
406 .With plug, flap or bridger for meeting rail
407 .Guide mounted stop spaces closure from sill
408 .Drain or vent in guide or sash
409 .Pendant from horizontal guide
410 ..With guide for lower edge of closure
411 ...Threshold or sill guide
412 ..Overlapping angles shield track-closure crevice
413 .Horizontally sliding sashless type
414 .With distinct biasing means for slide or guide
415 ..Acting transversely of closure face
416 ...Biased side guide or parting strip
417 ..With means to adjust or retract biaser
418 ...Adjusting screw coaxial of coil spring
419 ..Nonmetallic biaser
420 ..Ball or roller bearing
421 ..Closure carried
422 ..Biaser permits self-adjustment of single guide for plural closures
423 ..Slide or guide with transverse restrainer
424 .Baffle plate guided in chamber slot
425 .Revolving guide component, e.g., roller or gear
426 ..Offset from plane of portal, e.g., freight car door
427 ..On support edgewise of passage
428 .Diverse or springy material guide or slide
429 ..Cooperates with counterbalance hardware
430 ...Counterbalance within jamb-guide gap
431 ..Interengaging sections on portal and closure

	WITH MEANS MOUNTING CLOSURE FOR RECIPROCATION
	.Diverse or springy material guide or slide
	..Interengaging sections on portal and closure
432	...On parting strip and adjacent closures
433	...Plural interdigitants
434	..Single guide or slide for facially adjacent closures
435	...Parting strip with integral, opposite wings
436	..Bearing includes transverse restrainer
437	...Closure mounted
438	....On closure edge
439	.....Cap type
440	...Channel guide
441	....Converging sides or ends
442	...Guide engages slot in closure
443	....On closure face
444	....Portion engages edge surface
445	.With counterbalance
446	..Connected to slide mount of removable closure
447	..Guide-concealed weight pocket
448	...Displaceable guide section permits access to weight pocket
449	.With latch or lock
450	..Plural open positions
451	...Friction holder
452	.With means to adjust guide position
453	.Slide or guide feature for closure removal
454	..Detachable or displaceable stile or slide strip
455	..Guide mounted for repeated movement
456	..Removable guide
457	...Interfitted retainers, guide and frame
458	.Interengaging meeting rails
459	.Guide includes deformed or cast component
460	HANDLE OR PROTECTOR
461	.Receptor for pole handle
462	.Edge protector
463	REMOVABLE CLOSURE
464	.With separable closure sections
465	.Releasable means on closure
466	.Displaceable sealing or binding strip
467	THRESHOLD
468	.Adjustable
469	.With diverse seal
470	..Closure carried
471	.With drain or vent
472	COMBINED SEAL, STOP AND STIFFENER, I.E., CLEAT
473	.With additional seal
474	.Eddy current or air space trap
475	CLOSURE SEAL, E.G., STRIKER GASKET OR WEATHERSTRIP
476	.With fluid drain, or closure face mounted deflector, e.g., sill seal
477	.Inflatable or fluid pressure responsive
478	.Magnetic
479	.At juncture of intersecting edges, i.e., corner seal
480	.With distinct biasing means
481	..With means to guide biased movement
482	.Feature for replacing, severing, segmenting or adjusting
483	.Interengaging sections on closures or on closure and portal frame
484	.Successive distinct seals
485	.Between overlapping closures or closure and portal frame
486	.At juncture or terminus of facing panels of closure
487	..Connected to insulation or breaker strip
488	.Encloses or carried by closure edge surface
489	.Anchoring channel of slot in portal frame or closure
490	.U-shaped member or portion mounts seal
491	..Cover or cushion enclosed distinct clamp member
492	.With snap fastener
493	.With holder, e.g., securing sheath
494	..Mounted by a fastener traversing seal
495	.Plural sealing surfaces or edges
496	.Spaced superposed flange cantilevered from edge of base, e.g., "U" strips
497	..Integral tubular striker portion
498	.Tubular
499	.Bulged sealing surface intermediate securing ends
500	.Windlace type
501	PANEL WITH CLOSURE FEATURE
502	.With means to accommodate window accessory, e.g., automobile-type door
503	.Modified to accommodate lock or latch
504	FRAME WITH CLOSURE FEATURE
505	.Adjustable frame
506	PROCESSES
507	MISCELLANEOUS
	******************************
	DIGESTS
	******************************
DIG 1	Thermal breaks for frames
DIG 2	Plastic frame components

CLASS 51 ABRADING

1	MISCELLANEOUS
2 R	MACHINES
2 A	..Operative cycles
2 B	..Machine control
2 C	...Automatic stops
2 D	...Common control
2 E	....Manual actuation
2 F	...Truing tool
2 G	...Tool and workholder
2 H	....Placing, displacing and feeding
2 J	.....Cam control
2 K	.....Fluid pressure actuated
2 L	......Moving abutment
2 M	....Placing and displacing
2 N	.....Counter control
2 P	.....Displacing cam
2 Q	......Placing spring and weight
2 S	.....Displacing spring and weight
2 T	......Sizing gauge control
2 UA	.....Fluid pressure actuated
2 V	......Sizing gauge control
2 W	.....Lateral separation
2 XA	.....Rack and pinion
2 Y	.....Selected grinding position
2 Z	....Interlocks
2 AA	....Electronics
3	.Combined
4	..Scouring and polishing
5 R	..With nonabrading operations
5 A	....With work deforming
5 B	....Miscellaneous cutting
5 C	.....Grinding of cut surface
5 D	....Dressing
5 E	....Drilling
5 F	....Adjuncts
6	.Graining boxes
7	.Immersion
410	.Sandblast
411	..Hollow interior
412	..Spark plug
413	..Electrical device
414	..File
415	..With condition-responsive
416	...Cyclic control
417	..With moving work holder
418	...Endless belt type
419	...Rotary
420	....Roller
421	....Table
422	..With tumbling barrel
423	...Having centrifugal propulsion means
424	..With recovery means
425	...Having separation means
426	..With chamber
427	..With hand-directed nozzle
428	..Propulsion means
429	...Mobile
430	...Magnetic
431	...Mechanical
432	....Centrifugal batter with feed
433	.....With power feed
434	..Centrifugal batter
435	..Blade structure
436	..Supply structure
437	...Multiple hopper
438	..Valve structure
439	..Nozzle structure
16	.Scouring devices
17	..Immersion
18	...Roller work feed
19	...Rotary work holder
20	...Winding drum
21	..Reciprocating tool
22	..Rotary cylinder
23	...Opposed
24	..Rotary disk
25	...Opposed
26	.Without tool
27	..Valve and set
28	...Plug cock
29	...Puppet valve
30	...Slide valve
31	.Rotary reciprocating tool
32	..Peripheral face
33 R	...Oscillating
33 HK	.....Harvester knives
33 W	.....Work rotating
34 R	...Rectilinear
34 A	.....Templet
34 BR	.....Razor blades and blade reversing
34 C	.....Reciprocating carriage
34 D	......Fluid pressure actuated
34 E	......Screw and nut actuated
34 F	......Flexible actuator
34 G	......Rack and pinion actuated
34 H	......Reciprocating spindle
34 J	......Fluid pressure actuated
34 K	......Cam and follower actuated
35	...Compound
36	....Harvester-knife sharpeners
37	....One-way cut
38	....One-way work traverse
39	....Roller work feed
40	....Opposed
41	.....Reciprocating work holder
42	.....Work rotating
43	....Planetary
44	....Reciprocating work holder
45	.....Rectilinear
46	.....Rocking
47	....Swinging tool carrier
48 R	....Work rotating
48 HE	......Helical
49	.....Roll grinders
50 R	.....Rotary work holder
50 H	.......Hydraulic
50 PC	.......Pattern control
51	......Disk and wheel grinders
52 R	......Gear grinders
52 HB	.......Hobbing
53	......Turret
54	..Radial face
55	...Oscillating
56 R	...Rectilinear
56 G	.....Gear grinder
57	.Reciprocating tool
58	..Oscillating
59 R	..Rectilinear
59 SS	....Supersonic
60	...Compound
61	...Endless work carrier
62	...Flexible
63	....Stropping machines
64	...Reciprocating work holder
65	....Rocking
66	...Roller work feed
67	...Rotary work holder
68	...Swinging tool carrier
69	....Actuating handle
70	...Winding drum
71	.Rotary tool
72 R	..Peripheral face
72 L	....Linear indexing
73 R	...Internal
73 GC	.....Grinding crankpins
74 R	...One-way traverse
74 BS	.....Blade sharpeners
75	....Drawing reel
76 R	....Endless work carrier
76 BS	......Blade sharpeners
77 R	....Nut and screw
77 BS	......Blade sharpeners
78	....Roller work feed
79	.....Work rotating
80 R	...Opposed
80 A	.....One-way work traverse

	MACHINES
	.Rotary tool
	..Peripheral face
	...Opposed
	.....One-way work traverse
80 B	......Razor blades
80 BS	.....Blade sharpeners
81 R	....Alternating tool
81 BS	......Blade sharpeners
82 R	....Plunger feed
82 BS	......Blade sharpeners
83 R	....Reciprocating work holder
83 BS	......Blade sharpeners
84 R	.....Rectilinear
84 BS	.......Blade sharpeners
85 R	......Rocking
85 BS	........Blade sharpeners
86 R	.....Rocking
86 BS	.......Blade sharpeners
87 R	....Roller work feed
87 BS	......Blade sharpeners
88	....Work rotating
89	.....Rotary work holder
90	...Planetary
91 R	...Reciprocating work holder
91 BS	.....Blade sharpeners
91 HK	.....Harvester knives
92 R	....Rectilinear
92 BS	......Blade sharpeners
92 HK	......Harvester knives
92 ND	......Indexing
93	.....Compound
94 R	.....Rocking
94 CS	.......Hobs, tops, and fluted threads
95 R	.....Work rotating
95 GH	.......Gear forming or hobbing
95 LH	.......Long helix
95 WH	.......Rotary work holder
95 TG	.......Thread grinder
96	....Rocking
97 R	.....Work rotating
97 NC	.......Noncircular cross section
98 R	...Stationary work holder
98 BS	.....Blade sharpeners
98 SP	.....Spaced portions
98 HK	.....Harvester knives
98.5	....Reversing, obverting or pivoting
99	...Swinging tool carrier
100 R	...Templet
100 P	.....Pantograph
101 R	....Rotary
101 LG	......Lens grinders
102	...Work guide
103 R	...Work rotating
103 C	.....With centers
103 WH	.....Work handling
103 TF	.....Through feed
104	....Disk and wheel grinders
105 R	....Rotary work holder
105 SP	......Spaced portions
105 HB	......By hob
105 EC	......Grinding eccentric shape
105 VG	......Valve grinders
105 LG	......Lens grinders
105 GG	......Gear grinder
106 R	.....Disk and wheel grinders
106 LG	.......Lens grinders
107	.....Glassware ornamenting
108 R	....Turret
108 BS	......Blade sharpeners
109 R	..Radial face
109 BS	....Blade sharpeners
110	...One-way traverse
111 R	...Opposed
111 BR	.....Blade reversing
112	....One-way work traverse
113	....Reciprocating work holder
114	.....Rectilinear
115	.....Rocking
116	....Work guide
117	....Work rotating
118	.....Rotary work holder
119	...Orbital
120	....Planetary
121	...Reciprocating work holder
122	....Rectilinear
123 R	.....Work rotating
123 G	.......Gear generating
124 R	....Rocking
124 L	......Lens grinders
125	...Stationary work holder
125.5	....Reversing, obverting or pivoting
126	...Swinging tool carrier
127	...Template
128	...Work guide
129	...Work rotating
130	....Raceway
131.1	....Rotary work holder
131.2	.....By means loosely confining work
131.3	.....Planar surface grinding
131.4	......Pressure plate
131.5	.....Having vacuum or adhesive securing means
132	.....Disk and wheel grinders
133	.....Planetary
134	.....Turret
134.5 R	..Tool rotating
134.5 F	....Fluid
135 R	.Traveling band
135 BT	...Belt tracking
136	..Chain
137	..One-way traverse
138	...Endless work carrier
139	...Roller work feed
140	..Opposed
141	..Pressers and formers
142	..Reciprocating band carrier
143	..Reciprocating work holder
144	...Work rotating
145 R	..Rotary work holder
145 T	....Turret
146	..Superposed
147	..Swinging band carrier
148	..Tension devices
149	.Stationary tool
150	..Flexible
151	...Reciprocating work holder
152	....Needle-eye polishers
153	....Stropping machines
154	...Work rotating
155	....Stropping machines
156	..Rigid
157	...Reciprocating work holder
158	....Blade sharpeners
159	.....Blade reversing
160	....Lens grinders
161	...Rotary work holder
162	....Lens grinders
163.1	.Tumbling devices
163.2	..About a vertical axis
164.1	..Drum
164.2	...Planetary
164.5	..Tumbling shapes
165 R	.Precision devices
165 TP	...Tape controlled
165.71	..Computer controlled
165.72	..Optical
165.73	..With temperature control means
165.74	..With indicating means
165.75	...Tool and work holder position
165.76	...Tool and work holder feeding means
165.77	..Tool and work holder feeding means
165.78	...With moving abutment
165.79	....Cam
165.8	...Screw actuated
165.81	....Manually adjustable

	MACHINES
	.Precision devices
	..Tool and work holder feeding means
	...Screw actuated
165.82	....Ratchet and pawl operated
165.83	.....Sizing guage controlled
165.84	.....Cam actuated
165.85	.....Fluid pressure actuated
165.86	.....Table dog actuated
165.87	...Tool wear compensation
165.88	....Sizing gauge controlled
165.89	...Cam actuated
165.9	...Fluid pressure actuated means
165.91	....Sizing gauge controlled
165.92	....Control means near and parallel to the grinder
165.93	...Tool interior of workpiece
166 R	FRAMES AND MOUNTS
166 TS	..Tool supporter
166 FB	...Floor and bench stands
166 MH	...Machine heads
166 T	...Turret
167	.Double treadle
168	.Hanging grindstones
169	..Balancing
170 R	.Portable
170 PT	...Rotary peripheral tool
170 T	...Rotary radial tool
170 TL	...Reciprocating tool
170 EB	...Endless band tool
170 MT	...Orbital motion tool
171	..Button cleaners
172	..Calk sharpeners
173	..Edge-tool sharpeners
174	..Floor-surfacing machines
175	...Reciprocating tool
176	...Rotary cylinder
177	...Rotary disk
178	..Rail grinders
179	..Roll and wheel grinders
180	..Wall-surfacing machines
181 R	TOOLS, COMBINED
181 NT	..Internal
330	CARRIER FOR RELATIVELY MOVABLE SIMULTANEOUSLY USABLE TOOLS
331	.For radially movable tools
332	..Centrifugal force urged tools
334	...Flexible flail tools
335	....With tool supply or storage
336	....Including self-sustaining tools
337	.....With discrete non-destructible tool-securing means
338	..Including taper or wedge tool-moving surface(s)
339	...With threaded operator
340	....To move conoid surface(s)
341	.....To actuate pivotally mounted tools
342	.....For movement of conoid members relative to each other
343	.....By conoid member(s) with screw threads
344	.....Including plural conoid surfaces
345	...Inclined keyways or splines
346	...Conoid surface(s)
347	..Including gear-actuated tool-mover
348	..Including lever-actuated tool-mover
349	..Including fluid-pressure-actuated tool-mover
350	..Including thread-actuated tool-mover
351	...Interrelated to move plural tools
352	..Including resiliently urged tool
353	...By coil spring
354	.Including tools resiliently urged toward work
355	CARRIER FOR A RADIALLY MOVABLE TOOL
356	VENTILATION OR COOLING OF TOOOL OR SUPPORT
357	FLEXIBLE-MEMBER TOOL MOUNTED ON PLURAL ROLLS
358	TOOL SUPPORT FOR FLEXIBLE-MEMBER TOOL
359	.With tool supply or storage
360	..Coiled tool
361	...On spool or axle
362	.Magnetic or suction holding means
363	.Contour-adjustable support
364	.Including tool-holding slot(s) in rotary support
365	..Separable along slot
366	...Diametrically separable
367	..With tool-tensioning means
368	...By rotary gripping element
369	...Including threaded element
370	.Including longitudinal tool-holding slot
371	..Separable along slot
372	.Including expansible external surface
373	..Fluid actuated
374	..Centrifugally actuated
375	..Actuated by compression of support
376	.Including headed, axially-disposed, tool-holding member on rotary support
377	..With member-retaining means disconnected by partial rotation
378	..With threaded means to retain member
379	...Including conical tool-engaging member
380	.Including taper or wedge
381	.Including endless band
382	.Including resiliently urged tool-securing means
383	..Separable
384	..Rotatable
385	..Biased for tool disengagement
386	..Cantilever-spring actuated
387	..Coil-spring actuated
388	.Including tool-holder having tool-surface depressor
389	.Including threaded means to retain tool-holder
390	..Including bar or plate
391	.Manually manipulated
392	..By handle
393	...Detachable from support
394	FLEXIBLE-MEMBER TOOL PER SE
395	.Interrupted or composite (e.g., cracked, non-planar, etc.) work face
396	..Uniform thickness non-planar
397	..Sectional
398	.Work face variegated or on projecting backing
399	.Splice or joint
400	.Comprising fibers
401	.Laminate
402	..Discontinuous or differential coating impregnation or bond
403	..Coil wound
404	..Interengaged strands
405	..Non co-extensive laminae
406	..Strippable layer or component
407	..Abrasive on one surface only
204	TOOL, RIGID
205 R	.Actuating handle
205 WG	...Work guide
206 R	.Rotary cylinder
206 NF	...Reinforced
206 P	...Ribbed periphery
206.4	..Circular segments
206.5	...Detachable
207	..Laminated
208	..Work guide
209 R	.Rotary disk
209 DL	...Disc laps
209 S	...Scrolls
210	..Work guide
211 R	.Stationary

	TOOL, RIGID
	.Stationary
211 H	...Razor hones
212	..Metal
213	..Oilers and moisteners
214	..Work guide
215 R	WORK FEEDERS
215 AR	..Rotary
215 HM	...With hopper and magazine
215 CP	..Reciprocating
215 H	...With hopper and magazine
215 E	..Endless
215 M	...With hopper and magazine
215 SF	..Skewed feed rollers
215 UE	..Ejectors and unloaders
216 R	WORK HOLDERS
216 LP	..Lens, prism and jewel block
216 A	..Angle
216 T	..Rotary
216 P	..Portable
216 ND	..Indexing
216 H	...Hand operated
217 R	.Clamp
217 P	...Portable
217 T	...Rotary
217 A	...Angular
217 S	...Oscillating
217 L	...Lens holder
218 R	..Edge tool
218 A	....Angular
218 P	....Portable
218 T	....Rotary
219 R	...Drill
219 PC	.....Pattern control
220	...Gauging devices
221 R	....Portable
221 BS	......Blade sharpeners
222	...Harvester knife
223	....Suspension
224	...Reciprocating
225	...Rotary cutter
226	...Seat controlled
227 R	..Hollow work
227 H	....Hypodermic needle
228	..Skate
229	.Dops and sticks
230	.Reciprocating
231	..Rectilinear
232	...Work rotating
233	...Fluid-pressure actuated
234	..Rocking
235	.Vacuum
236	.Work rotating
237 R	..Rotary work holder
237 M	....Orbital movement
237 CS	....Crank shaft
237 T	....Turret
238 R	WORK RESTS
238 S	..Steady rests
238 GG	...Centerless grinder rests
238 T	...Tool rests
239	.Gauging devices
240 R	WORK TABLES
240 T	..Rotary
240 A	..Angular
240 GB	..Glass supports
241 R	ATTACHMENTS
241 G	..Work guide
241 LG	..Rail grinders
241 S	..Mounted on the work
241 B	..Orbital
241 VS	..Valve and seat grinders
241 A	...Orbital
242	.Card grinders
243	..Flats
244	.Commutator grinders
245	.Internal grinders
246	.Machine knife sharpeners
247	..Rotary tool
248	...Work actuated
249	..Rotary reciprocating tool
250	..Stationary tool
251	.Roll and wheel grinders
252	..Reciprocating tool
253	...Nut and screw
254	..Rotary reciprocating tool
255	..Stationary tool
256	.Sewing machine
257	..Flywheel
258	.Vehicle
259	.Lathe
260	..Center grinders
261	..Internal grinders
262 R	ACCESSORIES
262 T	..Truing
262 A	..Tool cleaners
262.1	.Erasing shield
263	.Abradant supplying
264	..Graders
265	.Button-cleaning shields
266	.Cooling
267	..Wetting grindstones
268	.Guards and housings
269	..Breakage guards
270	..Collectors
271	..Drive shields
272	..Spark and splash guards
273	..Suction
274	..Work guards
275	.Sheet-applying devices
276	.Strop-surface renewing
277	.Work-mounting devices
281 R	ABRADING PROCESSES
281 P	..Internal portion
281 C	..Cam
281 SF	..Side face of disc
310	.Utilizing shield (mask or stencil)
311	..With in situ removal of nonresist portion
312	..With preparation of shield
313	.Utilizing tumbling operation
314	..Including temperature modification or control
315	..In at least one of plural abrading steps
316	..With auxiliary work treatment or in critical fluent medium
317	.Utilizing fluent abradant
318	..At least once in plural distinct abrading areas or steps
319	..By blasting
320	...With nonsiliceous abradant
321	...With nonatmospheric fluid carrier
283 R	.Glass and stone grinding
283 E	...Edging
284 R	..Lens
284 E	....Edging
285	.Razor, knife and scissors sharpening
286	.Gauge grinding
287	.Gear and worm grinding
288	.Drill, thread, thread cutter, reamer and rotary cutter grinding
289 R	.Roll, roller, shaft, ball and piston grinding
289 S	...Ball grinding
290	.Ring, tube, bushing, sleeve and cylinder grinding
291	..Bearing raceways
322	.With critical temperature modification or control of work or abradant
323	.With critical nonabrading work treatment
324	..Including deformation
325	.With tool treating or forming
326	.With plural distinct abrading areas or steps

ABRADING PROCESSES
.With plural distinct abrading areas or steps
327 ..Utilizing mounted rigid grinding tool only
328 .Utilizing nonrigid tool
292 .Abrasive supplying
293 ABRASIVE TOOL MAKING PROCESS, MATERIALS AND COMPOSITIONS
294 .Bags or filled cloth
295 .Impregnating or coating of abrasive tools
296 .Pore forming
297 .Laminating
298 .With synthetic resin
299 .With rubber or reaction product thereof
300 .With natural resin or reaction product thereof
301 .With protein or reaction product thereof
302 .With carbohydrate or reaction product thereof
303 ..Cellulose or derivative thereof
304 .With fats, fatty oils or fatty oil acids and salts thereof
305 .With ester-type wax, bituminous material or tarry residues
306 .With hydrocarbon
307 .With inorganic materials
308 ..Clay, silica and silicates
309 ..Metals and metal oxides
****
DIGESTS
****
DIG 1 Gear grinders
DIG 2 Super finish
DIG 3 Brake grinding
DIG 4 Egg cleaning
DIG 5 Reel, flexible abrasive
DIG 6 Metal laps
DIG 7 Machine elements and units
DIG 8 Strip feeding
DIG 9 Electrolytic grinding
DIG 10 Wire polishing
DIG 11 Supersonic
DIG 12 Mounted points
DIG 13 Shoe
DIG 14 Contour grinding
DIG 15 Supporting, positioning or feed work
DIG 16 Wheel speed control
DIG 17 Brush bristle grinding
DIG 18 Bread knife
DIG 31 Sine bar
DIG 32 Wankel
DIG 33 Tire "Rounding"
DIG 34 "Pads" for lens-shaping tools

CLASS 52 STATIC STRUCTURES, E.G., BUILDINGS

DECEMBER 1990

1 CONTROLLED BY CONDITION RESPONSIVE MEANS
2 R SHAPED OR STRENGTHENED BY FLUID PRESSURE
2 C .Loading dock doorway seal
2 A .Confined tubular element exerts force
2 B ..For sealing a closure panel
2 E .Serving as a form for hardenable material
2 F .Fluid pressure is subatmospheric
2 D .Including ingress/egress provision
2 K .Intersecting tubular elements form framework
2 G .Supported on rigid-walled structure
2 L .Upstanding column (e.g., mast, tower)
2 H .Comprising spaced, sheet-like members and fluid chamber therebetween
2 J ..Including subdividing elements
2 M .Sheet-like member comprises plural, edge-joined sections
2 N .Including hold-down means
2 P ..Comprising strand-like element
3 ARTICLE OR MATERIAL SUPPORTED COVER
4 .With article or ground penetrating retainer
5 .Flexibly connected strips or slats
6 WITH STADIUM OR AUDITORIUM FEATURE
7 .Movable stage
8 .Seating arrangement
9 ..Shiftable seating section
10 ...Power means
11 COVER WITH SURFACE WATER RECEIVER AT EAVE OR VALLEY
12 .With separator, e.g., strainer
13 .Between oppositely sloping sections
14 ..With additional subsurface liquid receiver
15 .Inwardly of edge
16 .With downspout
17 INSULATED RAILWAY CAR TYPE ROOF
18 CLERESTORY OR SAW-TOOTH ROOF
19 WITH ENTRANCE FOR PERSONS OR OBJECTS IN HORIZONTAL OR INCLINED COVER
20 .With additional enclosure structure, e.g., manhole
21 .Masonry or concrete
22 SPECIFIED ROOF SPACED FROM CEILING
23 COVER WITH EXTERIOR HOLD-DOWN
24 COVER WITH PROJECTING RESTRAINER, E.G., SNOW STOP
25 .Rod type with plural supports
26 .Restrainer having integral penetrator
27 WITH DISPARATE ARTICLE OR ITS SUPPORT
28 .Artificial illumination means
29 .Mounted for movement
30 ..Elevator in multi-story
31 ..Revolving or endless type conveyor
32 ..Swinging
33 .Articles form traffic path arrangement
34 .Lavatory fixture
35 ..Wall juncture construction
36 .Horizontal surface type article, e.g., bed, chair or shelf
37 .On or adjacent portal frame, e.g., window cleaner's hook
38 .Sign, e.g., name plate or ornament
39 .Supported from ceiling
40 .On shaft or tower
41 ROOF RUNNING BOARD OR SADDLE
42 .Shaped to accommodate seam
43 ..Also ridge cap
44 .Attached to seam
45 RAILROAD CAR ROOF CONSTRUCTION
46 .Continuous carline, e.g., discrete coextensive rafter
47 ..And longitudinal ridge
48 ..Purlin or cross-bracing
49 ..Superjacent covering strip
50 ..Laterally verging sections
51 ..Separate end fastener or support
52 ..Over juncture of covering sheets
53 .Transverse sustaining rib integral with covering
54 .Central discrete ridge member
55 ..Relatively movable covering sections
56 .Covering sheet with overhanging continuing edge section
57 ROOF FINIAL OR CRESTING
58 EXTERIOR-TYPE FLASHING
59 .Raggle block
60 .Interfitting parts
61 ..Within wall
62 .Extending into wall
63 ENCLOSURE INCLUDING FLACCID NONMETALLIC OR FORAMINOUS SURFACING
64 BARRIER OR MAJOR SECTION MOUNTED FOR IN SITU REPOSITIONING, E.G., REARRANGEABLE OR ROTATABLE
65 .Rotatable about vertical axis
66 .Roof movable as entity relative to its substructure
67 .Telescoping sub and main enclosures
68 .Wall extension convertible to roof
69 .Hinged to swing from vertical to nonvertical
70 .Three walls hinged at their intersections
71 .Barrier of hingedly connected sections
72 .Movable cupola or section thereof
73 RIGID BARRIER CANTILEVERED FROM VERTICAL SUPPORT
74 .Awning type
75 ..Longitudinal axis of slats inclined
76 ...With side panel
77 ....Diverse side and top panels
78 ..Horizontal slatlike surfacing
79.1 PREASSEMBLED SUBENCLOSURE OR SUBSTRUCTURE SECTION(S) OF UNIT OR BUILDING
79.2 .Vertically staggered
79.3 .Angularly stacked
79.4 .Nonrectangular substructure
79.5 .Collapsible for ease of transport
79.6 .Porch or vestibule
79.7 .Opening between subenclosures
79.8 ..Portal to portal
79.9 .With retaining or attaching means
79.11 ..Cast in situ
79.12 ..Separate frame
79.13 ..Distinct vertical tie
79.14 .Continuous cementitious barrier
80 COMPOUND CURVE COVER
81 .Geodesic type
82 CONICAL OR RADIALLY RIBBED COVER
83 COVER OR ENCLOSURE SUSPENDED BY FLEXIBLE MEANS
84 STEAMLINE CROSS SECTION, I.E., AIRFOIL
85 CURVILINEAR PORTAL WITH SETTABLE MATERIAL BACKER
86 VERTICALLY CURVED ARCH WITH TERMINAL SUPPORT
87 .With deck structure
88 .Monolithic arch
89 .Stonelike modules form arch
90 INCLINED COVER OR RAFTER, WITH SUPPORTING SUBSTRUCTURE
91 .Masonry or settable material at eave intersection
92 .Rafter rests on wall plate
93 .Stud end contacts rafter
94 GABLE OR EAVE TERMINAL CONSTRUCTION
95 .With conduit or passage means
96 .Covering continuation overlaps edge
97 EXTERNALLY PROJECTING LIQUID DEFLECTOR
98 FRANGIBLE SECTION OR MEANS
99 .In dissimilar material member
100 .Removable corner or internal section

101	ANIMAL BLOCKING LATERAL PROJECTION, TRAP OR SCARER
102	EARTH-SUPPORTED COPING OR EDGING
103	LAND MARKER OR MONUMENT
104	.With translucent feature
105	WITH INDICIA
106	JAIL-TYPE STRUCTURE
107	AREAWAY, E.G., WINDOW WELL
108	STRIPLIKE UNIT, REVERSIBLY FLEXIBLE AND RIGID
109	LAZY TONG EXTENSION UNIT
110	SHAFT, VEHICLE SHELL ATTACHED, E.G., ANTENNA
111	MECHANISM OPERATED RELATIVELY MOVABLE SHAFT ASSEMBLY
112	.Opposed barrier-engaging, e.g., rock drill column
113	.With spring-actuated return
114	.Moves about vertical axis
115	.Fluid pressure actuated
116	.Tilts relative to base
117	..Relatively moving sections
118	...Telescoping
119	...Lifting arm directly engages tower
120	...Gin pole hoist
121	.Longitudinally extensible by flexible drive or hoist
122.1	WITH LIFTING OR HANDLING MEANS FOR PRIMARY COMPONENT OR ASSEMBLY
123.1	.Mast or enclosure section elevated to superimposed position
124.1	.Vault component
124.2	..Having hand, hoist, or tackle engaging means embedded in settable material
125.1	.Lift slab
125.2	.Construction or component having means to engage hand or cable type lifting means
125.3	..Unitary engaging means in monolithic or single contruction or component
125.4	..Embedded in settable material
125.5	...Embedded socket element
125.6	..Engaging means cooperates with rigid, intermediate device which distributes load or lifts multiple components
126.1	.Position adjusting means, e.g., leveling
126.2	..For service duct or outlet
126.3	..For vertical barrier only
126.4	...Threaded element engages support surface
126.5	..For horizontal barrier only
126.6	...Adjustable pedestal
126.7	..Threaded element engages support surface
127.1	WITH ADJUNCTIVE MEANS FOR ASSEMBLY OR DISASSEMBLY
127.2	.Removable prop or brace combined with structure component
127.3	.Having component positioning means or control means for flowable material
127.4	..Opening or passageway for flowable material
127.5	.Specific hand or tool engaging surface on structure component
127.6	..Panel and frame connection
127.7	.Structure includes tool, or opening to provide access for a tool, used in operating a locking, latching, attaching, or adjusting means
127.8	..Panel joined to or released from peripheral frame
127.9	..Tool operates swinging arm latch
127.11	..Cam surface
127.12	..Threaded engagement means
128	BURIAL VAULT
129	.With corpse, or corpse product, treating feature
130	..Disinfectant means
131	.With fluid guiding port from ambient
132	..With internal air director
133	.Combined
134	.Mausoleum type
135	.Concentric barrier sections with dissimilar sealing lamina therebetween
136	.Compartmented
137	..Plural covers defining a compartment therebetween
138	.Hood type
139	.With separately placeable closure in abutting relation to wall edges
140	..With sealing material retaining construction
141	...Tongue and groove type
142	..Sectional side walls and floor construction
143	WITH TRANSPORTING FEATURE
144	WITH EXPOSED CONFIGURATION HAVING ACOUSTICAL FUNCTION
145	.Absorbing material behind foraminous facing sheet
146	VERTICAL STRUCTURE WITH BRACE, OR GUY, EXTENDING DIAGONALLY TO A BASE
147	.Attached discrete guard
148	.Flexible guy type
149	.With adjustable means
150	..At brace and shaft intersection
151	..For tie between shaft and brace
152	.Spaced or angularly related braces
153	SHAFT WITH EMBEDDING WING-TYPE BRACE
154	.Wings in different planes
155	PIERCING OR EXPANDING EARTH ANCHOR
156	.Disparate subterranean anchor components
157	.Auger-type penetrator
158	.Laterally held, translating driven piercer
159	.Guided in plane normal to shaft
160	.Spreader cam or plate
161	..Screw-operated
162	.Pivot means connecting separate fluke or hook
163	..Fluke or hook pivoted intermediate their ends
164	..Connected by pivoted brace or tie
165	.Supporting separate axially aligned shaft
166	DEADMAN-TYPE ANCHOR
167 R	MEANS COMPENSATING EARTH-TRANSMITTED FORCE, E.G., EARTHQUAKE
167 DF	.Dynamic force generator
167 CB	.Cross bracing
168	WITH PROTECTIVE LIQUID SUPPLY
169.1	SPECIFIED TERRANEAN RELATIONSHIP
169.2	.Geographic
169.3	..Divided terrane
169.4	.Inclined terrane
169.5	.With fluid-conducting means, e.g., drainage or ventilation
169.6	.Subterranean enclosure with portal opening, e.g., storm or root cellar, bomb shelter
169.7	.Open top, embedded container, tank or reservoir
169.8	..With laterally spaced foundation element
169.9	.Discrete, spaced foundation elements
169.11	.Means to control heat transfer, e.g., insulation or frostline positioning
169.12	.Mobile home skirt
169.13	.Shaft, i.e., elongated rigid structure
169.14	.With waterproofing means, e.g., covering, coating or lamina

	SPECIFIED TERRANEAN RELATIONSHIP
170	.Shaft reinforcement adjacent earth's surface
171	TRANSPARENT PANEL, E.G., WINDOW, WITH TREATING MEANS
172	.Hygroscopic material, e.g., internal drier
173 R	COMBINED
173 DS	..Docking seals
174	WITH TRAFFIC-GUIDING FEATURE
175	.Multilevel building with ramp
176	..Central ramp group
177	SPECIFIED WEAR OR FRICTION-TYPE TRAFFIC-CARRYING SURFACE
179	.Tread-nosing, e.g., shaped stair pad
180	.Perforate structure having twisted element or particular surface
181	.Exposed embedded element or inserted filler
182	STEPPED, E.G., STAIR
183	.Interconnected relatively movable components
184	.With additional building feature
185	..Multilevel building
186	..Closure
187	.Helical type
188	.Tread unit on horizontal tread member connected to riser
189	.Precast stonelike component
190	..Integral tread and riser
191	.Risers connected to common stringer
192	FLUENT MATERIAL HOPPER OR STORAGE CONTAINER WITH MATERIAL PORT
193	.Rod crossing port
194	.Elevated container, leg-supported
195	.With chute
196	.Framed port in wall
197	.Bottom outlet port, e.g., hopper bottom
198	ENCLOSURE OR COVER, WITH FLUID-GUIDING PORT BETWEEN AMBIENT AND ENCLOSED USABLE SPACE
199	.Roof vent
200	CUPOLA
201	BAY WINDOW
202	AUXILIARY IMPERFORATE PANEL-LIKE SHIELD ATTACHED TO MAIN PANEL, BARRIER OR FRAME
203	.Auxiliary pane attached to main pane
204	SPECIFIED FEATURE FORMING PORTAL OPENING THROUGH BARRIER
205	.Portal in interior partition, e.g., into compartment
206	.Wall with plural portals
207	..Lattice barrier with fixed and movable panels
208	.Panel or panel edging, directly clamped or adhered to barrier
209	.Drain or vent for reveal area
210	.Studding forms portal or frame section
211	.Architrave; i.e., finish strip on barrier or panel face
212	..Separable, lapped, reveal covering sections
213	.Retaining feature between frame and reveal
214	..Catch or resilient strip
215	..Buck
216	..Foraminous section of frame embedded
217	..For size-adjustment
218	FLUE WITH GASEOUS FLUID-DIRECTING FEATURE
219	FLUE CONNECTION TO BUILDING STRUCTURE
220	SERVICE DUCT WITHIN BARRIER
221	.With lateral outlet, e.g., electrical conduit
222	TENSIONED OR FLEXED SHEET FACING
223 R	PRECOMPRESSING FEATURE, E.G., PRESTRESSING
223 L	..Laterally compressed reinforcement tendon or stresser
224	.Curvilinear tube, radially compressed
225	.Laterally external stresser or tendon hold-down
226	..Inclined tendon
227	.Compressed abutting modules
228	..Additional member crossing compression means
229	..Form-sustainer with feature resisting transverse loading
230	.Plural strand tendon with core or sheath
231	MONOLITH WITH SUSTAINER AND MEANS TENSIONING ADDITIONAL REINFORCEMENT
232	IRREVERSIBLY REACTIVE COMPONENT
233	LOG WALL-TYPE CONSTRUCTION
234	MULTIROOM OR LEVEL
235	.Curtain-wall, i.e., panel attached outside floor or beam
236.1	.Nonrectangular
236.2	..Curvilinear
236.3	.Multilevel
236.4	..Staggered levels
236.5	..Continuous cementitious barrier*
236.6	..Floor intermediate wall ends
236.7	..Superimposed vertical structure with spacing horizontal structure
236.8	...Horizontal structure includes component of settable material
236.9	..Abutting vertical structure at horizontal structure juncture
238.1	.Partition secured to and crossed by preconstructed barrier
239	..Cubicle type, i.e., spaced from floor or ceiling
240	..With tensioning means
241	..Elongated terminal member
242	...Interfitted trim plate
243	..Spaced sustainers individually connected to barriers
243.1	..Movable element on partition engages overhead barrier, i.e., ceiling, to secure partition in place
244	TUBULAR STRUCTURE WITH EXPOSED TERMINUS EDGE PROTECTOR
245	CURVILINEAR BARRIER
246	.Supports transverse structure
247	.Anchored to disparate base
248	.Dissimilar material hoop tie
249	.Transversely layered
250	CONSTRUCTION FORMING INTERSECTION HAVING CAST STONELIKE BARRIER COMPONENT
251	.Cast reinforced vertical and horizontal members
252	..Distinct horizontal sustainers between columns
253	..Rods engage rings or plates at supports
254	.Corner with revealed embedded protector
255	..Cast in situ corner facings
256	...With separate anchor portions
257	...Longitudinally spaced discrete anchor portions
258	.Laterally related modules with concealed cast-sustainer
259	.Cast in situ material at module juncture
260	.Cast in situ column with radiating-type reinforcement
261	PLURAL FACIALLY SPACED INTERSECTIONS INCLUDING BARRIER AS A COMPONENT
262	.Barrier resting on top of vertical structures, e.g., walls
263	..On columns
264	.Floor supports walls
265	..Layered barrier
266	.Vertically superposed wall sections

PLURAL FACIALLY SPACED INTERSECTIONS INCLUDING BARRIER AS A COMPONENT
267 .Wall of contacting layers
268 ..Disparate material lamina between layers
269 ..Dissimilar material sheet-form facing
270 .Walls of modular construction
271 ..Joint key between superimposed modules
272 INTERSECTION: BARRIER OR MODULAR-TYPE CONSTRUCTION
273 .Flexible barrier covering: shaped or edge-attached
274 .With footing, e.g., foundation
275 .Laterally related modules, e.g., spaced surfacing forms corner
276 ..Multiplane overlapping angle and barrier sections
277 ...Arcuate angle section
278 ...Means attaching angle section to substructure
279 ..Abutting inner modules with outer L-type module
280 .Trihedral shafts-type corner
281 .Sustainer coextensive with junction of panels or modules
282 ..Exposed sustainer
283 .Barrier or module seated on projecting means on vertical structure
284 .Modular construction
285 ..Disparate material tie
286 ..Vertical and horizontal keys
287 .Conduit or trim member attached to in situ erected barrier
288 .Corner type: channel, trim or shield member
289 .Coplanar sustainers, e.g., joists to wall
290 OPPOSED STRIP SECTIONS (BASEBOARDS) AND OUTWARDLY EXTENDING SUSTAINER
291 ADJUSTABLE STRESSING MEANS, E.G., WARP CORRECTION
292 FOOTING, WALL OR SHAFT-SUPPORTING TYPE, E.G., FOUNDATION
293 .Supporting wall
294 .Concrete type
295 ..Embedded projecting tie
296 ..Supporting shaft
297 ...Shaft encompassed by base
298 .Socket
299 .Framework spans footings
300 VERTICAL STRUCTURE WITH UPPER TERMINAL BEARING PLATE OR CAP
301 .Shaft
302 PLUGGED VENT, OR PASSAGE, BETWEEN INTERIOR AND AMBIENT
303 .Communicating with enlarged space, e.g., hollow wall
304 ..Double pane panel
305 .Formed by preformed imperforate separator
306 VISIBLE TRANSLUCENT BLOCK OR EMBEDDED COMPONENT
307 .With preform of nontranslucent material
308 ..Forming edging for translucent panel
309.1 WITH SYNTHETIC RESINOUS COMPONENT
309.2 .Locally reinforced to receive a fastener
309.3 .Nonfoam adhesive
309.4 .Foam
309.5 ..Adhesive
309.6 ..Open cell
309.7 ..With an embedded, elongated component
309.8 ..Adjacent nonporous layer
309.9 ...Nonporous exterior faces
309.11 ....Tie between exterior faces
309.12 ...Cementitious material
309.13 .With nonresinous component
309.14 ..Exterior faces
309.15 ..Core
309.16 ..Embedded, elongated component
309.17 ..Cementitious material
310 MEANS REMOVING EXCESS MOISTURE FROM CAST IN SITU MASS
311 ORNAMENTAL: COLOR, THICKNESS VARIATION OR DISSIMILAR ELEMENTS FORMING PATTERN
312 .Trim strip with filler strip
313 .Wood grain pattern arrangement
314 .Facer formed to simulate multiple units
315 .Visible discrete elements in cast material
316 .Integral relief of face
317 DRAFT STOP BETWEEN STUDS, E.G., FIRE STOP
318 MONOLITHIC BARRIER WITH REVEALED INTERSECTING STIFFENERS, E.G., TERRAZO
319 CAST IN SITU CONCRETE BARRIER WITH LATERALLY PROJECTING RIB-TYPE SUSTAINER
320 .Block-type filler between sustainers
321 ..Transverse retainer-engaging sustainers
322 ..Preformed, settable material sustainer
323 ..Filler of cooperating, void-forming sections
324 ..With means underlying sustainer
325 ..Hollow, nonrectangular filler
326 .Means suspending backer or stiffener from sustainer
327 .Additional distinct coextensive section fixed to barrier or sustainer
328 ..Section on face of barrier opposite sustainer
329 ..Arched backer between sustainers
330 ...With flange web-type reinforcement
331 ..Distinct means between base of sustainer and section
332 ..Discrete panels forming section
333 ..Sustainer anchored within section
334 .Shear-resisting means between sustainer and barrier
335 .Sheet-form backer supported on upper terminal of sustainer
336 ..Ridges on corrugated backing crossing sustainer
337 .Intersecting sustainers of barrier material, e.g., lattice type
338 .With backer supported on internal surface of flange web-type sustainer
339 ..Arched backer
340 .Sustainer enclosed by embedding material
341 ..Reinforcement modified at sustainer crossing
342 OPENLY SPACED SLAT-TYPE LATH
343 .Woven or filament connected
344 SETTABLE MATERIAL RECEIVING BACKER FIXED TO FURRING, JOIST OR STUD
345 .With adjustable spacer
346 .Means accommodating movement of backer
347 .With isolating means on supported side of backer
348 .Intersecting or crossing members forming backer frame
349 ..Terminal engaging flange or flanged member
350 ..Member supported by flange of crossing member
351 .With tie anchored in load-bearing barrier
352 .Integral backer and elongated support
353 .With tie crossing laterally related backers
354 .Integral part of support between edges of coplanar backers
355 ..With discrete separable fastener for backer

SETTABLE MATERIAL RECEIVING BACKER FIXED TO FURRING, JOIST OR STUD
356 .Support structurally modified to retain backer
357 .Discrete clip engaging back of support and in front of backer
358 ..Elongated wire-type clip
359 ..Engaging flange, adjacent backer, of flange web-type support
360 ...Single clip engaging oppositely extending flanges
361 .Impaling-type fastener
362 ..Support penetrated
363 ...Backer penetrated
364 INSTALLED SCREED OR UNIT WITH SPECIFIED FEATURE RETAINING PENETRATING FASTENER
365 .Position adjusting means
366 .Adhesively secured
367 .Stonelike material base type, e.g., concrete set
368 ..Composite shaft: pierceable component
369 ..Integral means on holder penetrates ground member
370 ..Holder engages opposite sides of ground member
371 ..Screed of striplike material
372 ..Locked-together base and receiver
373 ...Shell with fastener-retaining feature
374 ....Filler
375 ...Base is preformed module or panel
376 .Composite, including pierceable nonmetal component
377 .Fastener deflecting
378 CAST IN SITU LOADING BEARING MONOLITH WITH COEXTENSIVE SECTION AND TIE
379 .Tie between block-type units
380 CAST IN SITU BARRIER CONSTRUCTION DEFINING ISOLATED SPACE
381 .Lined cavity formed within monolithic barrier material
382 ..Closed curvilinear cavity liner
383 .Spaced barrier sections with dissimilar material tie
384 FACING OF COPLANAR VENEER TILES HELD BY NONLOAD BEARING HOLDING MEANS
385 .Attached to additional substructure
386 .Integral projections on backer
387 ..Engaging edges of tile
388 .Mesh-type backer, e.g., woven fabric
389 .Tiles embedded in settable material
390 ADHERED COPLANAR VENEER TILE-TYPE FACER, E.G., PARQUET
391 .With additional discrete securing means
392 .Integral edge engaging spacing feature on tile
393 RELATIVELY YIELDABLE PREFORMED SEPARATOR
394 .Between overlapping edges of surfacing sections
395 .Separating bridger strip from juncture of panels
396 .Between stonelike-type components
397 .Spacing panel (pane) from disparate edging
398 ..Facially spaced similar panels
399 ...Spaced by unitary or contacting U-channels
400 ..Overlapping edge and face of panel
401 ..Metallic spring, e.g., strip separator
402 ..Held by separate spacer
403 .Elastomeric or felt spacer
404 INSULATING INSERT, E.G., FILLER IN CAVITY IN PRECONSTRUCTED OR CAST STRUCTURE
405 .Stonelike-type shell
406 .Envelope-type filler
407 .Filler spaced from inside face of cavity
408 DISPARATE PREFORMED SHEET LAMINA SEPARATING COMPONENTS OF IN SITU CONSTRUCTION
409 .Lapped multiplanar components
410 .Tie crossing dividing lamina
411 .Additional material forming bond
412 ..Extending into intersecting joints
413 ..Integral projections on planar face
414 MONOLITHIC CAST IN SITU BARRIER WITH DISPARATE MATERIAL SUSTAINER AND EMBEDDED REINFORCEMENT
415 FACERS, E.G., MODULES, MUTUALLY BONDED BY INTERNAL SETTABLE MATERIAL SECTION
416 .Lapped or bridger strip juncture-type surfacing
417 ..Dissimilar strip at juncture of facers
418 ..Embedded fastener
419 ..Material between superposed facers
420 ...Partial section, e.g., adhesive edge strip
421 .Hollow module and discrete dam for cast section
422 .Retaining feature on module exterior
423 .Shaft with dissimilar shell
424 .Laterally related modules, e.g., back-to-back
425 ..Continuous section filling space between modules
426 ...With transverse tie
427 ..Transverse, disparate material form member
428 ..Separable, bonded tie between modules
429 ..Flanges on modules enclosing section
430 ..Integral overlapping bonded projections
431 ..Module reinforcement anchored in section
432 .Facer reinforcement anchored in section
433 .Beam or girder type with feature resisting transverse loading
434 .Modules fixed to preformed sustainer
435 ..Flange web-type sustainer embedded in section
436 .Section between integral interfitting means on modules
437 .Section filling opposed channels in adjacent modules
438 ..Dissimilar material member in section
439 .Section filling hollow or channel module
440 .Means covering section surface
441 ..Distinct means separate from module
442 .Dissimilar material member in section
443 IMPERFORATE AREA BACKER FOR SETTABLE MATERIAL FACING
444 .Block-type backer with integral facing receiving feature
445 .Discrete particles adhered to backer
446 .Disparate coating material on backer
447 .Separate sections with connecting feature
448 ..Interengaging edge joint
449 .Cementitious material covered by adhered apertured sheet
450 .Corrugated
451 ..Laminated on planar sheet
452 ..With transverse filament
453 .Grooved backer
454 .Attached filament or mesh
455 SECTIONED IMPERFORATE FACING WITHIN PERIPHERAL FRAME, E.G., PLURAL PANEL DOOR
456 .Intersecting separators within frame
457 .Edge-abutted panels
458 ..Panel edge flanges connected
459 NONSUSTAINING BRIDGER STRIP OVER JUNCTURE OF PANELS

NONSUSTAINING BRIDGER STRIP OVER JUNCTURE OF PANELS
460 .Panels attached to substructure arrangement
461 .Bridger strip and coextensive elongated member at juncture
462 ..Lapped panel sections
463 ..With separable fastening element
464 ...Portion of bridger strip between panels
465 .Cap
466 ..With separate anchor element
467 ...Traversing cap
468 ..Extending between spaced coplanar edges of panels
469 ..Completely exterior
470 .Interfitted with surfacing section
471 ..In recess of section
472 ...Deformed section
473 LOUVERED PANEL
474 FACER, E.G., PANEL, HELD BY PREASSEMBLED OR PREPOSITIONED FRAME OR SHAFT
475 .Cornered peripheral frame
476 ..With releasable frame section retaining facer
477 ..Stonelike load bearing-type component
478 .Lapped multiplanar surfacing attached to substructure arrangement
479 .Face-to-face barrier sections
480 ..With spacing sleeper or subflooring
481 ..Sustainer between section faces
482 .Shaft with ductile-type deformable grip
483 .Facer lateral of adjacent shaft edge
484 ..Facer suspended by flexible or pivoted hanger
485 ...Complementary integral interengaging facer edges
486 ..Hook-supported hanger for facer
487 ..Cantilevered support for facer
488 ..Shafts form polygon
489 ..Separable clip-type fastener
490 .Stiffener between facer and shaft
491 .Preformed concrete sustainer
761 .Shaft substantially cylindrical in cross section
762 .Lateral flanges of adjacent facers held in opposed relation by shaft or separate means associated therewith
763 .Interkeyed edge configurations of adjacent facers cooperate with shaft
764 .Facer retaining means other than individually applied screw, rivet, or nail-type fastener or retainer permanently mounted on facer
765 ..Shaft or facer piercing element integrally formed on, or preassembled with, retaining means
766 ..Retaining means includes cam or wedge
767 ...Retaining means clamped against facer by turning cam-engaging screw
768 ..Retaining means pivots or includes pivoting actuating means
769 ..Retaining means includes spring holding a separate element against facer
770 ..Separate shaped, thin-walled retaining elements confront opposite barrier faces of facer, with fastener interconnecting elements or element and shaft
771 ...Retaining elements interconnected by intermediate member and fastener
772 ..Joint faces of adjacent facers held in spaced relation by shaft and retaining element confronting both facers
773 ..Springy, thin-walled, or wire retaining means resiliently abuts facer
774 ...Retaining means engages joint face of facer
775 ..Retaining element received in channel or aperture in shaft
776 ..Solid three-sided glazing strip
777 .Shaft and facer confront at two surfaces at joint face of facer
778 ..Shaft received in edge rabbet formed at intersection of barrier and joint faces of facer
779 ..Shaft received in channel in joint face of facer
780 ..Facer received in recess in shaft
781 ...Shaft formed of shaped, thin-walled material
503 HOLLOW MODULES FORM THROUGH PASSAGE IN BARRIER INTERIOR
504 .Facing of solid block-type modules
505 .Horizontal and vertical communication
506 FACER, E.G., MODULE, ATTACHABLE TO DISPARATE STRUCTURE
507 .Grille panel facer
508 .Facially opposed barrier sections form cavity
509 .With separate fastener extending beyond margin
510 .Integral rear-seating ledge on facer
511 .Mounting means attached to facer, e.g., upholstery panel
512 .Separate fastener held by penetrating fastener
513 .Discrete dissimilar tie between stonelike components
514 WITH MEANS FOR SPLIT-PREVENTION OR DAMAGED PART REPAIR
515 WITH DISPARATE PROTECTIVE COATING
516 .In situ applied layer coextensive with lapped sections
517 .Repellant treated
518 LAPPED MULTIPLANAR SURFACING; E.G., SHINGLE TYPE
519 .Interfitted sections
520 ..Fastener or anchor at juncture
521 ...Traversing surfacing
522 ..Resilient detent
523 ..Edge and slit
524 ...Interfitting slits
525 ...With tab
526 ..Tab and aperture
527 ..Coplanar tab on margin
528 ..Folded, rolled or indented in situ
529 ..Reentrant
530 ...Plural oppositely opening
531 ....With terminal flange extending beyond joint
532 ...At corner of section
533 ..Joint with fluid-handling feature
534 ...Formed by deformation of base material
535 ..Plural offset portions
536 ..Face-to-face tongue and groove, e.g., dado
537 ...Meshing corrugated sheet type
538 ...Plural opposed flanges
539 ..Tongue and groove
540 ..With laminated lap section
541 ..Rabbet
542 ..Perpendicularly directed flange
543 .With fastener or anchor
544 ..Interengaging connectable fastener parts
545 ..Engaging folded section of strip or facing
546 ..Fitted within edge slot or notch
547 ..Edge-embracing

LAPPED MULTIPLANAR SURFACING: E.G., SHINGLE TYPE
.With fastener or anchor
..Edge-embracing
548 ...With integral piercing point
549 ..Facing clamped to substructure by discrete external member
550 ..Embracing or interfitted with substructure
551 ..Subjacent fastener strip
552 ..Secured to or integral with cover section
553 .With spacing or space-forming feature
554 .With pattern-forming feature
555 ..Facing simulating plural elements
556 .Metal face end covering
557 .Plural tabs or facing elements simulator
558 ..Formed embossment or groove
559 ..Formed by slot
560 .Tapered
561 LATERALLY RELATED, INDIVIDUALLY ASSEMBLED COURSES
562 .Utilizing discrete dissimilar material tie
563 ..Engaging lateral integral projection on module
564 ..Engaging opposed deformations in course modules
565 ..Embedded in course module
566 .Header unit traverses course
567 ..Internal lock-held on header unit
568 .Connected by transverse hidden joining member
569 .Opposed lateral monolithic projections on modules
570 ..Locking type, i.e., against lateral separation
571 ...Additional lock means between projections
572 ..Opposed projections abutting
573 WITH MEANS ACCOMMODATING DIMENSIONAL VARIATION RESPONSIVE TO CHANGING CONDITIONS
574 ALTERNATING REVERSED IDENTICAL FORM MODULES
575 MODULE WITH NONPARALLEL OPPOSED JOINT FACES
576 CAVITY-FORMER WITHIN MODULE
577 EMBEDDED-TYPE VOID FORMER
578 MODULE OR PANEL WITH DISCRETE EDGEWISE CONNECTING FEATURE
579 .Z- or U-strips, aligned flanges forming major faces
580 .Opposed discrete edger-spacers, e.g., hollow panels
581 .Edge-to-edge open-work panels
582 .With separate dissimilar joining means
583 ..Embedded elements joined
584 ..Clamp-type joining means
585 ..Tie within preformed opposed openings, e.g., dowel
586 ...Tie length within edge or face groove, e.g., spline
587 ..Embedded projecting tying means
588 .Interfitted lateral flanges
589 .Keys on angularly related edges
590 ..Key joints exposed at face, e.g., pattern
591 ..Surface with four-direction lock
592 ..Ship-lap
593 .Integral key
594 ..Four-direction lock
595 ..Tongue and groove with internal space
596 OPAQUE STONELIKE MODULE
597 .Discrete clip-gripping facing sheet
598 .Lateral retaining feature on facing sheet
599 ..Terminal flanges
600 .Elongated reinforcing
601 ..Dissimilar material edging
602 ..Slab type with integral ribs
603 .With integral spacing projections
604 .Particularly related to adjacent module
605 .Grooves on juncture face
606 .With traversing passage
607 ..Additional intersecting, traversing passage or groove
608 .Nonrectangular cross section
609 ..Faces with offset edges
610 ...L-shaped
611 ...T-shaped
612 .With layered stonelike components
782 COMPOSITE PREFABRICATED PANEL COMPRISING: SEPARATE MECHANICAL FASTENER; MEANS FOR SUPPORT SECUREMENT; DISPARATE EDGING OR STIFFENER WHICH, IN A MULTI-PLY PANEL, EXTENDS OUTWARDLY OF A MAJOR OR EDGE FACE; OR SPACED SHEETS WITH INTURNED EDGE-FORMING FLANGES
783 .Rimmed table top formed of face-to-face sheets
784 ..With mechanical fastener (e.g., screw, bolt, or nail, etc.) for securing rim
785 .Sandwich or hollow with sheetlike facing members
786 ..Mirror
787 ..Internal receiver for elongated laterl fastener
788 ..Parallel, transparent panes, (e.g., double glass window panel, etc.)
789 ...Intermediate nonglass sheet
790 ...Internal spacer
791 ..Hermetically sealed, opaque panel
792 ..Dimpled or embossed sheet
793 ..Internal, diagonal, enlongated stiffener
794 ..Perforate or woven sheet
795 ..Corrugated component
796 ...Face-to-face corrugated sheets
797 ....Abutting trough to crest
798 .....Angled face-to-face corrugations
799 ...Corrugated intermediate sheet
800 ...Core of elongated, corrugated spacers
801 ...Single corrugated sheet and single flat sheet face-to-face
802 ..Inturned opposed flanges form panel edge
803 ...With driven, headed, or screw-threaded fastener
804 ...With separate clip or wire-type fastener
805 ...Flanges interfit
806 ..Multicellular core
807 ...Elongated striplike laterally spaced elements form core
808 ...Discrete cell elements
809 ..Insulating core
810 ..Having a single hollow cavity
811 .Face-to-face sheets in substantially continuous contact
812 ..Mirror
813 ..Separate attached, elongated edging or stiffener
814 .Corrugated or embossed panel with separate attached, elongated edging or stiffener
815 .Perforate panel with separate attached, elongated edging
816 ..Expanded metal
817 ..Elongated, laterally spaced strips or strands
818 ...Intersecting strips or strands

	COMPOSITE PREFABRICATED PANEL COMPRISING: SEPARATE MECHANICAL FASTENER; MEANS FOR SUPPORT SECUREMENT; DISPARATE EDGING OR STIFFENER WHICH, IN A MULTI-PLY PANEL, EXTENDS OUTWARDLY OF A MAJOR OR EDGE FACE; OR SPACED SHEETS WITH INTURNED EDGE-FORMING FLANGES
	.Perforate panel with separate attached, elongated edging
	..Elongated, laterally spaced strips or strands
	...Intersecting strips or strands
819	....Strip having orifice encompassing intersecting strip
820	....Strip interfits edge slot of intersecting strip
821	.Separate attached, elongated edging or stiffener
822	..Overlaps panel edge face and panel major face
823	...U-shaped channel overlaps panel edge and major faces
824	....Separate strips form U-shaped channel
825	.....With mechanical fastener (e.g., nail, bolt, screw, etc.) for securing strips
826	....With mechanical fastener (e.g., nail, bolt, screw, etc.) for securing channel
827	..Overlaps major face only
828	...Spaced inwardly of edge face
829	..Overlaps edge face only
830	...Extends laterally of edge
630	IMPERFORATE PANEL WITH INTEGRAL REINFORCING
631	CORNER FORMED BY LAMINATE WITH BENT FACING SECTION
632	SHAFT OR OPENWORK, AXIALLY EXTENSIBLE
633	OPENWORK, E.G., TRUSS, TRELLIS, GRILLE, SCREEN, FRAME OR REBAR CHAIR
634	.Truss with unitary chord and web, e.g., sheet metal
635	..Expanded metal
636	..Web portions connected between chords
637	.Superimposed three-dimensional units
638	..Diagonal and horizontal bracing extend from juncture of sections
639	.Curvilinear or peaked truss
640	..With means to vary camber
641	..Collapsible or demountable
642	..Laminated
643	..Structurally related trusses
644	..Arcuate chord
645	.Components adjustably or collapsibly connected
646	..Three-dimensional space-defining
647	.Wire connected to flange of I- or T-type member
648	.Three-dimensional space-defining
649	..Mast with distinct terminal structure, e.g., horned
650	..Parallel trellises or sheets held by disparate connector
651	..Additional laterally projecting means
652	...Spacer-positioner
653	..Circumferential encircling element, e.g., helical
654	..Internal transverse spacer for runners
655	..Inclined struts or ties meeting at intermediate runners
656	.Outside corner or peripherally bordered, i.e., framing
657	.."X" or corner brace
658	..Integral corner, e.g., bent shaft
659	.Embedded type free, discrete elements, e.g., set or rings
660	.Fabric or lattice, e.g., indeterminate grating
661	..Perforated with attached filaments
662	..Plural facially contacting layers
663	..Discrete component; wholly internal, e.g., architectural grille
664	..Intersecting strips or strands
665	...Separate connector at crossing
666	...Face-to-face slats, edges coplanar
667	....Slat orifice encompasses slat
668	....Interfitted edge slot
669	...Dissimilar cross section between crossings
670	..Expanded metal
671	...Laterally displaced sections, e.g., corrugated
672	....Nonexpanded, channel-shaped ribs
673	..Perforated
674	...Corrugated
675	...Material laterally displaced
676	..Mesh type with attached discrete bodies
677	.Spacer-positioner, e.g., rebar chair
678	..Adjustable support
679	..Penetrator with limiting stop
680	...Hook-type head integral with penetrating leg
681	...Penetrating leg traversing separate stop
682	....Cup, bulb or U-shaped stop
683	....Block-type stop
684	..Support member retaining means movable or deformable to final position
685	...Crossed supported member type
686	...Crossed supported member type
687	..Plural feet or seat
688	...Units attached to separate connector
689	...Single seat
690	.Side-by-side terminus shafts, e.g., truss
691	..Truss with inclined lower chord
692	..Truss with compound chord
693	..Diagonal bracing
694	...Continuous serpentine, e.g., Warren truss
695	...X-braced, i.e., connectors crossing
696	..Sheet metal-type spacer-connector
697	.Shaft with truss-braced cross-arm
698	ASSEMBLED IN SITU TYPE ANCHOR OR TIE
699	.With feature engaging form
700	..Integral penetrating means
701	..Separate forms fastener within socket member
702	.Depending cantilevered seat portion, e.g., joist anchor
703	.Traversing-type anchor
704	.Socket type
705	..Helical anchoring feature
706	..Traversing rod spaced internally of socket base
707	..With discrete attached embedded member
708	..Separate base and wall members forming socket
709	..Selective stops for element held
710	..Elongated supporting track type
711	..Internal stop for head of element held
712	.Sheet or wire tie
713	..Separably connected sections
714	..Integrally connected different form-fastening feature
715	..Sheet form with tabs oppositely extending from base sheet
716	IN SITU ATTACHED-TYPE CHANNEL OR TRIM STRIP, E.G., EDGING
717.1	.With separate means attaching to substructure
718.1	..Interengaging fastener and strip edges or flanges

719	CROSSED REINFORCING RODS WITH CONNECTOR
720	SHAFT, I.E., ELONGATED RIGID STRUCTURE
721	.Plural or composite, with intersecting member, e.g., bracket
722	.Stonelike component, e.g., concrete
723	..With feature resisting transverse loading, e.g., beam
724	...Dissimilar shell
725	..With dissimilar shell
726	.End-to-end connected sections
727	.Dissimilar material shell or facing
728	..Partial sleeve or collar
729	.I-beam cross section
730	.Longitudinally related striplike sections
731	..Forms hollow enclosure, e.g., box beam
732	..Angular component, e.g., L, T, Z section
733	.With attached projections, e.g., shear member
734	.Sinuous curve type
735	.With struck-out projections
736	.Axially twisted type
737	.Ribbed
738	..Longitudinal
739	...Normal
740	.Axially and peripherally spaced projections
741	PROCESSES
742	.Utilizing the earth
743	.Filling preformed cavity with flowable or sheet material
744	..Grouting or pointing
745	.Forming unit and moving into position
746	.Adhering preformed sheet-form member
747	.Assembling exposed modules, e.g., bricklaying, roofing, etc.
748	..Overlapping or interfolding edges, e.g., shingling
749	MACHINE OR IMPLEMENT
750	MISCELLANEOUS
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
	DIGESTS
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
DIG 1	Hand tools for assembling building components
DIG 2	Masonry lattice or openwork
DIG 3	Trailer or mobile home skirt
DIG 4	Magnetic connecting means for building components
DIG 5	Designed for thermal distortion
DIG 6	Toothed connecting means
DIG 7	Synthetic building materials, reinforcements and equivalents (e.g., Rubinstein pats.)
DIG 8	Imitation beams
DIG 9	Structure including reclaimed component (e.g., trash)
DIG 10	Polyhedron
DIG 11	Mobile-structure stabilizing anchor
DIG 12	Temporary protective expedient
DIG 13	Velcro
DIG 14	Shelter shaped to article configuration
DIG 15	Seal for corrugated sheets

394 MATCHBOOK MAKING
395 .Methods
396 METHODS
397 .Applying a partial cover
398 ..Partial covering of multiple cans, bottles (e.g., six-pack carrier)
399 ..Banding
400 .With adsorption or absorption of contents
401 .With nonreactive packaging materials
402 .With inhibitor
403 .Gas filling and/or evacuating and closing
404 ..With solder or wax sealing
405 ..Evacuating only and closing
406 ..With gas igniting
407 ..With steam filling
408 ..Including evacuating
409 .Annular package
410 .Forming a cover adjunct or application of a cover adjunct to a cover
411 ..Printing or protective coating
412 ..Package opening device (e.g., tear strip)
413 ..Handle
414 ..Binding string
415 ..Strip, stamp, nonencircling label, or space filler
416 ..Fastening or sealing
417 ...Applying the fastener to a gathered bag neck (e.g., staple or clip)
418 ...Sewing
419 ...Encircling sealing strip (e.g., adhesive tape)
420 ..For preformed receptacle with separate closure
421 ...Including gasket compressing
422 ....Against side of receptacle
423 ...Including casting or molding
424 ...Constricting closure by binding
425 .Sterilizing complete package
426 .Sterilizing cover only
427 .Skin packaging (e.g., vacuum forming by conforming cover over contents)
428 .With contents treating
429 ..Folding
430 ..Winding
431 ..Liquid treating
432 ..Vacuum or gas treating
433 ...Receptacle forming
434 ...Flexible preform cover (e.g., bags, pouches)
435 ..Cutting
436 ..Compacting or stretching
437 ...Agitating (e.g., vibrating or jarring)
438 ...Before association with cover material
439 ....By simultaneously conveying and compressing
440 ..Heating or cooling
441 .Conforming by stretching or shrinking of cover over contents
442 ..By heating
443 .Group forming of contents into a unit
444 ..Of slender rod-shaped contents (e.g., cigarette)
445 ..Of diverse contents (e.g., can and coupon)
446 ..With orienting (e.g., turning labels face out)
447 ..Stacking upon another before packaging
448 ..Single layer forming
449 .Plural covers
450 .Enclosing contents within progressively formed web means
451 ..Vertically formed, filled, and sealed tubular package
452 .Forming or partial forming a receptacle and subsequent filling
453 ..Forming a pocket or depression in cover material by applying heat or pressure (e.g., stretch forming)
454 ...Forming a capsule
455 ..Making a pocket in web material by folding and side sealing (e.g., flat bag making)
456 ..Forming three-dimensional receptacle from web or blank
457 ..Opening or setting up collapsed, preformed receptacle
458 ...Box, carton
459 ...Bag, tube, center-folded web
460 .Envelope or triangular flap fold
461 .Wrapping contents including cover forming
462 ..With slotted or scored wrapper blank
463 ..With heat sealing of wrapper
464 ..Cup or pouch forming about contents from web or blank
465 ..Cinching or wiping around to form initial wrap
466 ..U-fold forming initial wrap
467 .Filling preformed receptacle and closing
468 ..Opening prior to filling and closing
469 ..Flexible, expandable receptacle (e.g., bag, tube)
470 ..Aerosol container
471 ..With separate closure attaching (e.g., cap or plug)
472 ..With protective media (e.g., shock absorbing)
473 .Filling preformed receptacle
474 ..With diverse contents
475 ..With successive like contents or layers of like contents
476 .Closing package or filled receptacle
477 ..By heat sealing
478 ...Separate closure
479 ...Of preformed nonfreestanding container deformed by contents (e.g., bag, tube)
480 ..Closing preformed container deformed by contents
481 ...By collapsing mouth portion (e.g., to form single flap)
482 ....Folding or rolling-in
483 ....Twisting
484 ..Closing a preformed, freestanding, rigid or semi-rigid container (e.g., box, carton, bottle)
485 ...By applying a separate preformed closure (e.g., lid, cap)
486 ....With receptacle deforming or shaping
487 ....With preliminary closure shaping
488 ....By conforming closure to container
489 ....By plugging closure into container
490 ....By screwing closure on container
491 ...By folding multiple preformed flap
492 .Opening only
48 MULTIPLE BOTTLE OR CAN CARRIER TYPE PACKAGE
49 BOTTLE IN SHAPED COVER OR CARTON
50 PACKAGE UNFOLDING OR OPENING WITH INSERTION OF ADDITIONAL CONTENTS
51 REGISTER CONTROL
52 WITH MEANS RESPONSIVE TO A SENSED CONDITION
53 .Separate delivery of incomplete or defective package
54 .Separate delivery of incomplete or defective contents or contents group
55 .Concurrent control of contents and receptacle feeds
56 ..Stopped by contents, manual reset

	WITH MEANS RESPONSIVE TO A SENSED CONDITION
	.Concurrent control of contents and receptacle feeds
	..Stopped by contents, manual reset
57	...By absence of contents
58	..Triggered by presence of contents
493	.Of individual contents or group feed or delivery
494	..Responsive to incomplete group or subgroup (no group - no feed)
495	..Responsive to complete group or subgroup
496	...Responsive to the presence of only the lead article of a completed group
497	....Plural lead articles
498	...By sensing each individual article of the group or subgroup
499	....Individual sensors (one for each article in the group or subgroup)
500	....Single sensor for successively sensing each article of the group or subgroup (e.g., counter)
501	..By totalizing of individual contents
502	..By weight of contents
503	..By volume of contents
504	..By dimension of contents
505	..Responsive to presence or absence of cover material (e.g., wrapper, receptacle, lid)
506	...Responsive to absence of cover material (no can - no fill)
64	.Of receptacle or cover feed or adjunct feed or application
65	..Of marker by defective package component
66	..Severed length determined by contents size
67	..Responsive to presence or absence of preformed receptacle
68	...With closure ejection means
69	...During infeed
70	...With solenoid control means
71	...With intermediate clutch
72	...And presence or absence of closure
73	..Skip feed by absence of contents
74	..Triggered by presence of contents
75	.Of package and filled receptacle closing or opening
76	..Triggered by presence of package
77	INTERRELATED OR SAFETY CONTROLS
507	WITH ALARM, SIGNAL, OR INDICATOR
508	.Visual or audible alarm
79	GAS FILLING AND/OR EVACUATING OF RECEPTACLE AND CLOSING
80	.Including soldering means
81	..Solder and/or flux deposit only
82	..Iron application only
83	...Electric arc or resistance type
84	.Pressure responsive and/or regulation
85	.Enclosure responsive
86	.Within enclosure
87	..With screen or graduated orifices
88	..For receptacle head only
89	..Machine positioned receptacle and/or closure
90	...Through lock or valve means
91	....Rotary pocket or pockets
92	.....Common in-out
93	......With separate coacting pockets
94	....Including closure handling means
95	...Multiple individual receptacle chambers
96	....Integral unit
97	..With closure assembling means
98	...Resilient hold-down
99	...Gravity plunger or platen
100	....With drop control
101	...Mechanically actuated plunger or platen
102	....With equalizer means
103	...Atmospheric pressure
104	....With fluid system intensifier
105	....Flexible diaphragm
106	....Pressure platen
107	.....Individual receptacle
108	......Base contacting
109	..With cap lifter
110	.Within tunnel
509	SKIN PACKAGING
111 R	WITH CONTENTS TREATING
111 RC	..With reactive chemical
510	.Vacuum or inert atmosphere
511	..With receptacle forming
512	..With preformed bag
113	.Reshaping
114	..Coil spring encasing
115	..Cushioning material inserting means (e.g., pill bottle cotton)
116	..Folding or rolling
117	...Sheet material or garments
118	....Rotary winding
119	.....Slotted or divided mandrel
120	....Slot and blade doubling
121	..Crushing
122	..Molding or plastic deformation
513	..Cutting
514	...Food or edible material
515	....Fruit or vegetable
516	....Bread, pastry, or confection
517	....Meat or fish product
518	....Diary product
519	.....Butter
520	...Film, sheet or weblike material
521	...Stuffing (e.g., mattress ticking)
522	...Strand, tube, or rodlike material (e.g., drinking straw)
523	..Compacting or stretching
524	...Mattress filling
525	...By agitation
526	...Compressing with or through cover
527	...Compressing contents within preformed receptacle
528	...Compressing while engaging contents with wrapper or band
529	...Compressing before packaging
530	....Through restricted passage
127	.Heating or cooling
128	WITH COVER ADJUNCT APPLICATION OR FORMATION
129	.Closure spot, packing disk, or sealing gasket
130	.Disk seated into and depressed with portion of hood
131	.Printing or protective coating
132	.Lever actuator for closure constriction
133	.Package opening device
134	.String or handle
135	..Binding string
136	...Bottle hood securing
137	.Strip, stamp, gap filler or non-encircling label
138 R	.Staple or clip
138 A	...Bag neck tying
139	.Sewing
139.3	.Encircling sealing strip
140	WITH COVER MATERIAL PRODUCTION
141	WITH FUGITIVE PRECONDITIONING OF COVER MATERIAL
142	TAPERED OR HEADED ARTICLES
143	.Inverting one or more units
144	..Receptacle reversing
145	FACING (E.G., FRUITS AND VEGETABLES)
146	.Variable contour facing plate

147	GROUP FORMING OF CONTENTS UNIT AND SUBSEQUENT OR FURTHER PACKAGING
148	.Long slender articles (e.g., cigarettes)
149	..Adjacent rows of unequal numbers
150	..Superposing rows
151	..Hopper with multiple channeled outlet
152	.Formed in vertically spaced ways and simultaneously removed
153	..Plural groups
154	.From plural or different supply sources
155	..Diverse forms or shapes of units
156	...Package reinforcing sheet or trough
157	...Insert or separating sheet
158	.Joined receptacle or pockets
531	.Layer, stack, or column
532	..Assembling, gathering, and stacking coins or similar disclike articles
533	..Assembling sticks of chewing gum
534	..Receptacle advances as row groups are deposited therein
535	..Lowered support or raised wall
536	...Within receptacle
537	..Forming successive coplanar layers and depositing in cover means
538	...Varying strokes of depositing means
539	..Simultaneous deposit to fill compartmented receptacle
540	..Stacking one article or group of articles upon another
541	...Building up the stack from the bottom
542	..Grouping articles on edge in a linear relationship
543	..Forming single generally horizontal groups comprising plural rows and columns
544	..Orienting one or more units of the group
167	COMBINED
168	SELECTIVE OR ALTERNATE SUPPLY OF PLURAL COVERS AND/OR PLURAL CONTENTS
169	SLIDING TRAY AND SHELL TYPE PACKAGE
170	PLURAL LAYER PACKAGE MATERIAL
171	.Plural packages in outer cover
172	.Concurrently formed with multi-layered blank
173	.Filling preformed receptacle and subsequent covering
174	.Wrapping and subsequent filling of preformed receptacle
175	.Lining preformed receptacle
176	.At least one layer a band
545	PROGRESSIVELY SEAMED COVER WEB OR WEB FOLDS
546	.Multirow
547	.With package severing and subsequent closing of severed end
548	.With closing of web between package units
549	..By twisting
550	..Longitudinal tube formed from single web
551	...Vertically disposed tube
552	....Concurrent severing
553	..Plural webs
554	...Vertically disposed tube
555	...Simultaneously longitudinal and transverse seaming
556	APPARATUS FOR CONTRACTION OF COVER BY STRETCHING OR SHRINKING
557	.By heat shrinking
558	APPARATUS FOR FORMING OR PARTIALLY FORMING RECEPTACLE AND SUBSEQUENTLY FILLING
559	.Forming a pocket, depression, or hollow compartment by application of heat or pressure (e.g., stretch forming)
560	..Capsule
561	..Molding or extruding a container
562	.Forming a pocket or pouch by folding and side sealing (e.g., flat bag making)
563	.Forming a receptacle around a mandrel or former and removing therefrom prior to filling
564	.Forming by opening or setting up collapsed receptacle
565	..Gable-top carton (e.g., milk carton)
566	..Horizontally loaded box or carton
567	..Flexible tubular stock - preformed continuous tube
568	..Longitudinally prefolded web stock
569	..Letter-type envelope
570	..Bag or sack
571	...Magazine
572	....Filled before removal from magazine
573	....Combined extractor and opener
574	.Forming receptacles whereby the receptacle is subsequently filled while on the forming means
575	..Hollow forming mandrel or plunger
576	...Tubular receptacle stored on mandrel
577	...Gathered mouth receptacle
578	..External former
579	...Former mounted on conveying means
580	PARTIAL COVER APPLICATION
581	.Spindle or core
582	.Band or tube
583	..Bag neck banding
584	..Cigar banding
585	..Preformed tube
586	..U-fold forming initial banding
587	..Applied by rotation of contents
588	..Applied by rotation of band
589	..Applied by guiding band end about contents
590	..Applied by manipulating opposed band ends about contents
591	..Applied about series contents
592	..Applied by manual operation
593	..End or band interleaved with contents (e.g., book or magazine band)
594	.Uncovered reduced projection or handle (e.g., lollypop)
201	CONVERTIBLE
202	PLURAL LINE PACKAGING
203	WRAPPING MACHINES
204	.Annular package
205	.Granular contents material
206	.Packet or envelope type
207	.Notched or corner-slit cover blanks
208	..With cover notching or slitting
209	.Prepositioned cover and contents transported to wrapping means
210	.Cinched or wiped around initial wrap
211	..By rotation of contents
212	...Stacked contents (e.g., coins)
213	....Hand manipulated type
214	...Cover at least in part adhered to contents
215	...Apron type
216	...Rolling movement
217	...With end twisting
218	.Fixed package support during wrapping
219	..Hand manipulated type
220	.Cover-wiping passage or pocket for initial wrap
221	..Cup- or pouch-forming initial wrap
222	...Four-sided corner flap forming chute or pocket
223	....Package advanced through succeeding fold chute
224	....Package advanced by folding carrier
225	.....Rotary turret or carrier
226	...With end crimper or in-folder
227	...With end twister

WRAPPING MACHINES
.Cover-wiping passage or pocket for initial wrap
228 ..U-fold forming initial wrap
229 ...Outturned longitudinal seam
230 ...Package advanced through succeeding fold chute
231 ....Via intermediate non-folding carrier
232 ...Package advanced by folding carrier
233 ....Continuously moving carrier
234 ....Rotary turret or carrier
235 DEPOSITING ARTICLES AND ARRANGING MATERIAL IN PREFORMED RECEPTACLES
236 .Long slender articles (e.g., matches)
237 .Plural filling stations and/or contents sources for single receptacle
238 ..Diverse forms or shapes of units
239 ..Article and fluent material
240 ..Successive filling stations
241 .Contents support extends through receptacle (e.g., garment baggers)
242 .Bottom filling
243 ..With turnover
244 .Successive deposits of articles
245 ..Lowered support
246 ..Compartmented receptacle
247 .Simultaneous deposit of plural articles
248 .With means to retard free fall of articles into receptacle
249 .With movement of receptacle to or from filling station
250 ..With means to supply successive receptacles
251 ...Contents or receptacle transfer between conveyers
252 ....By reciprocable pusher
253 ...Rotary
254 .Disc packers
255 .Guide or inserted form or support for article contents
256 ..Garment baggers
257 ..With size adjusting means
258 ..With injector (e.g., filling plunger)
259 ...Endless belt
260 ..With retractible, collapsible or separable portion to permit withdrawal or to dump contents
261 ..Expansible
262 ...Spring form
263 ..Receptacle divider
264 WITH MEANS APPLYING CLOSURES OF INTERNALLY STOPPERED RECEPTACLES
265 WITH MEANS APPLYING ATTACHED OR CONNECTED CLOSURES OF BAIL STOPPERED RECEPTACLES
266 R FILLING PREFORMED RECEPTACLES AND CLOSING
266 A ..Envelopes
267 .With compound fill-close station
268 .With common fill-close stations
269 ..Closing mechanism tripped by vented air
270 ..Closure release by withdrawal of fill means or receptacle
271 ..Unidirectional infeed motion only
272 ..Turret mounted (plural heads rotatively indexing and progressively acting)
273 ..Swivel or slide relation to receptacle aperture
274 ..Including closure port valve means
275 ..Closure within or forming wall of pressure chamber
276 .Diverse heads rotatively indexing and progressively acting (turret)
277 ..Planetating or epicyclic orbit
278 ..Concentric orbits
279 ..Plural axes
280 ...Common infeed means
281 .With separate closure
282 ..Endless conveyor for receptacle
283 ..Common infeed means for fill and close means
284 .Opposite end closing
285 CLOSING PACKAGES AND FILLED RECEPTACLES
286 .Plural independently closed covers
287 .Separate closure applying
288 ..Cover to milk can
289 ..With preliminary receptacle shaping
290 ..With preliminary closure shaping and/or treatment
291 ...Unfolding, opening and/or stretching capsules or cots
292 ....With suction or blast
293 ....Removal from support by receptacle
294 .....Stretcher cammed by receptacle
295 ....With cot dispenser or ejector
296 ...Cutting and/or shaping means
297 ....Concentric with or at infeed of closure
298 .....Blank cut-off only
299 ..Receptacle delivery by case or row
300 ..With receptacle support and/or feed by shoulder engagement
301 ..Receptacle delivery to alternately acting headers
302 ..Sequentially acting plural headers
303 ...In vertical orbit
304 ...With single closure supply stack for headers
305 ..By hand operation with magazine supply
306 ..Closure delivery from supply into or below bottom of header
307 ...Closure delivery into inverting header
308 ...Turret supporting closure below header
309 ..Closure delivery from supply through top of header
310 ..Closure delivery from supply laterally into header
311 ...Closure at infeed normal to closure in stack
312 ...Horizontal infeed
313 ..Closure selected by moving receptacle
314 ...With subsequent securing
315 ...With wiper or leveler means
316 ....Roller
317 ..Screw or lug closure applying means
318 ...With reverse rotation means
319 ..Closure inserting means
320 ...With vent means
321 ...Closure flexing means (straightening or buckling)
322 ...With closure guide withdrawal means
323 ....Receptacle push-off means
324 ...Closure compressing means
325 ....Roller
326 ....Sliding segment die
327 ....Pivoted segment die
328 ...Plunger structure
329 ..Closure securing means
330 ...Internal
331 ...Thread and crimp
331.5 ...Screw or lug type
332 ...Reverse closure flexing or turn-back means
333 ...Repeated on different portions of same closure
334 ...Rotary tool or die
335 ....With centrifugal means
336 .....Cam release
337 .....Centrifugal release
338 ....Planetating
339 .....Axially rocking
340 .....Radial, rocking or axial pivot

	CLOSING PACKAGES AND FILLED RECEPTACLES
	.Separate closure applying
	..Closure securing means
341	...Die
342	....With closure support
343	.....Magnetic
344	....Sectional
345	.....With resilient faces
346	......Split or two part die
347	......Helical spring
348	.....Fluid pressure actuated
349	.....Rotary cam
350	.....Toggle
351	.....Axial cam
352	......Convex
353	......Radially reciprocating jaws
354	.....Bell crank
355	.....Biased for deformation
356	.....Split or spring collet type
357	....Resilient annulus
358	.....Helical spring
359	....Filler or forcer
360	.....Reverse flex of resilient element
361	.....Fluid pressure or resilient element
362	.....Confined elastomer block
363	....With handle
364	....Second class lever mounted
365	....Toggle mounted
366	...By crimping of receptacle
367	..Orienting or aligning means
368	..With height compensating means and/or package ejection means
369	...With package ejection means only
370	.Twisters
371	.Outturned seam closure
372	..With excess cover material trimming
373	..Heating or cooling means
374	.Multiple flaps
375	..Heating or cooling flap seam
376	.Single flap type closure
377	..Hinged cover
378	.Pleated and/or folded cover overhang
379	..Heating or cooling means
380	..Serially formed
381 R	RECEPTACLE OPENING OR FLAP MANIPULATION
381 A	..Separate closure removing
382	.Hinged closure opening
383	.With adhesive applicator member
384	.Bag opening
385	..Air blast
386	..Suction
387	FLAP OR SEAM HOLDERS
388	.Heated or cooled
389	COVER FEEDING OR FEEDING AND CUTTING
390	AIDS TO MANUAL PACKING
391	.Power-driven conveyor
392	.Receptacle inversion
393	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTION
	******************************
900	CAPSULES
	******************************
	DIGESTS
	******************************
DIG 1	Bacon and franks packaging
DIG 2	High frequency electric sealing
DIG 3	Sealing electron tubes

CLASS 54 HARNESS

1	MISCELLANEOUS
71	BREAKING AND TRAINING DEVICES
72	.Leg spreaders
77	OX YOKES
2	TRACK
3	YOKES
24	HALTERS
85	.Connectors
6 R	BRIDLES
6 A	..Combination halter and bridle
7	.Bits
8	..Mouthpieces
9	...Double
10	.Blinds
11	..Covering and uncovering
12	.Brow bands
13	.Crown loops
14	.Gag runners
15	.Stranglers
57	UNDERCHECKS
16	CHECKREINS
17	.Hook loops
61	CHECKHOOKS
62	.Movable keeper
70	CHECKING AND UNCHECKING DEVICES
35	MARTINGALES
36	REINS
74	REIN HOLDS
63	TERRETS
73	REIN GUARDS
34	HITCHING STRAPS
64	HITCHING STRAP HOLDERS
18 R	COMBINED COLLAR AND HAMES
18 A	..Padded
18 B	..Padded and separable
19 R	COLLARS
19 A	..Pneumatic
19 B	..Adjustable
20	.Breast
21	.Fasteners
25	HAMES
26	.Fasteners
29	..Top
27	..Lever
28	..Strap
30	HAME AND TRACE CONNECTORS
31	.Adjustable
32	HAME TUGS
33	.Adjustable
58	BREAST STRAPS
59	.Shields and connectors
50	THILL TUGS
51	.Open
52	TRACES
53	.Whiffletree connectors
54	TRACE CARRIERS
55	.Hook
56	TRACE END SUPPORTERS
69	ATTACHING AND DETACHING DEVICES
37	SADDLES
38	.Harness
39	..Cart
40	..Pivoted side plates
41	..Cushions
42	..Seat and tree connectors
43	..Tug bearers
44	.Riding
45	..Side
46	..Attachments
47	STIRRUPS
49	.Safety
49.5	.With spurs
48	.Elastic
23	GIRTHS
4	BACKBANDS
5	BREECHING
22	CRUPPERS
65	PADS
66	.Back
67	.Neck
68	.Fasteners
87	LOOPS
	TRIMMINGS
75	.Covered
76	.Ornamental
78	TAIL HOLDERS
79	BLANKETS
80	BONNETS AND SHIELDS
81	FLY NETS
82	HORSE BOOTS
83 R	SPURS
83 A	..Adjustable
84	SUPPORTS

1 PROCESSES OF GAS SEPARATION
2 .Involving electric or magnetic field
3 ..Magnetic separating
4 ..And maintaining measuring or controlling gas characteristic
5 ..And adding solid, gas or vapor
6 ..And nonelectrical gas separaing
7 ...By or with liquid addition to gas
8 ....Liquid addition precedes electrical precipitating
9 ...By heating or cooling
10 ..And adding liquid to gas
11 ..And heating or cooling
12 ..And removing material from collector electrode
13 ...By scraping, vibrating or liquid flushing
14 ..Continuously moving electrode
15 .Sonic type
16 .By gas diffusion into solid barrier
17 .Involving difference in molecular velocity, density, or momentum of gases
18 .Involving condition or characteristic measuring or regulating (e.g., conductivity)
19 ..Of acidity or nonaqueous constituent
20 ..Of temperature or humidity
21 ..Of pressure or pressure differential
22 .By using liquid-solid slurry
23 .Involving compressing and cooling gas
24 ..With heat absorber mixed in gas
25 .Involving plural pressure varying or indirect heat transferring steps on solid sorbent or gas
26 ..With sweep gas for carrying desorbed gas
27 ..heat transfer steps
28 ...On solid sorbent
29 .Water from gas by sorptive or oleaginous agent
30 ..Plural separating treatments of gas by same or different agent
31 ...And regenerating of any agent
32 ..And regenerating of agent
33 ...Solid agent
34 ....Moving bed
35 ..Solid sorbent
36 .Degasifying liquid or suspension in liquid; or with liquid denuding
37 ..By dissolving gas or absorbate in selective solvent
38 ..Plural successive degassing treatments on same liquid or portion thereof
39 ...Boiler feed water deaerating
40 ...Pressure varying or indirect heat transferring
41 ....With liquid flow modifying (e.g., spraying, deflecting, etc.)
42 .....And heat transferring
43 ....At least one pressure varying treatment
44 .....And gas contacting
45 ..And emulsion breaking or multiple liquid separating
46 ..And subsequent handling of evolved gas or residue liquid
47 ...Evolved gas removed by sweep gas
48 ...Additional gas sorbing by or recycling of liquid
49 ...For indirect heat exchanging
50 ....Gas is condensed
51 ...Gas recycling or further separating
52 ..By gas contacting, agitating, or liquid flow modifying
53 ...Gas contacting
54 ....Gas is steam
55 ..By reducing pressure
56 ..Subsequent to sorbing by liquid
57 .Involving reducing pressure
58 ..Pressure over solids reduced
59 .With denuding of solids by charge gas or steam
60 ..Moving solid bed
61 ...Steam
62 ..Charge gas
63 .Separating acetylene
64 ..Solution in liquid
65 ...With separate dissolving step for other constituent
66 .Separating inert gases (Ne, Xe, Rn, A, etc.)
67 .Chromatography type
68 .Separating inorganic vapors, gases, mists (including carbon oxides and cyanides)
69 ..Nonsorptive type or separation
70 ..Ammonia or ammonium compounds
71 ..Halogens or their compounds
72 ..Metals or their compounds
73 ..Sulphur or phosphorus or their compounds
74 .On solid sorbent
75 ..Molecular sieve
76 ..With preliminary separation
77 ..Moving sorbent bed
78 ...Physically moved enclosing housing
79 ...Gravitating bed
80 .Involving heat exchanging or fluid contacting
81 ..Cold wall-hot wall thermal diffusion
82 ..Condensing to solid
83 ..Fluid contacting
84 ...Fluid is liquid
85 ....And separation of liquid from mixture with liquid or solid
86 ....And agitation or beating of liquid body
87 ....And foaming or defoaming
88 ....To separate gasoline from gas
89 ....With recycle of liquid or gas
90 ....On surface extending mass, or with filtering or deflecting of gas-liquid mixture
91 .....Moving deflecting or filtering surfaces
92 .....Rotating gas-liquid mixture
93 ....In plural serial stages
94 .....Liquid sprays
95 ....Gas discharged against or beneath surface of liquid body
96 .And cleaning of filter or deflector
97 .Filtering
98 ..Through particulate solids
99 ...Moving bed
100 MAGNETIC SEPARATING MEANS
101 ELECTRICAL PRECIPITATORS, (E.G., ELECTROSTATIC TYPE)
102 .Including radio-active or ultraviolet light ionizer
103 .Electrostatically induced charge (e.g., by gas flow)
104 .With signal or alarm means
105 .Voltage or current sensing and control means
106 .With automatic control of gas, treating or conditioning means
107 .With charged solid or liquid particle addition to gas
108 .Electrode cleaner, apparatus part flusher or discharger or wet collector (e.g., wet film electrode)
109 ..Electrode or part thereof moved on or against another

ELECTRICAL PRECIPITATORS, (E.G., ELECTROSTATIC TYPE)
.Electrode cleaner, apparatus part flusher or discharger or wet collector (e.g., wet film electrode)
110 ..Shut-down or voltage adjustment inter-related with cleaning (e.g., gas flow or current)
111 ...Cyclical or sequential operation
112 ..Vibrating, jarring or rapping means
113 ..Movably mounted electrode
114 ...Nonliquid contact cleaning
115 ...Immersion into liquid bath
116 ....Endless belt carried or belt type electrode
117 ..Fluid contacting means (e.g., suction means)
118 ...Liquid applying means for electrode (e.g., projection type)
119 ....Weir or overflow wet film type
120 ...Apparatus purging or flushing means (e.g., gas or liquid)
121 ..Electrode scraping, brushing or wiping means
122 .With vapor or liquid contact (separation, cooling or conditioning)
123 .With alternating current field
124 .With serially arranged diverse separator
125 ..Gas flow bypass or regulation to second stage
126 ..Precedent non-electrical separator
127 .With spiraling inflow, centrifugal or whirl generating surface means
128 .With gas flow distribution or control means
129 ..For contact with ionizing electrode or uniform flow in treating zone
130 ..Collecting electrode modified or arranged to affect gas flow
131 ...Total gas flow through interstitial, perforated, foraminous, or porous collector
132 ....Zig-zag running length type
133 ..Flow regulation means for parallel sections
134 .With gas treating or conditioning means
135 ..Heating or cooling means
136 .Diverse or serially distinct electrical fields
137 ..One set of electrodes common to plural fields
138 ..Serially arranged ionizing and collecting or agglomerating fields
139 .With voltage supply means or circuitry (e.g., power pack, closure interlock, etc.)
140 .Electrode retaining or supporting means
141 ..Plural electrode unit assembly type (e.g., unitized)
142 ...Disposable (e.g., collapsible or foldable cardboard)
143 ...Parallel disc or plate collector cell
145 ..Parallel disc or plate collector
146 ..With insulation feature
147 ..Tensioning means
148 ..Suspensory means
149 ..Movably supported during use or for orientation
150 .With specific discharge electrode (e.g., coil, mat or corona suppression)
151 ..Filamentary or filar form
152 ..Sharpened point, serrated or tip discharge
153 ..Vibration damping
154 .Specific collector means (e.g., sheet type or running length web)
155 ..Dielectric material containing or covering
156 ..Multiple similar elements or sections (e.g., built up)
157 ..With arc over or back discharge suppression means (e.g., drip points)
158 BARRIER FOR SELECTIVE DIFFUSION OF GASES
159 DEGASIFYING MEANS FOR LIQUID; OR WITH MEANS STRIPPING SORBED FLUID FROM SOLID
160 .With automatic or timer control
161 ..For solids desorbing system
162 ...Timer control
163 ...Pressure, temperature or humidity responsive
164 ..Level responsive
165 ...Float control of separator inlet or outlet valve
166 ....Plural floats
167 ....Control of plural valves
168 .....One is gas outlet valve
169 ....Control of outlet valve
170 .....Gas outlet valve
171 .With separator for multiple liquids
172 ..Reservoir with three or more outlets, each for diverse fluid
173 ...Spherical
174 ...Horizontal
175 ...With heat exchanger
176 ...With internal inlet liquid diverting surface
177 ....Helical or spiral path
178 .Defoaming
179 .Plural solid sorbent beds
180 ..With means to separate desorbing fluid
181 ...Movable beds
182 .Tank or tank part movably mounted on support (e.g., de-aeration of aircraft lubricating oil)
183 .With mist eliminator or de-entrainer in gas path
184 ..Gas spinner or whirler
185 ..Baffle, filter or screen
186 ...Plural, serially arranged
187 ....Concentric tubular members
188 .....Alternate central and peripheral gas paths
189 .Means to reduce pressure
190 ..And flow modifier
191 ...Helical path
192 ...Baffle
193 ....Plural baffles in series
194 ...Spray nozzle
195 ..And heating or cooling means
196 .By gas contactor
197 ..Chromatography type
198 ..Steam
199 .Flow slinger, spreader, rotation controller or disperser
200 ..With preliminary heat exchanger
201 ..Upstream of, surrounding or forming discharge end of inlet
202 ...Plural, serially arranged
203 ...Rotator
204 ....Tangential inlet
205 .....With tangential outlet
206 ..Plural, discrete members in series
207 ..Rotation causing trough
208 .By heating means
209 COLD WALL-HOT WALL THERMAL DIFFUSION TYPE SEPARATOR
210 WITH AUTOMATIC CONTROL MEANS FOR GAS OR NON-GASEOUS CONSTITUENT DISCHARGE
211 .Ejection of residue container or separating unit (e.g., filter or bag)
212 .Gas cutoff or diversion

WITH AUTOMATIC CONTROL MEANS FOR GAS OR NON-GASEOUS CONSTITUENT DISCHARGE
.Gas cutoff or diversion
213 ..Gas pressure responsive separate reactor surface means
214 ..Bag presence responsive means
215 ..By response to accumulated separated liquids or solids
216 ...By float
217 ..Temperature or humidity responsive
218 .Regulation of separated constituent discharge
219 ..By liquid accumulation responsive float
220 WITH LIQUID CONTACTING MEANS (E.G., GAS OR MEDIA CLEANING)
221 .Drip openings from deliquescent material holder
222 .With indirect heat exchange means for gas
223 .Diverse means for contacting or applying liquid
224 .For portion of total gas flow
225 .Liquid control responsive to flowing gas force
226 .With means varying gas flow to control saturation or dispersion
227 .With treating liquid automatic control or level maintaining means
228 .With treating liquid conditioning or separating means
229 .With means to control liquid return flow to supply or sump
230 .Movably mounted liquid distributor (e.g., moving nozzle)
231 ..Distributor is gas contacting means (e.g., wet pad)
232 ...With distributor immersing means
233 .Liquid applied to particulate or porous media for gas contact
234 ..Media extends into bath
235 .With fixed gas whirler or rotator means for gas separation
236 ..Liquid applied in central of concentric flow paths
237 ..Liquid contact preceding or within whirler or rotator means
238 ...Spray or film contact
239 ..Reversal of gas flow by surface of body of liquid
240 .With means forming flowing liquid film or sheet for gas contact
241 ..On impervious backing (e.g., corrugated plates)
242 .With liquid cleaning or flushing means for media
243 ..Immersion cleaning
244 .Gas flow contacts liquid bath
245 ..With back pressure relief or auxiliary liquid trap or baffle
246 ..With anti-splash means or means for retaining liquid during upset or tilt
247 ..With movable means in bath for commingling gas and liquid
248 ..Separator positioned above liquid bath
249 ...With means for forming liquid into a spray or heap
250 ...Superposed filter
251 ....With flow guide preventing entire leading filter surface contact
252 ....Surrounding gas flow path
253 .....With separable liquid sump
254 .....With anti-creep means
255 ....Submerged inlet for sub-surface contact of liquid
256 ..Submerged inlet for sub-surface contact
257.1 .Gas separating means downstream of contacting means
257.2 ..Parallel vanes
257.3 ..Overlapping vanes
257.4 ..Centrifugal
257.5 ..Impact plate
257.6 ..Perforated plate
257.7 ..Heat exchange
258 ..With preliminary separating means
259 ..Filter type separating means
260 .With deflecting means preliminary to liquid contact
261 WITH INLET MEANS FOR DIVERSE FLUID OR SOLID FOR GAS TREATMENT
262 .Solid or vaporized solid
263 .Steam
264 .With outlet for condensed vapors
265 .Downstream of separator
266 .With flow control for each inflow gas
267 WITH HEATING OR COOLING MEANS FOR GAS, OR WITH INSULATION
268 .Two confined fluids in indirect contact
269 ..Heat exchanger is part of separator or is contiguous therewith
270 WITH SAMPLING, WEIGHING, TESTING OR METERING MEANS
271 WITH TIMING OR CHANGEABLE PROGRAMMING MEANS
272 .Of cleaning mechanism for media
273 ..Sequential cleaning of plural units
274 WITH SIGNALS AND INDICATORS (E.G., INSPECTION MEANS)
275 .Moisture sensitive
276 WITH SOUND DAMPING OR ACOUSTICAL MEANS (I.E., NOISE ATTENUATION)
277 SONIC TYPE
278 SHELF OR EDGE TYPE
279 WITH STERILIZING MEANS
280 WITH DRIP OR ESCAPING MATERIAL COLLECTOR (NOT OF SEPARATED CONSTITUENT AS SUCH)
281 .From deliquescent material holder
282 WITH NON-LIQUID CLEANING MEANS FOR SEPARATING MEDIA
283 .With automatic control of cleaning means
284 .With sequential cleaning of plural units
285 ..Ferris wheel type filter unit arrangement
286 ..With gas flow arresting means
287 ...Interconnected with cleaning means
288 .Interdependent or interoperated gas flow cutoff or apparatus shut down and media cleaning
289 .Interdigitated comb and separating media
290 .For moving indefinite or continuous length separating media
291 .Plural diverse cleaning means
292 .Sonic type
293 .With separating media pneumatically vibrated or flexed
294 .Relatively movable pneumatic nozzle (e.g., scanning nozzle)
295 .Solid agent cleaning member movingly contacts apparatus
296 ..Agent has defined traversing motion relative to separating media
297 ...With motion effecting means interrelated with separating operation
298 ....Gas flow actuates member
299 ...With resulting flexing or distortion of resilient or collapsible separating media
300 ..Vibrating, jarring or rapping means
301 .Cohesive filter media cleaning
302 ..Pneumatic reverse flushing

WITH NON-LIQUID CLEANING MEANS FOR SEPARATING MEDIA
.Cohesive filter media cleaning
..Pneumatic reverse flushing
303 ...Draft diverted from one side of filter to other
304 ..Filter manipulation, shaking or flexing for precluding or removing encrustation
305 ...Attendant actuated manipulating means
306 AIRCRAFT ANTI-INGESTION MEANS (E.G., AIRCRAFT DEBRIS GUARD)
307 FILTER OR APERTURED DEFLECTOR UNIT DISCONTINUOUS ACROSS GAS FLOW WITHIN FLOW CONDUIT
308 .Multiple members serially spaced in flow conduit
309 WITH SEPARATING MEDIA BYPASS OR SYSTEM GAS PRESSURE RELIEF (E.G., RUPTURABLE OR DEFORMABLE)
310 .Pressure relief means to or from atmosphere
311 ..Relief means is downstream of media (e.g., ambient air bypasses filter)
312 .Valved bypass means
313 ..Gas force responsive
314 ..Shunt means for total flow
315 PLURAL SERIAL BASICALLY DIVERSE SEPARATING MEDIA
316 .At least one a sorber for gaseous or vaporous fluids
317 .At least one mounted for continuous motion
318 .Plural stages in unitary casing
319 ..Including expansion chamber
320 ..Deflector and fibrous, filamentary, particulate solids, or cohesive sheet filter type
321 ...Multiple of one type in series of parallel in flow path
322 ....Serially spaced with at least one of other type intermediately positioned
323 ....Filters
324 .....In parallel
325 ....Serially spaced deflectors
326 .....With connected trough or channel
327 ...Filter is most upstream
328 ...Movable or movable mounted for adjustment or nonuse
329 ...Filamentary brush type or fibrous mass
330 ....Tubular or annular for radial gas flow
331 ...Conical deflector with curved or parabolic radially extending wide downstream end
332 ...Cohesive sheet-like filter
333 ....Multiple contiguous layers or coils with radial gas flow
334 ....Bag type
335 .....Including imperforate upstream bag end deflector
336 ....Conical
337 ....Cyclone or centrifugal whirl type deflector
338 WITH RECYCLE MEANS
339 .For concentrate entrained in effluent gas outlet means
340 ..Return conduit is external of apparatus
341.1 MULTIPLE BAG TYPE FILTERS IN CHAMBER
341.2 .Gas flow from inside to outside of filter
341.3 ..Modular compartments
341.4 ..Horizontally mounted filters
341.5 .Modular compartments
341.6 .Partitioned bag filter chamber
341.7 .Horizontally mounted filters
342 MULTIPLE SEPARATORS, EACH WITH DISCRETE AND LONGITUDINALLY CONFINED GAS INLET OR OUTLET FLOW PATH
343 .Combined serial and parallel arrangement
344 .With flow equalizing, controlling or distributing means
345 .Centrifugal
346 ..Parallel
347 ...Gas inlet and outlet at linearly opposite ends of separating zone
348 ...Plural gas inflow openings, slots or whirl vanes in each separator
349 ...Tangential inlet to each separator
350 .Filters or sorbers
351 WITH MEANS FOR ADVANCING CLEAN PORTIONS OF CONTINUOUS OR INDEFINITE LENGTH SEPARATING MEDIA INTO GAS STREAM
352 .Advancing means initiated by flow, pressure, or pressure differential of gas
353 .Multiple distinct units
354 .Indefinite or running length
355 WITH LIQUID TRAP SEAL OR VALVE
356 WITH MEANS FACILITATING TRANSPORTABILITY OR HANDLING OF APPARATUS
357 .Handle feature for apparatus or part thereof
358 WITH GROUND SUPPORT MEANS (NONFLOW CONDUCTING)
359 WITH PORTION OF COVER REMOVABLE
360 WITH ELECTRICAL GROUNDING MEANS
361 FLEXIBLE OR COLLAPSIBLE BAG TYPE
362 .With bag ejecting means
363 .Toroidal or annular bag
364 .Impervious bag with pervious portion
365 .Bag carried strain relief means between bag supports
366 .With separable nonfiltering residue container
367 .Valved, self closing or apparatus contained bag closing means
368 .Spaced interior inflow path or with means modifying gas flow in bag
369 .Closure means other than coupler to flow line for filter or cover bag
370 ..Use position residue removal means
371 ...Inner filter bag removal
372 .With additional nonbag type filter
373 .Housing closure secures bag
374 .With flow line coupling means
375 ..Flexible conduit joints line to bag
376 ..Coupling part inseparable from bag
377 ...Resilient or expansible
378 .With securing or supporting means
379 ..Bag internally supported
380 .Nested bags or folded wall with spaced or unsecured faces
381 .Seaming, reinforcing or bag structure
382 ..Multi-ply, strata or laminated
383 WITH REMOTE FAN OR PUMP AND UNCONFINED FLOW TO SEPARATOR
384 STORAGE OR FOOD RECEPTACLE COVER ASSOCIATED SORBER
385.1 COMBINED OR CONVERTIBLE
385.2 .In environmental air enclosure
385.3 .In motor vehicle
385.4 .In vented container
385.5 .Involving mining or metallurgical apparatus
385.6 .Involving communication receiving or transmitting apparatus
385.7 .Involving shielding apparatus
385.8 .Involving ash tray
386 CHROMATOGRAPHY TYPE APPARATUS
387 APPARATUS INCLUDING SOLID SORBENT FOR VAPOROUS OR GASEOUS CONSTITUENT

APPARATUS INCLUDING SOLID SORBENT FOR VAPOROUS OR GASEOUS CONSTITUENT
388 .Soluble type (e.g., calcium chloride)
389 .Molecular sieve type
390 .Moving bed
391 RESTRICTED ANNULAR MIXTURE INLET TO COLLECTOR ZONE AROUND GAS OUTLET CONDUIT ATTACHED BAFFLE
392 WITH GUIDE MEANS EFFECTING REMOVAL OF CONSTITUENT LAYER OUT OF GAS STREAM
393 .Movably mounted for adjustment
394 .At escape means for heavier constituent
395 ..And separable residue receptacle
396 ..Annular outlet around gas outflow path
397 ..Spaced, overlapped walls
398 ..Plural, angularly spaced
399 .Spiral guide
400 MOUNTED OR SUPPORTED FOR CONTINUOUS MOTION
401 .Plural distinct separating media or stages
402 ..Overlapping moving separators
403 ..Plural moving separators serially arranged
404 .Moved by system fluid in confined flow path
405 ..Fluid flow normal to axis of moving member
406 .Differentially deflected system fluid constituents
407 ..Concentrate flow groove, guide or channel on moving member
408 ..Separated gas conducted axially through rotating member
409 ...Hollow shaft
410 WITH SEPARATED GAS OUTFLOW CONTROL (E.G., APERTURED CONDUIT)
411 .Movable gas outlet conduit
412 ..Longitudinal
413 .Baffle or flow guide
414 ..Within or downstream of gas outlet conduit
415 ...Movable baffle of flow guide
416 ...Flow straightener
417 .Valve
418 WITH INFLOW GAS CONTROL OR DISTRIBUTION
419 .Multiple inlets
420 .Check valve
421 WITH MEANS FOR LIQUID SEPARATION
422 SEPARATING MEDIA ADJUSTABLE TO VARIOUS POSITIONS OF USE OR TO NONUSE
423 MEANS WITHIN GAS STREAM FOR CONDUCTING CONCENTRATE TO COLLECTOR
424 WITH CONCENTRATE BACKFLOW OR RE-ENTRAINMENT PREVENTING MEANS
425 .Closure between separating and collecting zones
426 .Baffle intermediate concentrate collector zone and gas outlet conduit
427 ..Adjustably mounted
428 RESIDUE ACCESS, HANDLING OR REMOVING MEANS
429 .Separable collection container
430 .With means effecting or assisting discharge or residue (e.g., endless belt)
431 ..Gaseous or liquid
432 .With movable or manipulable means controlling escape of residue
433 ..Manually actuated
434 DEFLECTOR
435 .Wear liners or surface characteristics (e.g., anti-erosion)
436 .Removably supported deflector surface
437 .With gas pump or fan
438 ..Within separator
439 ..Downstream of separator
440 .Parallel and continuous nonplanar members (e.g., crimped, corrugated, curved)
441 .Concentric, nested conduits with closed and open ends for flow reversal
442 .Plural deflectors overlapped and spaced serially in gas flow
443 ..Plural deflectors in row across gas flow
444 ...Deflectors in alternate rows aligned (i.e., staggered)
445 ..Deflectors apertured or closely spaced from flow path wall
446 ...Space or aperture opposed by solid deflector surface
447 .Fixed gas whirler or rotator means
448 ..With outlet gas conduit wall common to surrounding gas inlet or concentrate outlet or collector
449 ...Gas inlet and outlet have common wall
450 ...With outlet from collector
451 ....Tangential outlet pipe
452 ..With plural concentrate outlets in arcuate, axially extending whirl chamber wall
453 ..With concentrate outlet means in one of parallel plates mounting spaced whirler vanes
454 ..With tangential concentrate outlet pipe
455 ..Plural nonradial gas passages in peripheral wall (e.g., tuyere)
456 ..Helical vane or baffle within flow conduit
457 ...Between gas flow path wall and central core
458 ..Inflow pipe projects within casing
459.1 ..Tangential gas inlet opening in casing
459.2 ...Inclined inflow
459.3 ...Scroll
459.4 ...Inflow nozzle or vane
459.5 ...Varying inlet area
460 ...With tangential gas outlet
461 ..Continuous confined flow path
462 .Impingement baffle
463 ..Conical with apex facing upstream
464 ..Corrugated, ribbed, crimped or with projections
465 ..Planar
466 WITH SEPARATED NONGASEOUS MATERIAL CONDUCTING OR TREATING MEANS
467 WITH GAS FLOW EFFECTING MEANS
468 .Injector or jet pump type
469 .Manual, weight or traction operated gas pump
470 .Plurality of impellers arranged in parallel or performing diverse functions
471 .Impeller within or proximate to space encompasses by separating media
472 .Upright or multi-chambered casing
473 .Impeller upstream of separating media
474 WITH PARTICULATE SOLIDS MOVEMENT DURING USE OR AGITATING MEANS THEREFOR
475 WITH MEANS ADJUSTABLE TO CONTROL COMPACTNESS OF SEPARATING MEDIA
476 WITH MEANS INTRODUCING GAS INTO MIDST OF SEPARATING MEDIA
477 STRANDS OR BRISTLES WITH UNSUPPORTED OF FREE EXTREMITIES (E.G., BRUSH TYPE)
478 WITH SEPARATE FLOW LINE ACCESS MEANS OR FILTER MEDIA PASSAGE MEANS OFFSET TO FLOW PATH
479 .For discrete filter particles
480 .Access means is clamping or coupling means for unit filter media
481 .Unit transversely slidable through flow path

482 TWO OR MORE SEPARATORS (E.G., SPACED FILTERS IN FLOW LINE OR CASING)
483 .With framework for edge to edge relation
484 .Spaced for parallel flow of gas
485 .Three or more serially spaced
486 .Plies or layers of different characteristics or orientation
487 ..Differing mesh sizes
488 ..Variation in shape or size
489 ..Orientation of elements
490 WITH MEANS SECURING OR RETAINING SEPARATING MEDIA
491 .Fastening means pierces or penetrates media
492 .Internal frame or support means
493 .Hinged or pivoted retainer or clamp on backing frame or in flow line
494 .Grid or tray type for bottom support only
495 .Unit or cohesive sheet-like media in flow line or frame
496 ..With adjustable connector or size adjusting means
497 ..Edge supporting or securing means for nonplanar sheet form filter (e.g., zig-zag)
498 ...Spiral or cylindrical
499 ...With additional transversely arranged members
500 ..Flexible sheet type maintained in nonplanar configuration
501 ..With additional support means not positively engaged or joined to media (e.g., across face of filter)
502 ..Gasket or sealing means
503 ..Media within joinable or separable flow line sections
504 ..Aligned stop, media and removable retainer
505 ..Flow line end coupling (e.g., pipe end)
506 ...Flange or track on flow line for slidably retaining media
507 ...Resilient attaching means
508 ..Suspended or supported by bracket or from top of frame
509 ..Distorted media in flow line or resilient retaining means
510 ..Annular unit held between dished or plate-like end members for top and bottom support
511 ..Edge supported or secured only
512 .Discrete fibrous or particulate solids
513 ..Resilient securing means
514 ..Fused or bonded to a supporting or backing member
515 ..Foraminous container
516 ..Held between openwork
517 ...Between telescoped or nonplanar retainers
518 ...Between perforated plates
519 ...Between reticulated end closures
520 SPIRAL FILTER MEDIA
521 ZIG-ZAG, CORRUGATED OR CONICAL
522 SPECIFIC MEDIA MATERIAL
523 .Ceramic or sintered
524 .With coating, impregnant or bonding agent
525 .Metal mesh or expanded material
526 ..Wadded or compressed
527 .Fibrous or strand form
528 ..Organic (e.g., vegetable)
529 MISCELLANEOUS (E.G., SHAPES)

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DIGESTS

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DIG 1 Graduated electrostatic field
DIG 2 Vacuum cleaner bags
DIG 3 Vacuum cleaner
DIG 5 Methods of making filter
DIG 6 Magnetic couplings
DIG 7 Black liquor treatment
DIG 8 Built-in vacuum cleaners
DIG 9 Radioactive filters
DIG 10 Residue burned
DIG 12 Pocket type filter
DIG 13 Polyurethane filters
DIG 14 Inertia separator
DIG 15 Cold traps
DIG 17 Compressed air water removal
DIG 18 Work bench
DIG 19 Crankcase ventilation
DIG 20 Spark arrester
DIG 21 Silencer cleaner
DIG 23 Steam separators
DIG 24 Viscous coated filter
DIG 25 Agglomerators
DIG 26 Bag coupling
DIG 27 Cleaners, liquid
DIG 28 Carburetor attached
DIG 29 Air curtains
DIG 30 Exhaust treatment
DIG 31 Filter frame
DIG 32 Gaseous fluid conveying
DIG 33 Gas mask canister
DIG 34 Indicator and controllers
DIG 35 Respirators and register filters
DIG 36 Kitchen hoods
DIG 37 Louvers
DIG 38 Tubular collector electrode
DIG 39 Electrets separator
DIG 42 Foam filter materials
DIG 43 Knitted filter mediums
DIG 44 Pile and pile-type filter mediums
DIG 45 Woven filter mediums
DIG 46 Spray booths

1	MISCELLANEOUS
2	CONVERTIBLE
3	.Cutter and detachable conveyer ..Rake
4	...Vertical axis
5	.Cutter and detachable catcher
6	GANG
7	.Rotating cutting reel
8	MARINE
9	.With conveyer
10.1	MOTORIZED HARVESTER
10.2	.With condition-responsive operation
10.3	..Release or slip of drive in response to overload
10.4	..Retraction of cutter-unit in response to obstruction
10.5	.With randomly-operative control of motor (e.g., for starting or stopping motor)
10.6	.With plural sources of power
10.7	..For disparate functions
10.8	.With selective control of drive means
10.9	..By valve for controlling fluid-pressure motor
11.1	..By means for varying speed-ratio of drive
11.2	..By means for reversing drive
11.3	..By brake and disengageable drive (e.g., clutch)
11.4	..By controlling plural drive trains
11.5	...Including clutch-assemblages
11.6	..By means for regulating tautness of belt drive
11.7	..By clutch-assemblage
11.8	...Connecting motor to cutter or transit wheels
11.9	.Having fluid-pressure or stored-energy motor
12.1	.With means for reconditioning cutter or picker
12.2	.With means for using heat or exhaust from engine
12.3	.With means for lubricating drive train
12.4	.With drive train for imparting compound movement to finger-like elements
12.5	..Rotating and orbiting elements
12.6	.With separable or vibration-damping drive train
12.7	.Including cutter yieldably mounted on its drive means
12.8	.Including driven air-blower unit
12.9	..For drawing vegetation to harvester
13.1	...To suction head
13.2	....With beater at suction head
13.3	..For discharging crop from harvester
13.4	...By blower on cutter-driving shaft
13.5	.Including plural operating units and drive
13.6	..Separately-acting cutter units
13.7	...For disparate cutting operations
13.8	....In series arrangement
13.9	.....With conveyer between units
14.1	..Separately-acting opposed-roller-couple units
14.2	...With opposed-gatherer-couple unit
14.3	..Gatherer unit and vegetation-cutter unit
14.4	...Horizontal-axis-reel gatherer
14.5	..Cutter unit and conveyer unit
14.6	...With thresher or crop-separator unit
14.7	.Including motorized vehicle causing transit of harvester
14.8	..With drive train to harvester powered by ground-engaging wheels
14.9	..With hitch permitting movement of harvester relative to vehicle
15.1	...With drive from motor for re-positioning harvester
15.2	....Cutter assemblage re-positioned
15.3	...With flexible drive train to repositionable harvester
15.4	...By means for steering harvester
15.5	...By means for adjusting harvester laterally
15.6	...By hitch for separating harvester from vehicle
15.7	...By resilient or universal-action hitch
15.8	....For "floating" harvester
15.9	...Hitch for pivoting harvester about horizontal axis
16.1	....Tined crop-pickup rake on transverse pivot
16.2	....Longitudinally-extending axis
16.3	....With latchable lever means for pivoting harvester
16.4	.Having driven means for handling or treating crop
16.5	..For separating one material from another
16.6	..Delivering to receptacle or hopper
16.7	.Having motor on ground-supported carrier
16.8	..With dispenser of fluent material
16.9	..Motor used for plural devices or functions
17.1	..And cutter adjustable relative to ground
17.2	...By adjusting ground wheel or skid relative to carrier
17.3	..And element guiding vegetation to cutter
17.4	..And guard
17.5	..And rotatable blade on motor shaft
17.6	..And drive train to reciprocating or oscillating cutter
27.5	TOBACCO
28	COTTON
29	.Flail or whip
30	.Pneumatic
31	..Individually directed
32	..Nozzles
33	.Strippers
34	..Comb
35	...Moving
36	.Pickers
37	..Individually directed
38	...Endless belt
39	....Manually operated
40	..Rotary or oscillating
41	...Spindle
42	....Belt carried
43	.....Cam-track guide
44	....Rotary carrier
45	.....Flexible spindle
46	.....Reciprocating
47	.....Cam-track guide
48	...Drum
49	..Endless belt
50	..Spindles
51	CORNSTALK TYPE
52	.Stalk breakers
53	.Cutters
54	..Broom corn
55	...Reel gatherer
56	..Toppers with catchers
57	...Reel gatherer
58	....Horizontal axis
59	...Endless-chain gatherer
60	..With choppers
61	...With catchers
62	..With strippers
63	..With toppers
64	..With pickers or huskers
65	...Reel gatherer
66	...Endless-chain gatherer

CORNSTALK TYPE
.Cutters
67 ..Self-binders
68 ...Upright binder
69 ....Endless-chain gatherer
70 .....Binder position adjustable
71 ..With dischargers
72 ...Crane type
73 ....With gatherers
74 .....Reel
75 .....Endless chain
76 ...Endless apron
77 ....Reel gatherer
78 ....Endless-chain gatherer
79 ...Horizontally moving and tilting
80 ....With gatherers
81 .....Reel
82 .....Endless chain
83 ...Tilting
84 ....With gatherers
85 .....Spiral
86 .....Reel
87 ......Horizontal axis
88 .....Endless chain
89 .....Fixed
90 ...Retracting support
91 ....Reel gatherer
92 ...Reel gatherer
93 ...Endless-chain gatherer
94 ..With gatherers
95 ...Spiral
96 ...Reel
97 ....Horizontal axis
98 ...Endless chains
99 ...Fixed
100 ....Fixed cutter
101 ..Fixed cutter
102 ..Cutting members
103 .Pickers or huskers
104 ..Roller
105 ...Plurality of rows
106 ....With endless-chain gatherers only
107 ...Auxiliary ear detacher
108 ....With endless-chain gatherers only
109 ...Movable gatherer
110 ....Spiral
111 ....Endless chain only
112 .....Adjustable roller frame
113 ..Fixed snapper
114 ...Comb
115 ....With knife
116 ..Moving comb
117 ..Moving knife
118 ...On endless chain
119 .Gatherers or guides
120 .Sheaf loaders
121 .Sheaf carriers
500 STALK CHOPPERS
501 .Gathering by air current
502 .With driven pickup
503 .Rotating on vertical axis
504 .Rotating on horizontal transverse axis
505 ..With transverse ledger plate
121.4 CUTTERS WITH PLANT OR CROP CONTACTING GAUGE (E.G., BEET TOPPERS)
121.41 .Laterally self-aligning gauging and cutting means
121.42 .With preliminary foliage arranging
121.43 .Plural cuts at successive heights and/or slitting
121.44 .With cut top disposal
121.45 ..Movable disposing members
121.46 .Gauge and cutter relatively adjustable responsive to height and/or size of plant
122 CUTTING, CONVEYING AND THRESHING
123 .Reciprocating cutter
124 ..Central swath, co-axial wheels
125 ..Longitudinally hinged cutter frame
126 SEED GATHERERS OR STRIPPERS
127 .Fixed comb
128 ..Rotary beaters
129 ...Central swath, co-axial wheels
130 .Moving comb
131 CUTTING, CONVEYING AND BINDING
132 .Wire-twister type
133 .Straw-band type
134 .Folding platform
135 .High outside binder
136 ..Folding binder frame
137 ..Binder position adjustable
138 ...Knotting
139 ..Knotting
140 .Upright binder
141 .Endwise delivery
142 ..Knotting
143 .Low down
144 ..Curved path
145 ...Knotting
146 ..Inside delivery
147 ...Knotting
148 ..Outside delivery
149 ...Through bull wheel
150 ...Knotting
151 ..Knotting
152 .Knotting
153 CUTTING AND CONVEYING
154 .Endless cutter
155 .Oscillating cutter
156 .Rotary cutting reel
157 .Rotary cutting disk
158 .Reciprocating-cutter type
159 ..Folding platform
160 ..With binder's platform
161 ...Self-raking mechanism
162 ...Belt-carried endless path
163 ..Hand-raking mechanism
164 ..Self-raking mechanism
165 ...Gaveling tongs
166 ...Dumping catcher
167 ...Rotating
168 ....Reciprocating head
169 ....Vertical axis
170 .....Switch
171 ......Automatic control
172 ....Auxiliary manual control
173 ...Reciprocating
174 ....Belt actuated
175 .....Reciprocating belt
176 ...Vertical circuit
177 ....Belt carried
178 ...Horizontal circuit
179 ....Belt carried
180 ..Rake heads and arms
181 ..Endless carrier
182 ...Deflected course
183 ...Intermittent
184 ...With discharging catcher
185 ...Elevated delivery
186 ...Central cutter, co-axial wheels
187 ....Tilting platform
188 .....Pivoted tongue
189 .Swathing attachments
190 .Windshields
191 .Binder's platforms
192 CUTTING AND WINDROWING
193 CUTTING AND RAKING
194 CUTTING AND CATCHING
195 .Side cutter
196 ..Rear
197 ..Front
198 .Rotating cutting reel
199 ..Catchers
200 ...Discharging
201 .Manually propelled
202 .Catchers

	CUTTING AND CATCHING
	.Catchers
203	..Discharging
204	...Revolving
205	...Upwardly swinging rear gate
206	...Rearwardly dropping member
207	SHELLED-GRAIN CATCHERS
208	PLATFORM ADJUSTMENTS
209	.Side hill
210	.Main frame
211	..Traction operated
212	..Vertically and longitudinally tilting
213	...Simultaneous vertical adjustment
214	..Vertical
215	...Segment rack and pinion
216	....Simultaneous
217	...Simultaneous
218	TONGUE ADJUSTMENTS AND SUPPORTS
219	STANDING-GRAIN GATHERERS
220	.Rotating reel, horizontal axis
221	..Adjustable position
222	...With driving means
223	....Sliding angular gear
224	....Belt with adjustable tension
225	....Concentric
226	..Supplementary bat movement
227	..Adjustable bats
228	TRANSPORTING ATTACHMENTS
229	CUTTING
230	.Railroad
231	..Rotating cutting reel
232	..Reciprocating cutter
233	.Hedge or plant-row trimmers
234	..Plurality of cutters
235	...All rotary disk
236	...All reciprocating
237	..Single cutter for top or side
238	.Successive cuts at different heights
239	.Hand-operated cutter
240	..Oscillating
241	...Single pair of shears
242	..Reciprocating
243	...Hand crank
244	.Endless cutter
245	..Side cut
246	.Oscillating cutter
247	..Vertical cut
248	..Side cut
249	.Rotating cutting-reel type
249.5	..Interchangeable cutting assembly
250	..Sharpening
251	..Auxiliary cutter
252	..Cutter in front of wheel tread
253	..Co-axial wheels central cut
254	...Internal gear single pinion
255	.Rotating-cutting-disk type
256	..Vertical cut
257	.Reciprocating central cutter
258	..Co-axial wheels
259	...Double sickle
260	...Pitman drive
261	....With lever
262	...Cam drive
263	....With lever
264	.Reciprocating side cutter
265	..Through-wheel drive
266	..Reversible
267	..Horizontally folding
268	..Rear cut
269	...Co-axial wheels
270	....Cam or lever drive
271	..Front cut
272	...Co-axial wheels
273	....Power-operated lift
274	....Automatic clutch shipper
275	....Double sickle
276	....Lifting and rocking cutter bar
277	.....With foot lever
278	......Gag lever
279	.......Cutter-bar mountings only
280	......Cutter-bar mountings only
281	.....Gag lever
282	.....Cutter-bar mountings only
283	....Lifting cutter bar
284	.....Cutter-bar mountings only
285	......With foot lever
286	......Gag lever
287	....Cutter-bar mountings only
288	..Alignments
289	.Cutter members
290	..Endless
291	...Horizontal orbit
292	...With tension adjustment
293	..Oscillating
294	..Rotating cutting reel
295	..Rotating cutting disk
296	..Reciprocating
297	...Double sickle
298	...Sickles and guard fingers and bars
299	...Sickles
300	....Detachable sections
301	.....Detachable from end of bar
302	.....Auxiliary locking bar
303	...Shoes and knife heads
304	...Antifriction devices
305	...Guiding clips
306	...Shock absorbers
307	...Guard fingers and bars
308	....Modified finger
309	.....With ledger plate
310	....Fingers only
311	.....With ledger plate
312	....Supplemental lifting fingers
313	.....Socket for guard-finger point
314	.Track clearers and dividers
315	..Supplemental vertical cutter
316	...Reciprocating
317	..Driven
318	..With shoe-point socket
319	..Foldable
320	..Supplemental clearer
320.1	.Housing or guard
320.2	..With discharge opening
321	ANTI-SIDE-DRAFT DEVICES
322	GRAIN WHEELS AND CASTERS
323	SEATS
324	GRAIN CRADLES
324.5	.Connections
327.1	VEGETABLE GATHERER
327.2	.Asparagus havester
328.1	FRUIT GATHERER
329	.Catchers
330	.Berry strippers
331	.Berry clippers
332	.Pole supported
333	..Pivoted jaw
334	...Chute
335	..Pivoted knife
336	...Chute
337	..Sliding jaw
338	..Sliding knife
339	..Fixed detaching member
340	...Chute
340.1	.Tree shaker
341	RAKING AND BUNDLING
342	.Hand
343	.Cord-knotter type
344	RAKING AND LOADING
345	.Endless carrier
346	..Intermittent discharge
347	...With movable feeder
348	....Stationary rake teeth
349	...Stationary rake teeth
350	..Rear delivery
351	...With movable feeder
352	....Stationary rake teeth

	RAKING AND LOADING
	.Endless carrier
	..Rear delivery
353	...Stationary rake teeth
354	..Side delivery
355	...With movable feeder
356	....Stationary rake teeth
357	...Stationary rake teeth
358	..With movable feeder
359	...Stationary rake teeth
360	..Stationary rake teeth
361	.Intermittent discharge
362	.Raising rake
363	..Auxiliary rake
364	.Lifting frame
365	COMBINED RAKES AND TEDDERS
366	.Side-delivery rake
367	.Revolving rake
368	.Draft dumping rake
369	.Transverse tedder crank shaft
370	TEDDERS
371	.Mower attachment
372	.Rotary, transverse axis
373	.Transverse crank shaft
374	.Tedder forks
375	HORSE RAKES
376	.Side delivery
377	..Rotary
378	.Rear delivery
379	..Revolving
380	...Wheels supported
381	....Fixed rake axis
382	....Rake-tooth-engaging stop
383	...Rake tooth-engaging stop
384	..Wheel supported
385	...Nondumpable
386	...Draft dumpers
387	....Ratchet gears
388	....Frictional
389	....Spur gear
390	....Sliding bolt or bar
391	....Pawl and ratchet
392	.....Transverse torsion rod
393	...Hand lever pulled back to dump
394	...Hand lever concentric with rake head
395	.Cleaners
396	.Wheel supported
397	..With lifting means
398	...Draft operated
399	.Fenders
400	.Rake teeth and fastenings
400.01	HAND RAKES
400.02	.Rotary or endless
400.03	..Impaling type
400.04	.Combined, convertible and attachments
400.05	..With cutter, scraper or spreader
400.06	...Operating oppositely to rake
400.07	...Acting simultaneously with rake
400.08	..With cleaner
400.09	...With ground support
400.1	...With actuating linkage
400.11	..With guard or material receiver
400.12	...Impaling type
400.13	...With ground support
400.14	..With ground support
400.15	..Comb or rubber type
400.16	.With plural sets of tines
400.17	.Broom type
400.18	..Adjustable or expansible
400.19	.Adjustable, folding or take down
400.2	..Swivel or pivoted head or tines
400.21	.Tines or teeth
401	SHOCKERS
402	.Automatic feed
403	..Self-binding
404	...Vertical position
405	....Automatic shock-delivery trip
406	.....Oscillating sheaf-delivery member
407	...Sheaf turned end for end
408	...Forwardly tilting shock
409	....Automatic shock-delivery trip
410	..Vertical position
411	...Rotary, vertical axis
412	....Automatic shock-delivery trip
413	.....Oscillating sheaf-delivery member
414	...Automatic shock-delivery trip
415	....Alternating sheaf delivery
416	...Alternating sheaf delivery
417	..Sheaf turned end for end
418	...Automatic shock-delivery trip
419	..Forwardly tilting shock
420	...Automatic shock-delivery trip
421	....Number
422	...Feed stopped during shock delivery
423	...Rearwardly opening former
424	..Shock turned end for end
425	.Vertical position
426	..Rotary, vertical axis
427	..Direct drop
428	.Divided former
429	.Self-binding
430	.With compressor
431	.Props
432	COMPRESSING AND BINDING
433	.Cord knotter type
434	..Adjustable position
435	...Knotting
436	..Pressure tripped
437	...Upstanding compressor control
438	....Packing
439	.....Knotting
440	...Packing
441	....Knotting
442	...Knotting
443	..Packing
444	...Knotting
445	..Knotting
446	..Packers
447	..Auxiliary manual trip
448	..Needle cleaners and guards
449	..Ejectors and discharge gates
450	..Tension and take-up devices
451	.Wire twister type
452	..Single wire
453	...Curved binder arm
454	....Laterally mounted
455	....Forked end
456	....Twister on binder arm
457	..Twisters
458	.Band-tucker type
459	..Straw band
460	...Band forming
461	....Rotating bundle
462	...Band formers
463	.Prepared band
464	.Cord band and clip
465	..Flat metal clip
466	GRAIN ADJUSTERS
467	.On deck
468	..Head or butt evener
469	...Oscillating
470	...Endless apron
471	..Feeders
472	..Retarding arms
473	.Longitudinally moving straightening finger
474	SHEAF OR BUNDLE DISCHARGING CARRIERS
475	.Automatic discharge
476	..Directly tilting
477	.Endless carrier
478	.Folding tines
479	.Opening bottom
480	.Directly tilting
473.5	CARRIERS

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DIGESTS

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DIG 1	Crusher
DIG 2	Methods
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DIG 4	Friction Drive
DIG 5	With material distribution
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DIG 10	Uneven terrain compensation
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DIG 13	Bermuda grass cutters
DIG 14	Hitch
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DIG 16	Movable cutter without stationary cutter bar
DIG 17	Cutter details
DIG 18	Handles
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DIG 21	Raking and windrowing
DIG 22	Underslung yieldable rotary mower
DIG 23	Dehydrating
DIG 24	Harvester guards

DECEMBER 1990

200	STRAND STRUCTURE
201	.Endless bands
202	.Splices
203	.Chenille
204	.Alternately twisted
205	..Crimped or bulked type
206	.Longitudinal variation
207	..Covered or wrapped type
208	..Crimped or bulked type
209	..Slub type
210	.Covered or wrapped
211	..Plied
212	..Wire wrapped
213	...Plural wire wrapped layer
214	....Stranded layers
215	....Including nonround cross section
216	....With core other than wire
217	....Coated or impregnated
218	...Stranded wire-wrapped layer
219	....Including nonround cross section
220	....With core other than wire
221	....Coated or impregnated
222	...With core other than wire
223	...Coated or impregnated
224	..Discrete fiber wrap
225	..Elastomeric material core
226	...With crimped or bulked material
227	..Including crimped or bulked material
228	...Crimped or bulked core
229	..Including glass material
230	..Plural wrapped layers
231	..Stranded layer
232	..Coated or impregnated
233	...Web material
234	...Adhesively bonded
235	..Web material
236	.Plied
237	..Cabled or cord type (i.e., plied plies)
238	..Composite
239	...Crimped or bulked
240	..Glass material
241	..Coated or impregnated
242	...Adhesively bonded
243	.Multifilament yarns
244	..Composite
245	...Crimped or bulked
246	..Crimped or bulked
247	...Twist crimped type
248	..Particular cross section
249	..Glass material
250	..Coated impregnated
251	...Adhesively bonded
252	.Staple fiber blends
253	..Particular cross sections
254	..Crimped or bulked fibers
255	..Synthetic material
256	...With natural fibers
257	..Coated
258	.Coated or impregnated
259	..Web material
260	.Web material
1 R	APPARATUS AND PROCESSES
1 UN	..Untwisting
2	.Stapilizing
2.3	.Untwisting with separating
2.5	..With component winding
3	.Covering or wrapping
3.5	..With core substitution
4	..hair, grass, quillstock or the like
5	..With loose fibers
6	..With other operations
7	...With coating or impregnating
8	...With powdered material incorporating
9	...With wire or strand preforming or shaping
10	..Stationary core type
11	..Rotating core type
12	..With twisting of core or product
13	..With plural strands
14	...With cabling or doubling
15	...In successive layers
16	....With coaxial covering material supply
17	...With coaxial covering material supply
18	..With coaxial covering material supply
19	..With stopping or starting
20	.Waxed ends
21	.Endless bands
22	.Splicing
23	..Implements
24	.Chenille
25	.Ends or hanks
26	..Double feature
27	...With reverse twist controller
28	.Hair, grass or the like
29	..Curling hair
30	..Feeding
31	.Web material
32	..With coating or impregnating
33	.Hollow rope machines
261	.Piecing up
262	..With traveler threading
263	..On open-end machine
264	.Monitor and control
265	.Monitor and record
266	.Doffing or donning
267	..On cap or roving frame
268	..Carriage
269	...With strand manipulation
270	...Bobbin or package manipulation
271	...Successive and individual type
272	....Ejector type
273	..Bottom lifting
274	..Over end of bobbin
275	..Bobbin graspers
276	.With preparation for doffing- or donning-type operation
277	..Rail positioning
278	..Strand manipulation
279	.Threading up
280	..On false twist type machines
281	.Package handling
282	.Twist setting
283	..With twist variation
284	..False twist crimp
285	...Intertwine type
286	...With coating or impregnating
287	...With stretching
288	....Simultaneous type
289	...Fluid jet type
290	...Plural twisting or heating
291	...Operator accommodating frame arrangement
292	..With coating or impregnating
293	.Alternate twist
294	..Accumulator type
295	.With coating or impregnating
296	..On twisting device
297	..Strand bonding or adhesion
298	..Wet drafting
299	.Transfer tail
300	.Clearing
301	..On open-end machine
302	...Rotor
303	..Strand winding
304	..Pneumatic
305	...Strand type
306	..Strand accumulating or scavenging
307	..Of traveler
308	.Atmospheric conditioning
309	.Strand finishing or developing
310	.With stretching
311	.With wire or strand preforming or shaping
58.3	.Skip type stranding machines

APPARATUS AND PROCESSES

.Skip type stranding machines
58.32 ..With cradle driving or holding means
58.34 ..With cradle supported by tube section joint and/or tube supporting or driving disc
58.36 ..With strand guiding means
58.38 ...Rotating strand guide
58.49 .Unitary multiple twist devices
58.52 ..With stranding or plying (e.g., doubling)
58.54 ...Plural multiple twist devices
58.55 ....Tandemly arranged
58.57 ...With false twist
58.59 ..With false twist
58.61 ..Plural co-axial loops
58.63 ..Spaced, driven flyer members
58.65 ..Take-up type
58.67 ...With packaging by revolving strand guide and/or reciprocating package holder
58.68 ...With slip connection between flier drive and package
58.7 ..With strand feeding means
58.72 ..With package control means
58.74 ...For vibration damping
58.76 ...Magnetic
58.78 ...Gear
58.79 ....Friction type
58.81 ...Gravity
58.83 ..With strand guiding, guarding or controlling means
58.84 ...Including transitory strand-storage means
58.86 ...Including tensioning means
400 .Open end spinning
401 ..Friction
402 ..Electrostatic
403 ..Fluid
404 ..Rotating chamber type
405 ...With strand controlled stopping
406 ...With housing for drive or support
407 ....Having operator access
408 ...With fiber separating and/or feeding
409 ....Plural or variable feed
410 ....Coaxial roll
411 ....With fluid flow controlling or directing
412 ....With specific feed device for opening roll
413 ....With specific rotor feed channel
414 ...Rotor with fiber accreting portion
415 ....With fluid flow controlling or directing
416 ....Specific wall configuration
417 ....With specific yarn guiding device
59 .Delivery twist type
60 ..With twisting couple
61 ...With stopping or starting
62 ..With winding
63 ...With cabling
64 ..With cabling
65 ..Planetary type
66 .Receiving twist type
66.5 ..Rotating cradle package holder
67 ..Flier type
68 ...With capstan
70 ...Bobbin lag or drag type
71 ...With traversing strand guide or receiver
72 ..Bobbin lag or drag type
73 ..Spindle tip type
74 ..Cap type
75 ..Ring and traveler type
76 ..Centrifugal pots and guides
312 ...With strand or package manipulation
77 ...With driving connections
313 .With rewinding
314 .Stranding
315 .With drafting
316 ..Domestic
317 ..Variable draft
318 ...False twist type
319 ..Intermittent
320 ...Mule type
321 ....Spindle drive control
322 .....Quadrant
323 ......Faller controlled
324 ....Faller control
325 .....Copping rail
326 ....Feed control
327 ..With carding
328 ..False twist type
329 ...Interstage
330 ...With self-contained drawing means
331 ...Friction type
332 .False twist device
333 ..Having fluid jet twisting means
334 ..Friction type
335 ...Revolving roll-pair type
336 ...Having a frictional belt
337 ...Having a frictional disc
338 ....On plural axes
339 .....With discs overlapping
340 ......With nonperipheral surfaces of discs substantially abutting
341 ...Having a frictional tube, or a twisting head therefor, through which yarn passes
342 ....Plural twist tubes
343 ....Including mounting, support, or housing
344 ..Having a tube, or a twisting head therefor, through which yarn passes, with a yarn gripper
345 ...Plural tubes
346 ...Including mounting, support, or housing
347 ....Magnetic support
348 ..Including mounting, support, or housing
349 ...Magnetic support
350 .With fluid jet
351 .With other type crimping or texturing
78 .Stopping or starting
79 ..Traverse controlled
80 ..Strand controlled
81 ...Electric
82 ...Twisting couple and feed
83 ...Feeding means stopping
84 ....Roll separating
85 ....Strand shifting
86 ....Severing
87 .....With clamping
88 ..Spindle stopping
89 ...Laterally movable spindle
90 .Feeding
91 ..Irregular
92 .Driving
93 ..Speed adjusting
94 ...Constant variation
95 ....With traverse controlled variation
96 ....Fly frame
97 ...Drawing rollers
98 ...Traverse controlled variation
99 ..Traversing
100 ..Electric
101 ..Turbine
102 ..Gear
103 ...Friction
104 ..Band
105 ...Tensioning
352 .Strand guiding or guarding
353 ..Catching or holding
354 ..Separator or balloon limitor

	APPARATUS AND PROCESSES
	.Strand guiding or guarding
	..Separator or balloon limitor
355	...Having antifriction coating or material
356	...Readily removable or adjustable
357	...Having threading slot
358	..Threadboard
359	...Traversing
360	...With lifting means
361	..Lay head
112	.Elements
113	..Drag
114	..Nippers
115	..Fliers
116	...Unwinding type
117	...With pressers
118	...Ring and raceway type
119	..Rings and travelers
120	...With lubrication
121	...With guards or protectors
122	...With supporting, retaining or adjusting means
123	....With bar type traveler
124	....Rotating rings
125	...Travelers
126	....Bar type
127	..Caps
127.5	..Delivering elements
127.7	...With adjustable package support
129	..Receiving elements
130	...Whirl driven
131	....With yarn holding means
132	....With spindle retaining means
133	....With lubrication
134	.....Live spindle
135	....Live spindle
136	..Rails, rail guides and supports
137	...Ring
138	..Dies and mandrels
362	.Processes
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
	CROSS-REFERENCE ART COLLECTIONS
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
901	ANTISTATIC
902	REINFORCING OR TIRE CORDS
903	SEWING THREADS
904	FLAME RETARDANT
905	BICOMPONENT MATERIAL
906	LINE APPLIANCES
907	FOAMED AND/OR FIBRILLATED
908	JET INTERLACED OR INTERMINGLED

CLASS 59 CHAIN, STAPLE AND HORSESHOE MAKING

1 CHAIN MAKING
2 .Bead chain
3 .Loop interlocked
4 .Roller chain
5 .Sprocket chain
6 ..Sheet metal
7 ..Link assembling
8 ..Blanks and processes
9 .Swivel making
10 .Weldless
11 ..Link separation
12 ..Blanks and processes
13 .Sheet metal
14 ..Prong connected
15 ..Stamping and bending
16 .Combined machines
17 ..Coiling, cutting, bending, curbing
18 ..Feeding, cutting, bending, welding
19 ..Feeding, cutting, bending, wrapping
20 ..Coiling, cutting, assembling
21 ..Bending and eye forming
22 ..Bending and welding
23 ..Cutting and bending
24 ...Automatic feed
25 ....Link assembling
26 ..Winding and welding
27 .Bending
28 .Curbing
29 .Sizing and trimming
30 .Swaging and shaping
31 .Welding
32 ..Rotary feed
33 ..Dies
34 ..Holding devices
35.1 .Blanks and processes
36 HORSESHOE MAKING
37 .Combined machines
38 ..Cutting, bending, shaping, punching and creasing
39 ...Calk and clip bending and forming
40 ...Reciprocating jaw or die block
41 ....Reciprocating punch and creaser
42 ...Rotary die block
43 ....Rotary punch and creaser
44 ..Bending, shaping, punching and creasing
45 ...Reciprocating jaw or die block
46 ....Reciprocating punch and creaser
47 ...Rotary die block
48 ....Rotary punch and creaser
49 ..Cutting, bending, shaping
50 ...Reciprocating die block
51 ...Rotary die block
52 ..Bending and shaping
53 ...Reciprocating die block
54 ...Rotary die block
55 ..Shaping, punching and creasing
56 .Bending
57 .Punching and creasing
58 .Swaging and shaping
59 .Trimming and bur removing
60 .Dies and tools
61 .Processes
62 .Blanks and bars
63 ..Rolling
64 ...Processes
65 .Calk and clip bending, forming, sharpening, welding
66 .Calk making
67 ..Blanks and bars
68 ..Processes
69 ..Calks
70 OX-SHOE MAKING
71 STAPLE MAKING
72 .Sheet metal
73 .Cutting, bending, barbing
74 .Cutting, bending, point forming
75 .Cutting and bending
76 ..Rotary former
77 .Blanks and processes
78 CHAINS
78.1 .Conduit
79.1 .Elastic
79.2 ..Coil spring
79.3 ..Sliding link
80 .Ornamental
81 ..Multistrand roller
82 ..Links
83 .Wire
84 .Links
85 ..Detachable
86 ...Shackles
87 ...Double lap
88 ....Pivoted
89 ...Pivoted closure
90 ..One piece
91 ...Sheet metal
92 ...Wrapped and twisted
93 .Attachments
95 .Swivels

****
CROSS-REFERENCE ART COLLECTIONS
****

900 PLASTIC
901 CROSS PIN

200.1 REACTION MOTOR (E.G., MOTIVE FLUID GENERATOR AND REACTION NOZZLE, ETC.)
201 .Rotating or cyclic movement during axial thrust
202 .Ion motor
203.1 .Electric, nuclear, or radiated energy fluid heating means
204 .Method of operation
205 ..By chemical reaction
206 ...Utilizing indirect heat exchange
207 ...Utilizing plural reaction zones within a system
208 ...Injecting air into the reaction zone
209 ....Including using additive material
210 .....Injected separately
211 ...Injecting separate streams of fuel and oxidizer (e.g., hypergole, etc.) into the reaction zone
212 ....Using igniter aid
213 .....Injected separately
214 ....Oxidizer in the form of a mixture
215 ....Fuel in the form of a mixture
216 .....One component free metal
217 ...Injecting mixture of fuel and oxidizer into the reaction zone
218 ...Decomposing a compound in the reaction zone
219 ...Using solid material in reaction zone
220 ....Including injecting modifying fluid
221 .Motive fluid principally liquid
222 ..Plural discharge outlets
223 .With destruction sensing and preventing means
224 .Interrelated reaction motors
225 ..Sequentially operated
226.1 ..Air and diverse fluid discharge from separate discharge outlets (e.g., fan jet, etc.)
226.2 ...Having thrust reverser
226.3 ...Having means to effect a variable bypass ratio
227 .Motive fluid principally steam
228 .With thrust direction modifying means
229 ..With plural selectively usable motive fluid ejecting means
230 ..Jet stream deflecting means
231 ...By secondary fluid injection
232 ..Motive fluid outlet movable relative to motor part
233 .Condition responsive thrust varying means
234 ..Solid propellant depletion control
235 ..Motive fluid outlet area and fuel flow control
236 ...Plural spool motor-compressors
237 ...Outlet area sensed to control fuel or oxidizer flow
238 ...Motive fluid temperature sensed to control fuel flow or outlet area
239 ...Compressor or turbine speed sensed to control fuel flow or outlet area
240 ..Oxidizer and fuel flow control
241 ..Plural burners in series
242 ..Outlet area control
243 ..Fuel flow control
244 .Motive fluid from diverse generators alternatively ejected through outlet
245 ..Propellant supply used in one operation reduced before starting another
246 .Turborocket
247 .Intermittent combustion
248 ..Air bypass passage
249 ..Aerodynamic valve
250 .Plural propellants to burn sequentially
251 .Solid and fluid propellant
252 .Gel propellant
253 .Solid propellant
254 ..Including means to terminate or regulate motive fluid production
255 ..Including propellant support means
256 ..Including ignition means
257 .Liquid oxidizer
258 ..Including injector means
259 ..Including pressurizing means
260 ..Including heating means
261 .Including afterburner
262 .Air passage bypasses combustion chamber
263 .Plural motive fluid generating means or plural outlets
264 .Including motive fluid treating means
265 .Means to flow film on surface
266 .Including heat exchange means
267 ..For a liquid
268 .Including counter rotating rotors
269 .Including mechanical air compressor or air flow inducing means
270.1 .Air supplied by ram effect
271 .Motive fluid outlet means
595 INTERNAL COMBUSTION TYPE FREE PISTON DEVICE SUPPLIES MOTIVE FLUID TO MOTOR
596 INTERNAL COMBUSTION TYPE FREE PISTON DEVICE WITH PRESSURE FLUID STARTING MEANS
597 FLUID MOTOR MEANS DRIVEN BY WASTE HEAT OR BY EXHAUST ENERGY FROM INTERNAL COMBUSTION ENGINE
598 .With supercharging means for engine
599 ..With means to change temperature of supercharged flow
600 ..With condition responsive valve means to control supercharged flow and exhaust products
601 ...With coordinated engine fuel control
602 ..Having condition responsive valve controlling engine exhaust flow
603 ...With coordinated fuel control means for engine
604 ..With heat exchanger to transfer energy from engine exhaust to motive fluid for motor
605.1 ..Supercharging means driven by engine exhaust actuated motor
605.2 ...With exhaust gas recirculation
605.3 ...With motor bearing lubrication or cooling
606 ...With means to provide additional motive fluid for motor
607 ...With additional drive means for supercharging means
608 ....With condition responsive drive means control
609 ...Fluid motor and engine each drive at least one means to supercharge the engine
610 ....Supercharging means convertible from series to parallel
611 ...Having condition responsive means to control supercharged flow to engine
612 ...Plural superchargers
613 .With means to store combustion products prior to entry into fluid motor means
614 .Having fluid motor motive fluid treating, controlling or conditioning means
615 ..Having condition responsive control of motive fluid
616 ..Having means to transfer heat energy between engine exhaust and motive fluid for fluid motor
617 ...And having means to add fluid to motive fluid
618 ...Motive fluid is vaporized liquid
619 ..Having means to add a diverse fluid to combustion products

FLUID MOTOR MEANS DRIVEN BY WASTE HEAT OR BY EXHAUST ENERGY FROM INTERNAL COMBUSTION ENGINE
620 .Fluid motor means is expansible chamber type with movable parts of motor and engine being interconnected
621 ..Movable wall portions are rigidly interconnected
622 ..Expansible chamber of fluid motor means receives exhaust alternately from two or more expansible chambers of engine means
623 ..Fluid motor is rotary type
624 .Fluid motor means is a turbine with output means mechanically interconnected with internal combustion engine output
272 INTERNAL COMBUSTION ENGINE WITH TREATMENT OR HANDLING OF EXHAUST GAS
273 .Methods
274 ..Anti-pollution
275 .By electrolysis, electrical discharge, electrical field, or vibration generator
276 .Having means analyzing composition of exhaust gas
277 .Having sensor or indicator of malfunction, unsafeness, or disarray of treater (e.g., fusible link, etc.)
278 .Material from exhaust structure fed to engine intake
279 ..Separated reactive constituent of exhaust fed to engine
280 .Having auxiliary device mechanically driven by exhaust gas
281 .Having exhaust gas collection and storage, or use as a pressure fluid source
282 .By means producing a chemical reaction of a component of the exhaust gas
283 ..With means handling crankcase, carburetor, or gas tank vapor
284 ..Automatic or timed reactor purge or heat-up in engine starting operation
285 ..Engine fuel, air, or ignition controlled by sensor of reactor condition
286 ..Condition responsive control of heater, cooler, igniter, or fuel supply of reactor
287 ..Condition responsive control of reactor feed, pressure, or by-pass
288 ...Exhaust gas diverted from reactor or treating agent mixer
289 ...Air feed to reactor modulated or diverted by control
290 ....Responsive to engine speed or intake manifold pressure
291 ...Of or by pressure in reactor or of engine exhaust
292 ....Valve at reactor outlet controlled
293 ....Check valve feeds air to exhaust system
294 ..Reactor control correlated with cyclic or external engine control
295 ..Having means for regenerating, replacing, or feeding liquid or solid reagent or catalyst
296 ...Flow reversing structure
297 ..Reactor plus a washer, sorber or mechanical separator
298 ..With means cooling reactor or reactor feed
299 ..Using a catalyst
300 ...Having a means for heating the catalyst
301 ...Reducing type catalyst
302 ...Catalyst in engine manifold or at exhaust port
303 ..Having heater, igniter, or fuel supply for reactor
304 ..Oxidizer feed passage at engine exhaust valve, manifold or port
305 ...Distributed to plural individual ports or valves
306 ...To port zone and downstream of port
307 ..Pressurizing means feeds reactive air to reactor
308 ...Exhaust actuated air aspirator
309 .Having retainer or flow director for exhaust gas condensate
310 .Treated by washing, or having liquid contact structure
311 .By sorber or mechanical separator
312 .Pulsed, timed, tuned or resonating exhaust
313 ..Correlated exhausts from plural cylinders
314 ..Two-cycle engine
315 .Pump draws exhaust gas from engine
316 ..Fluid jet or stream aspirates exhaust gas
317 .Exhaust and external fluid mingling structure
318 ..External fluid is steam
319 ..Exhaust aspirates external fluid
320 .Exhaust gas or exhaust system element heated, cooled, or used as a heat source
321 ..Cooled manifold
322 .Having vibration attenuating, or expansion and contraction relieving structure
323 .Common receiver having inlets from plural cylinder (i.e., exhaust manifold)
324 .Divider, collector, valve means, or boundary layer device controlling exhaust gas flow
625 INTERNAL COMBUSTION ENGINE WITH STRUCTURE ROTATING OR STARTING IT BY PRESSURE FLUID
626 .Having means for compressing, generating or storing pressure fluid
627 ..Having condition responsive control of means
628 ..Storage vessel charged by internal combustion engine acting as a pump
629 ..Pressure fluid motor convertible to pressure fluid pump
630 .Having manual selector of engine valve settings or of fluid flow branches
631 ..Including means selecting direction of engine rotation
632 ONE SHOT EXPLOSION ACTUATED EXPANSIBLE CHAMBER TYPE MOTOR
633 .Having means for feeding fluid fuel
634 .Having plural charge holding means
635 .Having mechanical means securing working member in fired position
636 .Having latch, rupture or safety means resisting movement of working member or firing means from unfired position
637 .Having orifice or conduit restricting flow of combustion products from combustion zone to motor chamber
638 .Having shock absorbing, damping or slow down means for working member
39.01 COMBUSTION PRODUCTS USED AS MOTIVE FLUID
39.02 .Processes
39.03 ..Regulation of power output
39.04 ..Multiple expansion
39.05 ..Addition of steam and/or water
39.06 ..Ignition and/or fuel injection
39.07 .With nonmotor output

	COMBUSTION PRODUCTS USED AS MOTIVE FLUID
39.08	.With lubricators
39.091	.With safety device
39.092	..Debris anti-ingestion preventer
39.093	..Ice preventer or de-icer
39.094	..Fuel flusher or drainer
39.1	..Excess pressure relief
39.11	..Flame screen
39.12	.With combustible gas generator
39.13	.Automatic starting and stopping of combustion products generator
39.141	.With starting device
39.142	..Separate starting device or motive fluid source
39.15	.Multiple fluid-operated motors
39.161	..Re - expansion
39.162	...Counter - rotatable
39.163	...Selectively connectable
39.17	...With treatment between stages
39.181	..Different fluids
39.182	...Steam and combustion products
39.183	...Air and combustion products
39.19	.Different fluids
39.23	.With variable oxidizer control
39.2	.With regulation of power output
39.21	..Plural generators, selectively operable
39.22	..Varying cycle frequency relative to prime mover speed
39.24	..Automatic
39.25	...Motive fluid to prime mover
39.26	...Oxidizer, fuel and water or steam
39.27	...Oxidizer and fuel
39.281	...Fuel
39.282	....Torque sensor
39.29	...Oxidizer
39.3	...Water or steam
39.31	.With mounting or supporting structure
39.32	.With expansible connections
39.33	.Convertible and combined
39.34	.Rotating combustion products generator and turbine
39.35	..Continuous combustion type
39.36	.Coaxial combustion products generator and turbine
39.37	.Plural combustion products generators in ring coaxial with turbine
39.38	..Intermittent combustion type
39.39	...Common rotary distributing valve
39.4	...Common cam member
39.41	.With exhaust pump for combustion products generator
39.42	.With reversible turbine
39.43	.With dual function turbine
39.44	.With closed pocket turbine
39.45	.With gear, pressure exchanger, or screw-type compressor
39.461	.Using special fuel or oxidizer
39.462	..Monofuel type
39.463	..Plural distinct fuels
39.464	..Solid, slurry, emulsive, or suspensive type fuel
39.465	..Gaseous fuel at standard temperature and pressure
39.47	..Solid fuel containing oxidizer
39.48	.With fluid pressure feeding of oxidizer, fuel or water
39.49	.With air injection by fuel or steam jet
39.5	.With exhaust treatment
39.511	..Regenerator
39.512	...Rotary heat exchanger
39.52	..Exhaust gas recycling
39.53	.With addition of steam and/or water
39.54	..Added in prime mover
39.55	..Added in combustion products generator
39.56	..Mixed in space above water
39.57	...Combustion products pass through water
39.58	..Added in mixing nozzle or in turbine nozzle
39.59	..Added in separate mixing chamber
39.6	.External-combustion engine type
39.62	..With plurality of combustion products generator per cylinder
39.63	..Continuous combustion
39.64	.Alternate cycle
722	.Combustion products generator
723	..Having catalyst in combustion zone
724	..Plural with intercycling by pressure fluctuations
725	..Having noise reduction means
726	..With means to pressurize oxidizer for combustion or other purposes
727	...With oxidizer accumulator
728	...Having oxidizer cooling means
729	...Reciprocating positive displacement type
730	..With liquid heat exchanger
731	..With combuston products accumulator
732	..Having initial fuel-rich combustion zone
733	...Separate fuel injectors for plural zones
734	..Having fuel supply system
735	...Fuel injected into turbine
736	...Fuel preheated upstream of injector
737	...Fuel and air premixed prior to combustion
738	....Premix tube within combustion zone
739	...With fuel supply manifold for separate injectors
740	...With fuel injector
741	....Fuel control valve integral with injector
742	....Unitary injector having plural fuel flow paths
743	....Surface film injector
744	....Rotary fuel injector
745	.....Slinger type
746	....Plural distinct injectors
747	.....Injectors in distinct radially spaced parallel flow combustion products generators arranged to combine discharges
748	....With attendant coaxial air swirler
749	...Having bluff flame stabilization means
750	..Having means to recycle combustion products internally of combustion zone
751	..Having diffuser for air inlet
752	..Combustor liner
753	...Ceramic
754	...Porous
755	...Having means to direct flow along inner surface of liner
756	....Air directed to flow along inner surface of liner dome
757	....In an axial direction
758	...Air introduced within liner counter to flow of combustion products
759	...Air scoop extends into air flowing outside liner
760	...Air outside liner flows counter to combustion products flow within liner
39.75	..With turbine
39.76	..Intermittent combustion type
39.77	...Resonating
39.78	...Rotating, oscillating, or reciprocating
39.79	...With fluid actuated valve
39.8	...With pressure actuated valve
39.81	...With fuel metering valve
39.821	..With ignition device
39.822	...Catalytic type

	COMBUSTION PRODUCTS USED AS MOTIVE FLUID
	.Combustion products generator
	..With ignition device
39.823	...Pyrotechnic squib or charge type
39.824	...Hypergolic type
39.825	...Single shot liquid type
39.826	...Pilot or torch type
39.827	...Spark type
39.828	...Incandescent type
39.83	.Cooling of auxiliary components
639	MOTOR ACTUATED BY ACCUMULATING AND DUMPING LIQUID OR FLUENT MATERIAL
640	.Rocking member having opposite accumulating means
641.1	UTILIZING NATURAL HEAT
641.2	.Geothermal
641.3	..With direct fluid contact
641.4	..With deep well turbopump
641.5	..With fluid flashing
641.6	.With natural temperature differential
641.7	..Ocean thermal energy conversion (OTEC)
641.8	.Solar
641.9	..With distillation
641.11	..With elevated structure
641.12	...Air is working fluid
641.13	..With single state working substance
641.14	...Gaseous
641.15	..With solar concentration
516	MOTOR OPERATED BY EXPANSION AND/OR CONTRACTION OF A UNIT OF MASS OF MOTIVATING MEDIUM
517	.Unit of mass is a gas which is heated or cooled in one of a plurality of constantly communicating expansible chambers and freely transferable therebetween
518	..Having means to change operational phase relationship of working member and displacer
519	..Expansible chamber having rotatable or oscillatory displacer
520	..Having free floating displacer or transfer piston
521	..Having means to increase or diminish quantity of motivating mass
522	..Having means to control rate of flow of mass between chambers
523	..Having electrical heating means for mass
524	..Having means to control temperature of heating or cooling chamber
525	..Motor having plural working members
526	..Motor having regenerator for mass
527	.Mass is a solid
528	..Mass heated because of resistance to flow of electric current
529	..Mass is bimetallic
530	.Mass is a liquid
531	..Liquid is vaporized
508	FLUID WITHIN EXPANSIBLE CHAMBER HEATED OR COOLED
509	.Special motive fluid
510	.Air rarefied by combustion
511	.Fluid mingling (e.g., condensation)
512	.Having means within the working chamber to effect the pressure of fluid therein
513	..Electric heating means
514	.Concurrent fluid supply and vaporization
515	.Having control means for heating or cooling means
642	MOTIVE STEAM GENERATED FROM HOT WATER CHARGE BY REDUCING PRESSURE ABOVE CHARGE
643	MOTIVE FLUID ENERGIZED BY EXTERNALLY APPLIED HEAT
644.1	.Heating motive fluid by nuclear energy
645	.Process of power production or system operation
646	..Including start up, shut down, cleaning, protective or maintenance procedure
647	..Including operating at or above critical pressure
648	..Including production of withdrawable product or steam for external use
649	..Including mixing or separating materials of different chemical compositions in a motive fluid flow path
650	..Producing power by heating and cooling a single phase fluid
651	..Including vaporizing a motive fluid other than water
652	..Of accommodating, fluctuating or peak loads
653	..Including superheating, desuperheating, or reheating
654	..Including mingling motor exhaust steam with boiler feed water
655	.Noncommunicating heat transferring motive fluid system (e.g., cascade, etc.)
656	.Having ancillary structure for starting
657	.Having apparatus cleaning, sealing, lubricating, purging, standby, or protecting feature
658	..Damage to heat receiving element prevented by automatic means maintaining minimum flow
659	.Including heat, steam, or compressed gas storage means
660	.Having condition responsive control
661	..Of or by heat rejecting means or its bypass
662	..Involving feed from source means to separate motor stages or utilizing means
663	..Of branched feed to, condition of, or heating means for motive fluid between motor stages
664	..Of or by heat source material or element
665	...And of or by boiler liquid level or feed
666	..Of bypass of superheater or desuperheater
667	..Of means controlling boiler or its feed
668	.Power system physically related to vehicle structure
669	.Motor mounted in or on boiler
670	.Power system involving change of state
671	..Motive fluid comprises a material other than steam or water
672	...Motor exhaust used in combustion zone
673	...One fluid absorbs or reacts with another
674	...Air and steam supplied to motor
675	..Gravity motor actuated by weight of condensed vapor
676	..Including plural distinct boilers, heat supplies or external sources of vapor
677	..Serially connected motor with intermotor supply or withdrawal of motive fluid
678	...Withdrawn fluid heats boiler feed indirectly
679	..Having motive fluid reheater between serially connected motors
680	...Motive fluid bypassing upstream motor heats reheater
681	..Motor exhaust mixes with combustion products of boiler heater

MOTIVE FLUID ENERGIZED BY EXTERNALLY APPLIED HEAT
682 .Single state motive fluid energized by indirect heat transfer
683 ..Motor exhaust fed into combustion device
684 ..Including interstage reheat means
325 PRESSURE FLUID SOURCE AND MOTOR
532 .Shock or resonant wave type of energy transmission
533 .Pulsator
534 ..Having signal, indicator or recorder of apparatus condition
535 ...Responsive to leakage of pulse fluid
536 ..Plural correlated pulsators transmitting unlimited rotary input to unlimited rotary output
537 ..Programmed, self-cycled or self-pulsed
538 ...Including electrical control or actuation
539 ...Cam drive of plural masters
540 ...Including timer or time delay means the cycle
541 ...Having means terminating cycle at parking or holding position
542 ...Pneumatic device having pulse air bleed or supply means
543 ...Self-operated pulse fluid purge or quantity adjustment structure
544 ...Continuously acting self-pulsing master with manually settable slave release or output control valve
545 ..Having electricity or magnetically operated structure
546 ..Pulsator synchronizes movement of plural outputs
547.1 ..With control of or by a separate power fluid, etc.
547.2 ...By pressure responsive valve dividing flow between motor and an auxiliary load
547.3 ...By manually operated valve dividing flow between motor and an auxiliary load
548 ...Flow in recirculating circuit controlled
549 ...Master structure provides non-overlapping periods of pressurization of diverse pressure ranges in distinct pulsator circuits
550 ...Master driven by manual power control lever on power failure and having means adjusting lever throw or master resistance responsive to failure of power fluid supply
551 ...Manual master and controller of motor driven master actuated by separate linkages to a common operating lever
552 ...Mechanical feedback to manual control controls power fluid to establish position of working member of master
553 ....With distinct piston or diaphragm exposed to pulsator pressure imparting feel to manual control
554 ....Having load deformable means between master working member and motor thrust means adjusting bias of manual control
555 ...Manual movement of master produces a pressure that controls the power fluid
556 ....Power fluid input controller operated by piston or diaphragm acted on one side by pressure of a manual master and on the other by pressure of a power driven master
557 ....Pressurized fluid from manual master charges slave and controls power fluid to separate master
558 .....Fluid from the manual master fed to slave through a passage in the working member of the power master
559 ......Passage extends across the expansible chamber of the motor of the power master
560 ...Power fluid also fed into a separate expansible chamber directly driving output means
561 ..Pressure balancing free piston or diaphragm between parallel pulsators
562 ..Master piston of one pulsator circuit drives master piston of a parallel circuit through a resilient, fluid or lost motion connection
563 ..Expansible chamber of output pressurized directly by motive fluid and indirectly by a master driven by the motive fluid
564 ...Delivery pressure of master lower than pressure driving master
565 ..Master and diverse non-pulsator drive of output member or members
566 ...Manual master and alternate nonmanual pressure fluid source feed output motor
567 ..Including plural separately operable master actuators or master units driving a common slave
568 ..Having distinct means for holding a pulsator element in set position
569 ...Distinct externally operable valve sealing pulse fluid in slave
570 ...Mechanical latch, brake or detent
571 ..Double-acting slave unit or opposed slaves having a single output
572 ...Having pulse fluid pressure or quantity compensating or adjusting means
573 ....Self-acting phase balancing means acting at midpoint or end of stroke
574 ..Automatic control of plural stage pressure generation or utilization
575 ...Automatic trapping of fluid back of delivery piston forms temporary pulsator driving piston during one stage
576 ...Of separate movement of plural delivery pistons
577 ....Central externally driven piston drives surrounding piston means through a load responsive connector
578 ...Unitarily movable displacer delivers fluid from two delivery chambers, one chamber being ineffective under high pressure delivery
579 ..Slave of first master drives master of another slave
580 ...Parallel masters driven by first pulsator
581 ..Plural structurally related master pistons, cylinders or pulsator circuits
582 ..Having safety standby structure becoming operative upon apparatus malfunction

PRESSURE FLUID SOURCE AND MOTOR
.Pulsator
583 ..Pulse fluid vessel embracing output piston and fluid displacing element
584 ..Having separately and manually operated structure for charging, discharging bleeding, or adjusting pulsator volume
585 ..Holder for reserve liquid feeds master
586 ...Having means to establish holding pressure in pulse liquid
587 ....Pressure maintained through inlet or piston cylinder of master
588 ...Master piston traps liquid on advance across a feed port in cylinder wall
589 ...Master piston or its actuator mechanically operates valve between holder and master cylinder
590 ..Condition responsive device limits return flow from biased slave
591 ..Having valve, director, or restrictor in pulse fluid flow path
592 ..Having, surge chamber, fluid supply means, or means compensating for fluid expansion, contraction or leakage
593 ..Having fluid motor driving piston of master unit
594 ..Having cam, or lever system driving master
326 .Utilizing a mixture, suspension, semisolid or electro-conductive liquid as motive fluid
327 .Methods of operation
328 .Having a signal, indicator or inspection means
329 .Condition responsive control means responsive to, or compensating for, motive fluid compressibility, temperature variation or viscosity variation
330 .Coaxial impeller and turbine unit
331 ..Reversible turbine or turbine system
332 ...Having pitch control or motive fluid flow guide or reaction blade means
333 ...Having means to brake or free flow guide means
334 ...Having means to remove or insert flow guide means from or into motive fluid flow path
335 ...Having plural individually actuatable units
336 ..Having filtering, de-aerating, cleaning or bleeding structure
337 ..Having heating or cooling means
338 ..Having shock, vibration or surge control structure
339 ..Having lubricating means
340 ..Plural turbines drive relatively movable output members
341 ..Having brake or clutch controlling movement of a flow guide located in the impeller-turbine flow path
342 ...With means adjusting blade orientation or blade exposure in flow path
343 ...Speed or fluid condition responsive brake or manually adjustable brake
344 ....Braked casing
345 ...One-way clutch between the movable guide, an impeller, turbine or a second movable guide
346 ...Plural movable guides, one having a one-way clutch to frame
347 ..Having condition responsive or manually settable control means to regulate unit output
348 ...Distributes motive fluid between plural units, stages or guides
349 ...Adjusts impeller or turbine axially
350 ....Variable face clearance
351 ...Controls scoop operation for removing liquid from rotating casing
352 ...Of means within an impulse, reaction or energy transfer flow path being adjustable to modify flow of motive fluid
353 ....Motive fluid guide vane transferable axially into or out of motive fluid flow path
354 ....Pitch or orientation of flow directing guide or blade controlled
355 .....Speed responsive
356 .....Motive fluid pressure responsive
357 ...Of means adjusting the mass of level of motive fluid at the impeller energy transfer zone
358 ....Including continuously driven auxiliary pump
359 ....Exhaust valve
360 .....Motive fluid pressure responsive
361 ..Having separate guide or reaction means in circuit including impeller and turbine
362 ...Rotatable guide or reaction means coaxial with the impeller
363 ..Plural impeller-turbine units
364 ..Impeller or turbine integral with unit housing
365 ...Fluid deflecting means
366 ...Toroidal impeller and turbine
367 ....Having core or ring member at interface
368 .Control by independently operated punch card, tape, digital computer, counter, template, or programmer cyclic control
369 .Cyclically operable reciprocating or oscillating motor or output stroke device
370 ..Pneumatic motor
371 ..Having means to store and release energy usable to energize motor work output means
372 ...Pneumatic counter-balance of gravity load on motor (e.g., deep well pump rod, etc.)
373 ..Progressive change of stroke length in successive strokes
374 ..Correlated independently movable output members
375 ..Correlated power input pumps and/or pressurized fluid sources
376 ..Motor control means having timer or time delay means
377 ...Provides dwell or press period at end of stroke
378 ..Having purging, surge accommodating, or leaking handling or replenishing structure
379 ..Having condition responsive cycle abort means or means for manual control of motor output
380 ..With means to shut down system after a complete to and fro cycle of the motor means
381 ..Having condition responsive control of variable displacement pump
382 ...Cam or gear carried by stroke device varies displacement pump
383 ..Automatic or cyclic means provided plural distinct motor speeds in cycle

	AUTOMATIC
194	.Blow back breech block
195	..Pistol grip magazine
196	...Breech slide type
197	..Box magazine
198	.Buffers and brakes
199	.Receiver closures and/or breech block return means
4.05	EXPLOSION OPENED BREECH
4.1	.Rotary breech block
4.2	.Transverse sliding breech block
4.5	.Blow back breech block
6	FUSE SETTERS
6.5	.Combined with projecting, launching or releasing devices
	PNEUMATIC
7	.Explosive charge
8	ACCELARATING
9	MACHINE GUNS
11	.Axially moving breech block
12	.Revolving barrels
13.05	.Revolving cylinders
13.1	..Nonparallel bores
1.41	MULTIPLE BARREL GUNS
14.05	BARRELS
14.1	.With heat exchanger
14.2	.Flash shield
14.3	.Recoil absorbers and climb arrestors
14.4	.Silencers
14.5	.Recoil increasers
14.6	.Sabot strippers
15	.Wound
16	.Composite
17	BREECH CLOSURES
18	.Key locked
19	.Screw
20.2	..Interrupted
20.4	...Motor operated
21	...Fixed ammunition
22	.Transverse
23	..Sliding and swinging
24	..Sliding
25	..Swinging
26	.Gas checks
27.11	FIRING
27.12	.Safety
27.13	.Primer fired
27.14	.Percussion firing
27.3	.Gun firing actuators
28.05	.Electric
28.1	..Electrical and mechanical
28.2	..Training and firing
29	PRACTICE BARRELS
30	VENTS AND STOPPERS
31	TOMPIONS AND VALVES
33.01	CARTRIDGE FEEDING
33.02	.Drum magazine
33.03	.Movable chamber
33.04	.Selective feed
33.05	.With rammer separated breech block
33.1	.With magazine
33.14	..Belt feed
33.16	...With rotary feeder
33.17	..With rotary feeder
33.2	.Belt feed
33.25	..With rotary feeder
33.4	.Empty shell receivers
33.5	.Cartridge feeding auxiliary feeder
34	.Holders
35.01	.Belts
35.02	..Disintegrating type
36.01	SHIELDS
36.02	.Shape or composition
36.03	.Rotating shield
36.04	.For fixed structure
36.05	.Body
36.06	.Small arms attached
36.07	.Transportable
36.08	..Self-propelled, e.g., tanks
36.09	..Wheeled
36.11	.For aircraft
36.12	.For ships
36.13	.Turret type
36.14	..With vision slit or gun port closures
36.15	.On elevatable platform
36.16	.Anti-aircraft type
36.17	.With explosive device
37.01	MOUNTS
37.02	.Anti-aircraft
37.03	.Light machine gun type
37.04	.Rifle and pistol mounts
37.05	.Mortars
37.06	.Submarine
37.07	.Trunnion
37.08	.Counterbalances
37.09	.Leveling
37.11	.Locks
37.12	.Spherical or oval bearing gun support
37.13	.Bases
37.14	.Reciprocating mounts
37.15	.With body protecting devices
37.16	.Aircraft type
37.17	..Power operated
37.18	..On engine
37.19	..On aircraft wing
37.21	..Retractable gun turret
37.22	..Multiple guns on mount
38	.Disappearing gun
39	..Counterpoise
40.01	.For field use
40.02	..Wheeled mortars
40.03	..On armored car
40.04	..Nonshielded motor driven guns
40.05	..On sleds
40.06	..On tripods (i.e., for light guns)
40.07	..Libers and caissons
40.08	..With hitches and couplings
40.09	..With training spades
40.11	..Carriage suspended for firing
40.12	..Traveling locks
40.13	..By separate transport carriage
40.14	..Components are separable for transport
40.15	..Trail carriages and links
40.16	..Railroad type
41.01	.Training mechanisms
41.02	..Motor operated
41.03	...Predetermining parameters for automatic firing
41.04	...Eliminates lag or overrun
41.05	...By television monitoring
41.06	...By light reception
41.07	...By radar
41.08	...By sound
41.09	...Gyroscopically or pendulum controlled
41.11	...Compensates for trunnion tilt
41.12	...By hydraulic means
41.13	...For scattering effect
41.14	...For naval gun fire control
41.15	...With unitary control for plural motors
41.16	..For relatively movable gun barrels
41.17	..Aiming device mounted on gun
41.18	..For limiting the field of fire
41.19	..Sights or line devices
41.21	...On aircraft
41.22	...For anti-aircraft
42.01	.With recoil check
42.02	..On trail spade
42.03	..Fire-out-of-battery type
43.01	..Fluid
43.02	...With function of elevation
44.01	..Spring type
44.02	...Elastic type
45	LOADING
46	.Hoisting apparatus
47	.Rammers

CLASS 89 ORDNANCE

DECEMBER 1990

1.11	WAGING WAR
1.14	EXPLOSIVE OPERATED APPARATUS
1.4	CHARGING MECHANISMS FOR GUNS
1.1	MISCELLANEOUS

CLASS 91 MOTORS, EXPANSIBLE CHAMBER TYPE

DECEMBER 1990

1	WITH SIGNAL, INDICATOR OR INSPECTION MEANS
2	CUTOFF OR CONTROL AFTER PREDETERMINED NUMBER OF CYCLES OR REVOLUTIONS
3	JET CONTROL TYPE
4 R	HYDRO-PNEUMATIC
4 A	..With float mechanism
5	WORKING MEMBER MOVED BY STORED MOTIVE FLUID CHARGE
6	FLUID SUPPLY THROUGH DIVERSE PATHS TO SINGLE EXPANSIBLE CHAMBER
6.5	.Three or more cylinders arranged in parallel, radial or conical relationship with rotary transmission axis
7	.Selective cyclic and noncyclic operation or parking
8	.Semi-compound type
9	..Changeable by shiftable distributor
10	..With condition responsive change-over valve
11	.Changeable from multiple expansion to simple operation
12	.Cyclically operable motor with port reversing
13	..By shifting distributor seat
14	..By shifting distributor
15	..Selector valve between distributor and motor
16	.Drifting or coasting on lower pressure
17	..With speed responsive cutoff of drifting fluid
18	..Pressure control of drifting fluid
19	.Diverse paths used to control extent of working member travel
20	.Position responsive
21	..Rotating working member or chamber
22	..Preliminary inlet to contracting chamber (e.g., cushioning)
23	...By bypassing from expanding chamber (399)
24	..Additional inlet path opened in response to position
25	...Working member or part carried thereby uncovers inlet port
26	....First path has check valve or selectively adjustable throttle
27	..Plural simultaneous paths, one cutoff in response to position
28	.Second path activated in response to pressure or flow in first path
29	..By pressure rise in first path
30	.Serially arranged reversing valves
31	.One path includes restriction
32	.Activation of one path disables second path
33	..Pressure operated
34	SINGLE ACTING, CHANGEABLE TO OR FROM DOUBLE ACTING
35	INDEPENDENTLY OPERATED TIMER, DELAY, PATTERN OR CYCLIC CONTROL
36	.Of independently movable working members
37	.Pattern or template control
38	.Fluid actuated valve with volume chamber delay means
39	.Independent distributor actuation for cyclic control
40	..Fluid actuated distributor motor
41	WITH CORRELATED CONTROL OF MOTIVE FLUID AND LOCKING MEANS
42	.By electrical control means
43	.Working member position control of motive fluid and locking means
44	.Sequential operation of locking means and motive fluid control
45	.Common or interconnected valve means control motive fluid and fluid for locking means
46	WITH INTERRELATED CONTROL OF MOTIVE FLUID AND LUBRICANT
47	CONSTANTLY APPLIED MOTIVE FLUID WITH CONTROLLED VENTING
48	.Plural separately controlled vents
49	.Fluid vented through working member
50	.Cyclically operable
51	.Motive fluid constantly applied to and vented from opposed chambers
52	CONSTANTLY OPEN THROTTLED EXHAUST WITH CONTROLLED MOTIVE FLUID SUPPLY
53	ENGINE ROTATING OR STARTING TYPE
54	CONVERTIBLE; OR CHANGEABLE BY DISASSEMBLY OR ASSEMBLY
55	COMBINED
59	TORQUE RESPONSIVE MOTIVE FLUID CONTROL
61	ROTARY AND RECIPROCATING WORKING MEMBERS
151	SERIALLY FORMED EXPANDING WORKING CHAMBERS (E.G., ENDLESS)
152	MULTIPLE EXPANSION
153	.Duplex
154	..Cut-off or reversing
155	.With fluid actuated distributor
156	.Concentric working chambers
157	.Relative valving adjustment between high and low pressure working chambers
158	..Adjustment for valving for plural chambers
159	.Expansion between relatively movable working members
160	..Double acting high and low pressure working members
161	..Fluid acts on each working member in single direction
162	...High and low pressure faces on each working member
163	.Fluid expanded through working member
164	.Dual, rigidly connected high and low pressure faces
165	APPLICATION OF MOTIVE FLUID AT DIFFERENT PRESSURES TO OPPOSED WORKING MEMBER FACES
166	.Double acting motor reversed by pressure variation of motive fluid
167 R	EXTENSION OF UNIT HAVING SEPARATELY CONTROLLED WORKING CHAMBERS EQUALS SUM OF INDIVIDUAL CHAMBER EXTENSIONS
167 A	..Vane
168	.Control of motive fluid for one working member in response to position of second
472	THREE OR MORE CYLINDERS ARRANGED IN PARALLEL RADIAL OR CONICAL RELATIONSHIP WITH ROTARY TRANSMISSION AXIS
473	.Condition responsive control of drive transmission
474	.Separate fluid supply or discharge paths
475	.Having yieldable drive transmission
476	.Separate motive fluid control for each working chamber
477	..Each piston acts as valve for different working chamber
478	..Means varies cyclic relation between reciprocating member and control valve therefor
479	..Control by moving cylinder or liner
480	..Mechanically actuated valves
481	...Radial cylinders
482	.Means varies cyclic relation between reciprocating member and control valve therefor

THREE OR MORE CYLINDERS ARRANGED IN PARALLEL RADIAL OR CONICAL RELATIONSHIP WITH ROTARY TRANSMISSION AXIS
.Means varies cyclic relation between reciprocating member and control valve therefor
483 ..By adjustment of transmission or reaction element
484 .Control valve seating surface contact maintained by fluid pressure bias
485 ..Disc valve
486 .Motive fluid bypass to or from assembly
487 ..Separate passage directs motive fluid to or from valve interface
488 ..Fluid conducting passage disposed within piston
489 ..Valved
490 .Motive fluid supply or discharge through piston
491 .Radially disposed cylinders
492 ..Plural banks
493 ..Rigidly connected pistons reciprocate within rigidly connected cylinders
494 ..Cylinders and pistons form or coact with respective common elements having limited relative rotary movement
495 ...Cylinders or pistons pinned to common element
496 ..Positive bidirectional drive or reciprocating members
497 ..Stroke control
498 ..Cooperating valve ports in cylinder and relatively movable central member
499 .Cylinders parallel to rotation axis
500 ..Plural angularly disposed cylinder banks
501 ..Cylinders contain plural oppositely movable pistons
502 ..Including plural axially spaced working chambers (e.g., double-acting working members)
503 ..Rotary spool valve
504 ..Stroke control
505 ...By varying reaction plate inclination relative to cylinder axes
506 ....Motor operated
507 ..Positive bidirectional drive of reciprocating members
169 SINGLE CHAMBER FORMED BY MUTUALLY RELATIVELY MOVABLE CYLINDER, SLEEVE AND PISTON
170 R RELATIVELY MOVABLE WORKING MEMBERS WITH ONE HAVING MOTIVE FLUID CONTROLLED BY, MOVABLY INTERCONNECTED WITH OR MOVED BY ANOTHER
170 MP ..Mine props
171 .Synchronizing in response to sensed difference in positions
172 .One working member oppositely biased by another
173 .One working member forms movable chamber for another
174 .With connection to relatively movable output member disposed between spaced unitary end faces
176 .Moving cylinders
177 .Oscillating working members
178 .Single valve unit controlling plural working chambers
179 ..Oscillating valve
180 ..Rotary valve
181 .Interconnected working members in communicating chamber portions
182 .Means connecting working members actuates common part controlling motive fluid for the members
183 .With means interconnecting working members to cause relative motion
184 ..Working member covers port to control motive fluid
185 ..Motive fluid control by pitman swing or intermittent contact with working member
186 ..Connection includes toothed gearing or rocking lever
187 ..Means varies cyclic relation between working member and control valve therefor
188 ..Motive fluid control actuator includes cam or crank rigid with means connecting working members
189 R .Position of one working member controls motive fluid for another
189 A ...Piston or rod directly valves passage
190 ..Changeable to plural self-controlled working members
191 ..Each cyclically controls another (e.g., duplex)
192 ...With three or more working members
193 ...Fluid operated valve controlled by relatively movable working member
194 ...Rotating output shaft type (e.g., locomotive or reversing means)
195 ...With self-control
196 MOVING CYLINDER
197 .Plural rigidly connected rotary cylinders
206 .With integral exterior working face
207 ..Both faces urged in single direction
208 ...Fluid to exterior face controlled by motive fluid pressure
209 ...Fluid to exterior face controlled by cylinder position
210 .Oscillating cylinder
211 ..Cooperating valve ports in cylinder and fixed member
212 ...Ported end bearing
213 ...Ported trunnion
214 ...Ported arcuate slide face on which cylinder moves
215 ..Cylinder carried valve operated by fixed actuator
216 R .Cylinder and piston have relative reciprocation on fixed axis
216 A ...Moving cylinder having follow-up
216 B ...Cyclical moving cylinder
217 ..Reciprocating piston and cylinder
218 CYCLICALLY OPERABLE
219 .With dwell
220 .With condition responsive stop means
221 ..Speed
222 .Distributor in piston (422)
223 ..Oscillating piston (e.g., vane)
224 ..Distributor establishes communication between opposite faces of piston
225 ..Piston traverses pilot port to control distributor motor motive fluid
226 ..Communication into piston through peripheral port
227 ...Port controlled by piston position
228 ..Piston carries separate inlet and exhaust valves
229 ..Distributor operated by abutment with cylinder head
230 .Codirectional separately supplied working members
231 ..One working member supply is distributor controlled
232 .Valveless distribution
233 ..Distribution by reciprocating working member moving about an axis

CYCLICALLY OPERABLE
.Valveless distribution
234 ..Working member formed to provide internal fluid flow passage
235 .Working chamber receives controlled motive fluid supply from opposed chamber having constant supply (321) (417)
236 .Multiple exhaust passages (e.g., compression control)
237 ..Exhaust valve has separate valve controlled second exhaust passage therein
238 ...Pressure controlled second passage
239 ..Distributor for inlet or first exhaust controls second exhaust passage
240 ..Fluid pressure actuated valve for second exhaust passage
241 ...Compression actuated discharge to motive fluid supply
242 ...Exhaust pressure controlled
243 ..Working member controlled exhaust port with valved second exhaust passage
244 ..Controlled by separate relatively movable valves
245 .Clearance control
246 .Correlated throttle valve and distributor
247 .Timing control by relative adjustment of plural movable fluid control elements
248 ..Electrical adjustment
249 ..With relative adjustment of plural adjustable fluid control elements
250 ...Adjustable inlet and exhaust events
251 ....With adjustable release and compression events
252 ..Cut off adjustable relative to admission
253 ...Inlet controlled by relatively cyclically moved elements
254 ....Biased cut off with adjustable trip
255 ....Adjustable fluid control for fluid actuated cut off
256 ....Cut off adjustable relative to reciprocating admission element
257 .....Oscillating admission element
258 .....Arcuate adjustment of cut off
259 .....Cut off adjustable codirectional with admission element movement
260 ...Biased inlet valve with adjustable tripping means
261 ....Inlet valve movable about an axis
262 ...Adjustable cam or cam follower actuated inlet valve
263 ...Adjustable fluid control for fluid actuated inlet valve
264 .Relatively movable serial distributors
265 .Relatively movable inlet and exhaust valves
266 ..Oscillating working member
267 ..Lost motion drive from inlet to exhaust valve
268 ..Exhaust valve closed or held closed by inlet fluid (442)
269 ..Biased valve with trip
270 ..Inlet and exhaust valve movable about an axis
271 ..Reciprocating inlet and exhaust valves
272 ...Codirectional with working member movement
273 ....Axially seating valves
274 .With independent throttle adjustment for one side of double-acting motor
275 .Electrically or magnetically actuated or adjusted distributor (459)
276 .Distributor forms traversed movable portion of working chamber wall (423)
277 .Adjustable working member reversal position (e.g., stroke control)
278 ..Selective diverse supply or exhaust paths for distributor motor
279 ..Adjustable lost motion connection
280 .Pulsator-actuated distributor (460)
281 .Working member controlled motive fluid for distributor motor
282 ..Fluid supply through diverse paths to distributor motor chamber
283 ...Path controlled by independently operable means
284 ..Independent means to adjust distributor motor supply or exhaust passage
285 ...Separately adjusts one chamber of double-acting distributor motor
286 ..Distributor or distributor motor mechanically moved cyclically to control actuating fluid for distributor motor
287 ...Movement of relatively movable pilot mechanically moves distributor
288 ...Distributor motor mechanically moved about axis
289 ..Adjustable means to retard or lock distributor motor
290 ..Working member traverses pilot port in working chamber side wall
291 ...Port controls separate motor for intermediate pilot valve
292 ....Distributor controls passage from port
293 ...With passage from port controlled by pilot valve
294 ....Pilot valve operated by separately controlled fluid motor
295 ...Plural ports control relatively movable distributor motors
296 ...Constantly open exhaust from distributor working chamber
297 ...With passage for pilot fluid in working member
298 ....Working member passage supplies distributor motive fluid
299 ...With distributor reversal by fluid compressed by working member
300 ...With distributor reversal by constantly supplied motive fluid
301 ...With control of distributor motor supply or exhaust port by distributor working member
302 ...Pilot port relieved into working chamber having working member controlled exhaust port
303 ..Working member adapted to directly mechanically reverse distributor
304 ..Pilot valve controlled distributor motor (461)
305 ...Plural pilot valves
306 ....Independent
307 ...Pilot valve relieves constantly supplied distributor motor fluid
308 ...Fluid-operated pilot valve
309 ...With distributor motor reversal by constantly applied fluid pressure
310 ...Pilot valve moves about an axis
311 ...Pilot valve moves laterally relative to working member reciprocatory path
312 ...Distributor motor working member is valve seat for pilot valve
313 ...Pilot valve actuator extends into working chamber
314 ...Working member reverses pilot through part movable relative to both
315 ..Distributor moves about an axis

CYCLICALLY OPERABLE
.Working member controlled motive fluid for distributor motor
316 ..Distributor moves laterally relative to working member reciprocatory path
317 ..Working member compresses fluid to reverse distributor
318 ..Motive fluid build-up at end of working stroke reverses distributor
319 ..Working member traverses pilot passage to control distributor motor
320 ...Port in piston between opposed working faces
321 .Motive fluid constantly applied to one working member face (235) (417)
322 .With independently operable means to lock distributor
323 .Relatively movable distributors for opposed working chambers
324 ..Distributor moves about an axis
325 .Working member controlled inlet or exhaust port (e.g., semi-valveless)
326 .Distributor moves transverse and parallel to same line
327 .Distributor moves about axis parallel to working member reciprocatory path
328 .Distributor peripherally engages (1) working chamber wall, or (2) cylinder between opposed working faces
329 .Distributor located in cylinder between spaced working faces
330 .With independently operable means to move or means to adjust movement of distributor
331 ..Means adjusts motion transmission from working member to distributor
332 ...Adjusting means comprises motor
333 ...Speed controlled
334 ...To reverse direction of rotation of interposed shaft
335 .With throttle valve or distributor throttle adjustment
336 ..Speed controlled
337 .With means independent of distributor reversing parts to cyclically hold distributor
338 ..Positive hold (e.g., tripped type)
339 .Oscillating working member
340 ..Distributor reversed by rotated part
341 R .Distributor actuator extends into working chamber
341 A ...Valves in partition between tandem pistons
342 ..Axially slidable through working face
343 ..Moves laterally relative to working member reciprocatory path
344 .Biasing means moves distributor after predetermined travel (i.e., snap action)
345 ..Distributor moves about axis
346 ..Spring biased
347 ...Coil spring moves laterally relative to coil axis
348 .Distributor actuator between space piston faces
349 ..Distributor moves about axis
350 .Working member reverses distributor through part movable relative to both
351 ..Meshing rotary gear
352 ..Distributor moves about axis
353 ..Distributor moves laterally relative to working member reciprocatory path
354 ..Rotated part
355 CUTOFF AFTER SINGLE COMPLETE CYCLE
356 .Reversal responsive to motive fluid pressure change
357 SELECTIVELY USABLE OR POSITIONABLE WORKING MEMBER CONTROLLED VENT IN CHAMBER WALL (402)
358 R WORKING MEMBER POSITION FEEDBACK TO MOTIVE FLUID CONTROL
358 A ..Valve locking means
359 .Regenerative or positive feedback type
360 .With safety means operable upon input signal loss
361 .Electrical input and feedback signal means (459)
362 ..Means provides incremental movements (e.g., stepper type)
363 R ..Follower type
363 A ....Fail safe control
364 .With means to vary feedback signal in response to rate of working member movement
365 .With main valve position feedback to pilot valve
366 .Speed governor controlled input signal (458)
367 .Plural input signal means for single motor valve (453)
368 .Follower type
369.1 ..With relatively movable working and output members reacting on input member
369.2 ...Rubber block reaction means
369.3 ....And transverse valve key
369.4 ...Lever reaction means
370 ..With motor chamber pressure reaction on valve
371 ...With valve means limiting reaction pressure
372 ...Spring-loaded valve
373 ....With lost motion between input and reaction member
374 ..Plural movable valve parts
375 R ...Valve part moves about an axis
375 A .....Torsion bar
376 R ...One movable part unitary with working member
376 A .....Vane
377 ....Lost motion linkage connecting valve, load and working member
378 ....Axially movable spool-type valve
379 ..Disproportional rate of response
380 ..Screw and follower (e.g., nut)
381 ..Differential gearing
382 ..Cam and follower
383 ..Cable
384 ..Floating link
385 .Bias-type input and feedback signal means
386 ..Feedback bias means adjustable
387 ..Spring-type feedback bias means
388 .Fluid operated
389 .Adjustable
390 POSITION MAINTAINING TYPE
391 R WITH ALTERNATIVE MANUAL ACTUATION OF LOAD
391 A ..Alternate pedal positions
392 WORKING MEMBER POSITION RESPONSIVE MOTIVE FLUID CONTROL
393 .Position initiated timing or delay means
394 .Working member carries part within working chamber which controls port in chamber end wall
395 ..Part movable with respect to working member
396 ..Part forms throttle member
397 .Alternate control of inlet and exhaust for same chamber at opposite ends of stroke
398 .Simultaneous control of inlet and exhaust of same chamber

	WORKING MEMBER POSITION RESPONSIVE MOTIVE FLUID CONTROL
399	.Bypassing between expanding chamber and closed or throttled contracting chamber (e.g., cushioning) (23)
400	.Venting expanding chamber
401	..Through working member
402	..Working member overrides exhaust port (357)
403	.Position controls actuating fluid for valve
404	.Exhaust control
405	..Throttling (e.g., cushioning)
406	...Exhaust valve with bleed passage therein
407	...By successively controlling or controlling less than all of plural exhaust passages
408	....Working member covers exhaust port (409)
409	..Working member covers exhaust port in contracting chamber (408)
410	.Working member controls relatively movable inlet valve
508	PLURAL RELATIVELY MOVABLE OR RIGIDLY INTERCONNECTED WORKING MEMBERS
509	.Having (1) stand-by or (2) redundant means enabling load to be driven upon failure of primary load moving means
510	..Stand-by means utilizes an auxiliary motive fluid source for another working member to drive same load
511	.Condition responsive means for modifying working member operation
512	..Condition is that of a load driven by a working member other than working member having its operation modified
513	..Condition is position of fluid control member of motor other than motor whose operation is modified
514	..Pressure responsive valve divides motive fluid between motors
515	...For synchronization of motors
516	...To give one motor priority to motive fluid over another
517	..Condition sensed is working member speed or working fluid pressure of another motor (i.e., fluid pressure or flow to or from expansible chamber of the other motor)
518	..Motive fluid control valve responsive to pressure in supply line to or exhaust line from motor which it modifies
519	.With means for selectively changing the speed or force exerted on load by the selective application of motive fluid in a single direction to one or more working members
520	.Motors connected in series
521	.Separate valve means actuatable by a common nonmanual actuator or separately actuatable means with common manual actuator
522	..With means to independently actuate valve means
523	..Simultaneously actuated separate valve means
524	..Successive actuation of separate valve means
525	.With means to control the working fluid to one working member for movement relative to another without controlling the working fluid to the other working member by said means
526	..With multiway valve in series with control means
527	..Valve controlled by remote means (e.g., radio, electromagnetic, etc.)
528	..Control means is fluid pressure operated valve
529	...Fluid pressure operated valve controlled by a pilot valve
530	..Control means includes separate control valves for each working member
531	...With additional control valve in series with at least one separate control valve in supply line to one of motors
532	.With means for proportioning motive fluid supply to plural motors
533	.Single valve for plural rigidly connected working members
534	.Single valve for relatively movable working members driving common load
535	.Relatively movable working members of unequal cross-sectional areas
536	.Single valve for relatively movable working members
415	DIFFERENTIAL
416	.Opposing pressure applied by bypassing
417 R	.Motive fluid constantly applied to one working member face (235) (321)
417 A	...Staplers having two diameter pistons
418	WITH MOTIVE FLUID VALVE
419	.Responsive to (1) motive fluid temperature or state, or (2) motor position or orientation
420	.Contracting chamber exhaust valve controlled by expanding chamber pressure or flow
421	.Expanding chamber inlet controlled by contracting chamber pressure or flow
422	.Valved piston (222)
423	.Valve part forms traversed movable portion of working chamber wall (276)
424	.Two hand control
425	..With motor-controlled holding means for valve
426	.With fluid pressure holding means for valve
427	.Plural manual control stations
428	.Manual control carried on or operated from load or output element
429	.Dither valve
430	.Valve parts continuously relatively moved for nonvalving function
431	.Continuous motive fluid flow through chamber in motor idle condition
432	.Inlet check valve with means for disconnectable supply line (468)
433	.Both inlet and exhaust controlled by motive fluid pressure in supply line or chamber
434	..With manual valve actuating means responsive to motive fluid pressure (e.g., "feel")
435	.Controlled by rate of movement of working member
436	.Inlet fluid supplemented by controlled fluid pressurized in opposed contracting chamber
437	.Independent control of bypass between opposed working chambers
438	..Held closed by motive fluid pressure
439	...Bypass through supply line
440	.For exhausting contracting working chamber to expanding opposed nonworking
441	.With ambient fluid inlet valve to expanding working chamber
442	.Self-opening exhaust valve held closed by inlet pressure (268)

	WITH MOTIVE FLUID VALVE
443	.To provide unequal inlet and exhaust flow rates to single working chamber
444	.Relatively movable serial valves
445	..Stop valve between working chamber and inlet and exhaust valve
446	..Including motive fluid pressure or flow responsive valve (468)
447	...Between working chamber and inlet and exhaust valve
448	..In supply path
449	.Plural separately controlled waste passages for single working chamber
450	..One passage controlled by inlet and exhaust valve
451	...Another passage controlled by motive fluid pressure or flow responsive valve (468)
452	..One passage controlled by motive fluid pressure or flow-responsive valve (468)
453	.Plural actuators for single valve means (367)
454	.Relatively movable inlet and exhaust valves for single working chamber
455	..One valve forms unitary part of valve controlling opposed working chamber
456	..One valve moves about an axis
457	..Single actuating means moves both valves
458	.Speed governor operated (366)
459	.Electrically operated (275) (361)
460	.Pulsator actuator for valve (280)
461	.Pilot valve (304)
462	.For double-acting motor
463	..With means to provide unequal flow rates to or from opposed working chambers
464	..Means to simultaneously open working chambers to inlet or exhaust
465	..Relatively movable unitary inlet and exhaust valves for opposed working chambers
466	..Unitary inlet and exhaust valve means for opposed working chambers
467	...Valve means moves about an axis
468	.Self-acting valve (432) (446) (451) (452)
469	.Unitary inlet and exhaust valve for single working chamber
470	..Valve moves about an axis
471	MISCELLANEOUS (E.G., METHODS)
	******************************
	DIGESTS
	******************************
DIG 1	Digital
DIG 2	Exhaust throttled motor control
DIG 3	Large area valve
DIG 4	Magnets

1 WITH TEMPERATURE COMPENSATION
2 ONE WORKING MEMBER RECIPROCATES AND ANOTHER ROTATES COMMON OUTPUT MEMBER
3 WITH DISENGAGEABLE ROTARY DRIVE FOR MOVING WORKING MEMBER
5 R WITH (1) SIGNAL OR INDICATOR OR (2) INSPECTION WINDOW IN EXPANSIBLE CHAMBER WALL PORTION
5 L ..With lock
6 R EFFECTIVE AREA OF WORKING MEMBER END FACE SELECTIVELY VARIABLE
6 D ..With diaphragm
7 WITH OVERCENTER MEANS TO BIAS WORKING MEMBER IN OPPOSITE DIRECTIONS OVER DIFFERENT PORTIONS OF STROKE
8 WITH MEANS TO CONTROL FLOW OF NON-WORKING ARRESTING FLUID FOR WORKING MEMBER
9 .Flow control means positioned between chambers having a common wall movable with working member
10 .Work member position control
11 ..With auxiliary adjustable throttle (12)
12 .Adjustable throttle (11)
12.1 DISPLACEMENT CONTROL OF PLURAL CYLINDERS ARRANGED IN PARALLEL, RADIAL, OR CONICAL RELATIONSHIP WITH ROTARY TRANSMISSION AXIS
12.2 .Parallel cylinders
13 ..WITH ADJUSTABLE MEANS TO VARY STROKE OF WORKING MEMBER
13.1 .Having motor-operated adjustment
13.2 .Flexible wall-type working member
13.3 .Stroke of one working member adjustable relative to another
13.4 .Predetermined discrete incremental adjustment positions
13.41 ..Adjustment by assembly or disassembly
13.5 .Independent adjustment of opposite stroke limits of single reciprocating working member
13.51 .Axial adjustment of spaced, rigidly interconnected working member faces
13.6 .Adjustable abutment positioned within working chamber
13.7 .BY adjusting or limiting motion of relatively movable power transmission element
13.8 .Adjustment means includes external axially extending threaded piston stem
14 WORKING MEMBER MOVES LOAD AND LATCHING MEANS FOR LOAD
15 WITH RELEASABLE STOP OR LATCH MEANS TO PREVENT MOVEMENT OF WORKING MEMBER
16 .With timing or delay means
17 .Engages member coaxial with and rotatable relative to working member
18 .Includes interfitting parts engageable at plural positions including position intermediate stroke limits
19 ..Self-engaging
20 .Engages power element movable relative to working member
21 R .Plural selectively operable actuators for releasable means
21 MR ...Manual release
22 .Relatively movable working members with interdependent means
23 .Means includes element interfitting between working member and fixed part
24 ..Element actuated or retained in operative position by relatively movable fluid responsive member
25 ...With pivoted link between element and member
26 ...Resilient element
27 ..Fluid actuated (28)
28 .Fluid actuated (27)
29 WITH RELEASABLE LATCH MEANS BETWEEN WORKING MEMBER AND POWER TRANSMISSION ELEMENT AXIALLY SLIDABLE THEREIN
30 WITH RESILIENT DETENT
31 RECTILINEARLY MOVING WORKING MEMBER AND COAXIAL OR PARALLEL ELEMENT SLIDABLY INTERENGAGED FOR RELATIVE ROTARY MOVEMENT
32 .Working fluid-actuated interengaging means permits unidirectional rotation of element relative to fixed part
33 .Element extends through working member portion
34 BELLOWS TYPE EXPANSIBLE CHAMBER
35 .Expansible chamber formed by concentric bellows
36 .With non-bellows type expansible chamber
37 .Plural bellows
38 ..Non-working liquid moved by first bellows effects movement of second bellows
39 ..With common movable wall
40 .With separate biasing means
41 .With vibration damping means
42 .With separate ring-like reinforcing element abutting pleat
43 .With stop means to limit axial movement of bellows
44 .With guide means
45 .Superposed peripherally interconnected elements
46 ..With nonmetallic portion
47 .Specific or diverse material (103)
48 PLURAL FLEXIBLE WALL WORKING MEMBERS
49 .Diaphragm type having working fluid contacting areas of different size
50 .Oppositely movable walls of common chamber (69) (75)
51 MUTUALLY RELATIVELY MOVABLE CYLINDER OR SLEEVE, MEMBER SEALINGLY SLIDABLE THEREIN AND OUTER CYLINDER THEREFOR
52 .Cylinder or sleeve forms working member
53 .With additional cylinder relatively slidable exteriorly of outer cylinder
54 ROTATING CYLINDER
55 .Fluid conduit coaxial with axis of rotation
56 .Plural cylinders
57 ..Axes of cylinders parallel to axis of rotation
58 ..Axes of cylinders intersect axis of rotation at common point
58.1 KNOCKDOWN OR FLOW CONDUIT STORAGE OR RETRIEVAL MEANS
59 CONVERTIBLE, OR CHANGEABLE BY ASSEMBLY OR DISASSEMBLY
60 WITH FLEXIBLE OR RESILIENTLY BIASED NON-WORKING MEMBER MOVABLE WALL IN CONSTANT COMMUNICATION WITH WORKING CHAMBER
60.5 SELECTIVE CLEARANCE CONTROL
61 RELATIVELY MOVABLE WORKING MEMBERS
62 .First working member moves second coaxial working member through separating abutment surfaces
63 ..With separate biasing means for a working member
64 .One a flexible wall type
65 .Rigid stem on first working member portion extends through second working member
66 .Moving cylinders
67 .Oscillating working members
68 .Interconnected with common rotatable shaft

RELATIVELY MOVABLE WORKING MEMBERS
.Interconnected with common rotatable shaft
69 R ..Oppositely movable walls of common chamber (50) (75)
69 A ....One piston rod passes through opposite piston rod
69 B ....Single crankshaft offset from center of work chamber
70 ...Shaft axis parallel to axes of working members (71)
71 ..Shaft axis parallel to axes of working members (70)
72 ..Shaft axis intersected by axes of working members
73 ...Parallel working members
74 ....Shaft extends transversely through working members
75 .Oppositely movable walls of common chamber (50) (69)
76 .Interconnected by linkage having relatively movable members
77 GROUND EMBEDDED EXPANSIBLE CHAMBER
78 WITH FLUID PURIFYING MEANS
79 .Means separates gas from liquid
80 WITH FORCE EXERTING MEANS TO MOVE FLUID FROM NON-WORKING CHAMBER
81 WORKING MEMBER FORMS RESERVOIR FOR NON-COMPRESSIBLE WORKING FLUID
82 WITH MEANS TO CONTROL FLUID FLOW FROM NON-WORKING CHAMBER
83 LIQUID POOL SEALING RELATIVELY MOVABLE CHAMBER WALLS
84 RESILIENT MEANS INTERPOSED BETWEEN WORKING MEMBER AND RELATIVELY MOVABLE POWER TRANSMISSION ELEMENT
85 R WITH CUSHIONING MEANS EFFECTIVE OVER A PORTION ONLY OF STROKE
85 A ..Metal spring
85 B ..Fluid spring
86 WITH REMOVAL CONDUIT FOR LIQUID SEEPAGE FROM EXPANSIBLE CHAMBER
86.5 PASSAGE IN CYLINDER FOR APPLICATION OF SEPARATE FLUID TO CYLINDER AND PISTON SIDE WALL INTERFACE
87 WITH NON-SEALING CLEANING MEANS
88 SEALED OPENING IN LONGITUDINAL WALL OF CHAMBER FOR RECEIVING WORKING MEMBER PORTION
89 COLLAPSIBLE CHAMBER WALL PORTION (E.G., HINGED OR FLEXIBLE WALL)
90 .Wall portion formed of flexible material
91 ..Envelope having restricted fluid opening
92 ...Non-metallic
93 ..Annular flexible wall portion peripherally sealed to spaced relatively fixed concentric rigid members
94 ..With separate biasing means
95 ...Adjustable
96 ..Diaphragm type
97 ...Axially spaced flexible wall portions with interposed incompressible means
98 R ...Entire periphery secured to rigid working chamber forming wall
98 D .....Rolling diaphragm
99 ....With undistortable member secured to central portion of diaphragm
100 .....Member includes coextensive plate-like elements secured to opposite side of diaphragm
101 ....Abutment connection between diaphragm and power transmission element
102 ....With separate seal means between diaphragm and member
103 R ...Specific or diverse material (47)
103 F .....With reinforcement embedded in diaphragm
103 SD .....Synthetic diaphragm (non-metal and non-rubber)
103 M .....Metal diaphragm
104 ...Corrugated
105 ..Coaxial radially spaced relatively movable undistortable members joined by flexible wall
106 FLUID CONDUIT IN CONSTANT COMMUNICATION WITH RELATIVELY ROTATABLE WORKING CHAMBER
107 ANNULAR WORKING MEMBER OR ANNULAR LINEARLY EXTENDING CHAMBER THEREFOR
108 .Axially extending hollow stem on working member
109 PISTON WITH RIGID AXIALLY EXTENDING HOLLOW STEM
110 .Hollow stem forms axially extending fluid passage
111 ..Plural laterally spaced passages
112 ..Passage communicates with lateral port extending through piston side wall portion
113 .Relatively movable elongated part within stem
114 ..Part and stem relatively axially adjustable
115 ...Part forms actuator for piston side wall portion adjusting means
116 WITH AXIALLY EXTENDING ELEMENT MOUNTED ON WORKING MEMBER FOR RELATIVE ROTARY MOVEMENT ONLY
117 R MOVING CYLINDER
117 A ..Stationary piston or movable piston with moving cylinder
118 .Pivoted
119 ..With fluid conduit extending through pivoted connection
120 OSCILLATING WORKING MEMBER OR CYLINDER THEREFOR
121 .Oscillatory shaft with radially extending vane
122 ..Plural angularly related vanes
123 ..With lost motion connection between vane and shaft
124 ..With resiliently biased vane peripheral portion
125 ..Vane includes non-metallic peripheral sealing portion
126 WITH DIFFERENTIAL RADIAL THRUST PRODUCING MEANS FOR WORKING MEMBER
127 .Fluid pressure type
128 WITH ASSEMBLY OR DISASSEMBLY FACILITATING MEANS
129 ABUTMENT CONNECTION BETWEEN WORKING MEMBER AND POWER TRANSMISSION ELEMENT
130 R WITH SEPARATE BIASING MEANS FOR WORKING MEMBER
130 A ..Bias normally held inoperative by fluid pressure
130 B ..Bias other than coil spring
130 C ..Bias external of both expanding and contracting chamber
130 D ..Plural coil springs
131 .Biasing means maintains working member intermediate stroke end limits
132 .Tension spring
133 .Adjustable
134 .Fluid spring
135 .Biasing means engages working fluid contacting portion of working member
136 WITH TOOTHED GEAR, SPLINE OR THREAD RIGID WITH WORKING MEMBER

137	WITH FLEXIBLE TRANSMISSION ELEMENT SECURED TO WORKING MEMBER
138	WITH LINKAGE OR TRANSMISSION ENGAGING PORTION INTERMEDIATE SPACED WORKING MEMBER END FACES
139	WITH CYLINDER WALL CONTACTING GUIDE ARTICULATED TO PISTON
140	WITH LINKAGE OR TRANSMISSION HAVING RELATIVELY MOVABLE MEMBERS
141	WITH SEPARABLE FLUID DEFLECTING SHIELD OR BAFFLE ON WORKING MEMBER
142	WITH RESERVOIR FOR NON-COMPRESSIBLE WORKING FLUID
143	WITH MOVEMENT DAMPING MEANS (E.G., FLUID FLOW RESTRICTOR)
144	WITH ENCOMPASSING HEAT EXCHANGE MODIFYING SPACE OR JACKET
145	COMBINED
146	PLURAL UNITARILY MOUNTED CYLINDERS OR FRAME THEREFOR (161)
147	.With casing or support for rotary shaft
148	..Three or more radially arranged cylinders
149	..V-type
150	..Coaxial cylinder (151)
151	.Coaxial cylinders (150)
152	..With different cross-sectional areas
153	WITH LUBRICATING MEANS
154	.Lubricant entrained by working fluid
155	.Portion of expansible chamber device includes solid lubricating material
156	.Valve means in lubricant passage
157	.Lubricant passage extends axially through articulated piston rod
158	.Piston has lubricant retaining or conducting means
159	..Pocket or chamber
160	..Port or passage extending through side wall portion
161	WITH SUPPORT OR FRAME (146)
161.5	.Wheel supported
162 R	SPACED CYLINDER AND PISTON WALLS DEFINE PASSAGE BETWEEN OPPOSED PISTON SIDE WALL ENDS
162 P	..Passage in piston
163	FLUID CONDUIT OR PORT IN FIXED WALL OF WORKING CHAMBER
164	.Port in separable chamber end closure
165 R	WITH GUIDE OR SEAL ON CYLINDER END PORTION FOR PISTON OR MEMBER MOVED BY PISTON
165 PR	..Prevent rotation
166	.Additional guide is spaced chamber end wall
167	.Guide movable laterally
168	.Non-metallic seal means between piston or member and end portion
169.1	CYLINDER DETAIL
169.2	.With reinforcing member
169.3	..Extending through working member
169.4	...Coaxial sleeve or tube
170.1	.Nonmetallic piston contacting portion
171.1	.Cylinder or liner retained in casing by casing closure or closure associated means
172	PISTON
173	.With rotation imparting fluid impinging surface on piston part
174	.Liquid between axially spaced side wall portions
175	.Spaced faces joined by rigid stem (e.g., spool)
176	.With enclosed insulating space in piston part
177	.Non-circular
178	.With ball or roller anti-friction means on side wall portion
179	.Articulated connecting rod end forms portions of piston face
181 R	.With fluid passage in piston face
181 P	...Passage thru piston to opposite chamber
182	..Passage communicates with packing receiving recess
183	...Valved
184	...Passage in opposed piston faces
185	....Passages communicate with common packing receiving recess
186	.With ported chamber in piston part for circulating heat exchange fluid
187	.With separable means for pivotally mounting connecting rod to piston
188	..Means retained by annulus positioned about piston periphery
189	..Piston formed of separable end face and side wall portion
190	...Means secures end face portion to side wall portion
191	..Fastener for separable means extends through end face portion
192	.Plural integral radially extending resilient metallic sealing tongues on side wall portion
193	.With spring means for biasing side wall portion radially
194	..Biased portion comprises peripheral axially extending flexible lip
195	..Open ended hollow skirt comprises biased portion
196	...Spring part positioned in skirt slit
197	...Adjustable bias (199)
198	...Split annular type spring (200)
199	..Adjustable bias (197)
200	..Split annular type spring (198)
201	.Radially adjustable side wall portion
202	..Adjustable portion comprises open-ended hollow skirt
203	...Adjustment effected by wedge member movable relative to skirt (207)
204	..Adjustment effected by selectively removable spacer or skim element between relatively movable parts
205	..Side wall portion positioned between relatively axially adjustable rigid end members
206	...With beveled abutting surfaces between side wall portion and an end member
207	..Adjustment effected by wedge member movable relative to side wall portion (203)
208	.Open-ended hollow skirt type (e.g., trunk type)
209	..Frusto conical skirt
210	..With weight balancing means
211	..Element of diverse material extending through skirt wall abuts circumferentially extending resilient ring
212	..With nonmetallic portion
213	..End face surface includes areas of diverse material
214	..Spaced wall skirt
215	..Separate resilient elements secures end face portion to skirt portion
216	..Plural separable parts
217	...Interconnected by relative rotation of parts
218	....With means to prevent relative rotation of parts
219	...Interconnected without separate fastening means
220	...Threaded fastener
221	....Fastener extends through end face

PISTON
.Open-ended hollow skirt type (e.g., trunk type)
222 ..Specific or diverse material; or welded, brazed or soldered joint
223 ...Coated
224 ...End face and skirt periphery of diverse material
225 ...Element of diverse material for limiting radial movement of skirt part
226 ....Bi-metallic restraining element
227 ....Element positioned about periphery of skirt
228 ....Element portion embedded in piston part
229 .....Annular element
230 ......Element encircles connecting rod pin supporting boss
231 ...Welded, brazed or soldered (260)
232 ..Spaced skirt parts jointed by resilient arcuate web
233 ..Oval-shaped skirt portion
234 ..Skirt includes slit
235 ...Slit transverse to skirt axis
236 ....With additional angularly related slit
237 ..Circumferentially spaced portions at free end of skirt
238 ..Connecting rod pin supporting boss laterally spaced from skirt portion
239 ..With rib or strut means on piston part
240 .Side wall portion includes peripheral axially extending flexible lip
241 ..With embedded reinforcing means in lip portion (254)
242 ..Plural axially spaced lips
243 ...Oppositely facing
244 ....Lips formed on separable elements
245 ..Lip forms peripheral portion of imperforate cup shaped element
246 ..Metallic lip
247 .Fluid pressure responsive axial movement of end face portion radially moves side wall portion
248 .Nonmetallic portion
249 ..Flexible
250 ...Flexible side wall portion between separable axially spaced rigid members
251 ....Wall portion comprises plural axially aligned flexible elements
252 .....Three or more elements
253 ...Axially spaced flexible side wall forming elements with interposed rigid spacer member
254 ...With imbedded reinforcing means (241)
255 .Plural separable parts
256 ..Fastening means for parts include resilient element
257 ..Side wall portion interposed between separable axially spaced rigid members
258 ...Rigid members connected by coaxial rigid stem or rod
259 ..Side wall portion and relatively movable piston part having abutting inclined surfaces
260 .Welded, brazed or soldered (231)
261 MISCELLANEOUS (E.G., CRANKCASE)
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DIGESTS
****
DIG 1 Bearing on piston or cylinder
DIG 2 Fluid bearing
DIG 3 Flexible drive
DIG 4 Lost motion

CLASS 98 VENTILATION

1	MISCELLANEOUS
1.5	PRESSURE MAINTENANCE (E.G., AIRCRAFT)
2	AUTOMOBILE
2.01	.Condition responsive control
2.02	.Parked, e.g., for drive-in theater
2.03	.Seat
2.04	.Side or rear window defroster
2.05	.Heating
2.06	..Outside air intake to heat exchange core
2.07	...Cowl intake
2.08	..Heating and defrosting system
2.09	..Defroster
2.1	...Windshield exterior
2.11	.Air treatment, e.g., cooling, filtering
2.12	.Open window ventilator, e.g., deflector
2.13	..At upper edge or sliding window
2.14	.Ventilating structure in roof
2.15	..Duct extends lengthwise of roof
2.16	.Cowl ventilator
2.17	..Having moisture deflector or drain
2.18	.Closed vehicle exhaust
2.19	.Windshield ventilator
3	LOCOMOTIVE CAB
4	CAR
5	.Sleeping
6	.Freight
7	..Ice-bunker closure
8	.Inlet and outlet
9	..Injector and ejector
10	..Air pump
11	...Axle operated
12	..Liquid contact
13	.Inlet
14	..Air pump
15	...Wind-operated motor
16	...Axle operated
17	..Liquid contact
18	..Deflecting separator
19	.Outlet
20	..Ejector
	..Air pump
21	...Wind-operated motor
22	...Axle operated
	.Agitating fan
23	..Wind-operated motor
24	..Axle operated
25	.Dust guards
26	..Inside of window
27	..Outside of window
28	LOCOMOTIVE-CAB DUST GUARDS
29	BUILDING
30	.Liquid contact
31	.Hollow wall
31.5	.Forced recirculation of building air alone
31.6	..For use with heating or cooling means
32	.Having both inlet and outlet airways
33.1	..With air pump
34	...Wind-operated motor
34.5	...Air partially recirculated within building
34.6	....For use with heating or cooling means
35	..Cowl
36	.Protecting air current
37	.Having inlet airway
38.1	..Including structure for mixing plural air streams together
38.2	...And having specific noise inhibiting structure
38.3	...With shaped nozzle
38.4	....And readily movable air regulating louver, damper, or cover
38.5	...With readily movable air regulating louver, damper, or cover
38.6	....Pivoted
38.7	.....Plural
38.8	......Including parallel louver vanes
38.9	...With air pump
39.1	..With air pump
40.01	..With air distributer
40.02	...Having airway joint with ball or cylinder rotatable in a socket
40.03	...Baseboard type
40.04	....Having portion or element movable during normal use
40.05	...Ceiling type diffuser
40.06	....Having emergency smoke or fire responsive valve
40.07	....With light fixture
40.08	.....Air passes over lamp
40.09	.....Having adjustable valve
40.1	....Having perforated or porous element
40.11	.....Having portion or element movable during normal use
40.12	....Having plural vanes
40.13	.....Concentric
40.14	....Having elongated output slot
40.15	.....Single, annular output slot
40.16	.....Having portion or element movable during normal use
40.17	......Pivoted
40.18	...Air nozzle
40.19	...Having air duct extending into room
40.2	...Having louver
40.21	....With concentric vanes
40.22	.....Having separate, adjustable internal damper
40.23	.....Adjustable vane
40.24	....Movable louver
40.25	.....Temperature responsive
40.26	.....Aligned multiple movable sets of vanes
40.27	......Serially arranged sets
40.28	.....Repositionable set
40.29	.....Rotating disks
40.3	.....Continuously oscillating
41.1	..With adjustable valve
41.2	...Axially movable
41.3	...Sliding
42.01	.Having outlet airway
42.02	..With air pump
42.03	...And having specific emergency smoke handling structure
42.04	...Having specific air pump actuator
42.05	...Pump induces draft in exit duct
42.06	...Having plural suction intakes
42.07	...Ceiling or wall mounted
42.08	....Having vibration absorbing or preventing structure
42.09	....Having readily movable air regulating louver, damper, or cover
42.1	.....Upstream of air pump
42.11	...With movable access cover
42.12	...With readily movable air regulating louver, damper, or cover
42.13	...Having exterior neck with enlarged, weather resistant cover
42.14	..For skylight
42.15	..Having emergency smoke handling feature
42.16	..Having readily movable air regulating louver, damper, or cover
42.17	...Internal damper
42.18	....Continuously horizontal damper panel
42.19	....Pivoted damper panel
42.2	...Along roof ridge
42.21	..Along roof ridge
42.22	..Slant roof ventilator
42.23	..Having exterior neck with enlarged, weather resistant cover
44	.Window wind deflectors
45	.Flue heaters
46	..Chimney

	BUILDING
	.Flue heaters
47	..Gas jet or lamp
48	.Air entering furnace or chimney
49	RAILWAY TUNNELS AND SUBWAYS
50	MINES
51	PROVISION SAFES
52	STORAGE
53	.Grain ships
54	.Buildings
55	.Grain bins
56	.Perforated conduits
57	..Inserters
58	CHIMNEYS
59	.Valved cap
60	.Metal
61	COWLS
62	.Inlet and outlet
63	..Wind vane
64	.Inlet
65	..Wind vane
66.1	.Outlet
67	..Brick chimney cap
68	..Wind vane
	...Rotary air pump
69	....Rotary wind motor
70	...Ejector
71	...Wind shield
72	..Rotary wind motor
73	..Tilting top, wind operated
74	..Swinging valves, wind operated
75	..Rotary vane-wheel
76	..T-top
77	...Swinging valves, wind operated
78	..Ejector
79	...Back-draft preventer
80	..Spiral
81	..Spaced ring
82	..Four-side outlets with shield
83	..Spaced cap
84	...Spaced band
85	...Positively actuated valve
86	....Fusible release
86.5	..Having cross section with multiple sides
87	DOOR
88.1	WINDOW
89	.Bed or couch
90	.Condensation preventers
91	..Locomotive cab
92	..Car
93	.Car
94.1	.Air pump
94.2	..Cooling air conditioner
95	.Automatic air valve
96	.Pane
97	.Sash
98	.Top
99.01	.Bottom
99.1	..Downward deflecting wall
99.2	..Upward deflecting wall
99.3	...Swingable or adjustable angle
99.4	....With adjustable size or flexible side walls
99.5	...Slidably interconnected sections
99.6	..Casing
99.7	..Slidably interconnected sections
99.8	..Shutter, register or grille type
100	..Liquid contact
100.5	.Louver type
101	REGISTERS
	.Floor
102	..Single pivoted valve
103	..Air distributor
104	...With air return vent
105	..Air moistener
	.Wall
106	..Inward pivoted valve
107	..Pivoted slats
108	..Air distributor
109	..Air moisteners
110	.Pivoted slats
111	..Radial
112	..Flush surface
113	..Rotary operator
114	.Boxes, frames and gratings
115.1	HOOD OR OFFTAKE
115.2	.Spray booth
115.3	.Hooded, air controlling, work chamber
115.4	.Movable
116	COMBINED AIR PUMP AND AIR VALVE
117	WIND-MOTOR CONTROLLED VALVE
118	VALVED THIMBLES
119	BACK-DRAFT PREVENTER
120	ROTARY RETARDER
121.1	LOUVER
121.2	.Pivoted
122	PIPE CAPS
	******************************
	CROSS-REFERENCE ART COLLECTION
	******************************
900	VENTILATOR USING SOLAR POWER
	******************************
	DIGESTS
	******************************
DIG 6	Ventilation of roof eaves
DIG 7	Flexible ducts used for carrying air
DIG 8	Magnetic means to hold a damper closed
DIG 9	Black out
DIG 10	Sound deadening
DIG 11	Seat digest

CLASS 99 FOODS AND BEVERAGES: APPARATUS

DECEMBER 1990

275 BEVERAGE
276 .Primary-alcoholic fermentations with subsequent and/or prior operations
277 .Post-primary-alcoholic fermentation operations
277.1 ..Aging, refining and purifying
277.2 ...With agitating means
278 .Hopping, wort-making or ante-primary alcoholic fermentation operations
279 .Infusors
280 ..Automatic control
281 ...Of heat
282 ....And infusive contact
283 ...Of infusive contact
284 ..Convertible
285 ..With signal, indicator or observation means
286 ..With prior handling or treating (e.g., roasting or grinding)
287 ..With agitating or compacting
288 ..With cooking or heating means
289 R ..With infusive material feeding and/or discharging
289 T ....Tape
289 D ....Drum brewer
289 P ....Plate brewer
290 ..Combined
291 ..Plural infusors
292 ..Pressure-vacuum or reflex type
293 ..Steamer or condenser type
294 ...With additional liquid supply means
295 ..Cartridge type
296 ..Invertible type
297 ..Plunger type
298 ..Plural bed or filter type
299 ..With infusive rate or interval control means
300 ..With liquid supply or directing means
301 ...Liquid trap
302 R ...Force feed infusor
302 C .....Centrifugal
302 FB .....Flexible bulb
302 P .....Piston
303 ....Underfeed
304 ...Gravity feed infusor
305 ....With supply regulator
306 ....Drip chamber type
307 ....With force feed supply
308 .....Recycling or repercolating
309 ......Selective supply
310 ......Fountain type
311 ....With overflow
312 ....With distributor
313 .....Fountain type
314 ......With distributor
315 .....With distributor
316 ..Plural compartment
317 ...Inner foraminous receptacle
318 ....Movable or adjustable
319 ......Vertical
320 ......Float
321 ....Textile type
322 ....Suspended
323 ..Infusing receptacles
323.1 .With gas treating means
323.2 ..Carbonic acid and flavoring material
323.3 .Hot beverage means
323.4 CEREAL-PUFFING
323.5 .Corn-popper type
323.6 ..Coin control
323.7 ..Automatic control or time means
323.8 ..With addition of flavoring material
323.9 ..With feeding, conveying or discharging
323.11 ...Separating discharge
323.12 VINEGAR-MAKING
324 COOKING
325 .Automatic control
326 ..Of heat and material
327 ...By time
328 ....And heat responsive means
329 R ...By heat responsive means
329 P .....Power operated carriage
329 RT .....Relative movement, toast and support
330 ..Of cooking fluid
331 ..Of heat or heater
332 ...By time
333 ....And heat responsive means
334 ..Of material
335 ...By time
336 ....Egg boiler or deep fat fryer type
337 .Intercontrol or safety control
338 ..Of heat and material
339 .Diverse cooker types
340 .Convertible
341 .With observation means
342 .With signal, indicator or tester
343 ..Gauge or gauge markings
344 ..Alarm
345 .With basting or solid applying means
346 ..Liquid elevating means
347 ..Condensing or self basting
348 .With stirring
349 .With material pressing means (e.g., ham boilers)
350 ..Band or binder type
351 ..Spring biased
352 .With other treating or handling of material
353 ..Changing form or shape
354 ...Ring or hollow article (e.g., dough-nut)
355 ..Subsequent treating or handling
356 ...Receptacle filling or closing
357 .Combined
358 .Electrode type
359 .Filled receptacle type
360 ..With conveyor
361 ...Successive treating zones or units
362 ....Single endless conveyor
363 ...Variable length of path
364 ...Rollway type
365 ....Helical type
366 ...Valved receptacle inlet or outlet
367 ..Plural treating units or zones
368 ...Fluid interchange
369 ..With hold-down or presser
370 ..Plural treating fluids
371 ..Movable retort or support
372 .Opposed heated mold or surface type (e.g., waffle iron)
373 ..With feeding, conveying and/or discharging
374 ..Plural units
375 ..With drip or waste receptor, director or trimmer
376 ..Detachable or convertible surface
377 ..Movably supported surfaces
378 ..Electric feature
379 ..Adjustable separation
380 ..Movably connected mold sections
381 ...Composite article forming or receiving
382 ...Hollow article forming or receiving
383 ....Edible container
384 ...Elongate article forming or receiving
385 .Slice toaster or broiler (e.g., grid types)
386 ..With conveyer
387 ...With magazine supply
388 ..With marking or uniform coloring
389 ..Opposed heater type
390 ...Movable or adjustable heater
391 ...Movable or adjustable carrier or grid
392 ....Removably guided

	COOKING
	.Slice toaster or broiler (e.g., grid types)
393	..Movably or adjustably supported carrier or grid
394	...Hand-held type
395	...With turning feature
396	...Interchangeable position type
397	...Rotary invertible
398	....Displaceable pivot
399	...Removably guided
400	..With drip or crumb receiving means
401	..With heat distributor, baffle or enclosure
402	..Hanged or separable grids
403	.Boiler or deep fat fryer type
404	..With conveyer
405	...For buoyant material
406	....Fluid current
407	..With feeding and/or discharging
408	..With crumb or sediment segregating or handling
409	..With turning, agitating or inverting
410	..Elevated, steaming or draining position
411	...Unilaterally supported
412	...Bayonet type support
413	...Rim engaging support
414	...Bail or flexibly suspended
415	...Bottom resting support
416	..Plural food support
417	...Superposed or steaming
418	..Bottom resting support
419	.Spit or impaling type
420	..With conveyer
421 R	..Movably or adjustably supported
421 A	....Hand held
421 H	....Horizontal axis
421 HH	.....Horizontally adjustable
421 HV	.....Vertically adjustable
421 M	....Heat actuated motor
421 P	....Planetary
421 TP	....Temperature
421 V	....Non-horizontal axis
422	.Imperforate sheet or griddle type
423	..With feeding, discharging and/or movably supporting
424	...Pivoted section
425	..Drip segregating, receiving or directing
426	.Confining, conforming or molding support
427	..Movably mounted
430	..Mold with dynamic scoring or severing means
431	..Dipping form
432	..Mold for forming sheet material, e.g., pie crust
433	...Including pie rim clamp or guard
439	..Press-couple mold
428	..Shaping core mold
440	..For ball or egg shaped article
441	..For elongate or sausage shaped article
442	..For ring shaped or hollow article
443 R	.With conveyor or movably supported
443 C	...Conveyor
444	.With drip segregating, receiving or directing
445	..Channelled gridiron
446	..Subjacent receptacle or director
447	.With heat distributor
448	.Plural food support
449	.Collapsible, expansible or sectional support
450	.Foraminous support
450.1	EDIBLE LAMINATED PRODUCT MAKING APPARATUS
450.2	.Means forming or reshaping plural sheets or webs
450.3	..Pie machine
450.4	.Means assembling preforms into a sandwich
450.5	..Manually assisted
450.6	.Shell forming means and filling means
450.7	.Means feeding diverse center material
450.8	..Puncturing injector
451	ELECTRIC, RADIANT OR VIBRATIONAL TREATING MEANS
452	MECHANICAL, FLUID OR HEAT TREATMENT OF DAIRY FOOD
453	.With temperature or atmosphere modification
454	..By vacuum
455	..By lowering temperature
456	.With isolation of a watery constituent
457	..Including roller-press and drain
458	..By reticulated member
459	...With prior mechanical treatment (e.g., churning)
460	.By actuated surface
461	..Including plural, relatively movable surfaces
462	...Plural revolving surfaces having parallel axes
463	....Planetating surfaces
464	..Including rolling surface
465	..And reticulated member
466	..Including revolving surface
467	SUBJECTING FOOD TO AN ENCLOSED MODIFIED ATMOSPHERE
468	.Automatic control or time means
469	.With removal of solid foreign matter
470	.With sequential heating and cooling
471	.In gravity-feed enclosure
472	.Vacuum-producing means
473	.Including means to influence movement of gas within enclosure
474	..By forcing gas to circulate
475	...By plural means
476	...Rotary pump
477	..With means to move food
478	...Non-rectilinear movement
479	....Circular movement of food support
480	..By movable damper
481	..By static deflector (e.g., smoke)
482	.With separate support for fume-producing material
483	NON-COOKING HEAT TREATMENT OF FOOD
484	COMBINED
485	MEANS TO TREAT FOOD
486	.Automatic control or time means
487	..Regulating amount of liquid applied to food
488	..Of grain flow
489	..By food
490	...Core-pit detector
491	...To adjust or position tool
492	..By safety means
493	.With condition-indicator
494	.By stuffing or applying particulate material
495	.By isolating a fluid constituent
496	..By separating liquids having distinct characteristics
497	...Separating egg-white from yolk
498	....And removing shell
499	....By receptacle separating one egg-yolk from one egg-white
500	.....Having means to pivotally move receptacle
501	..By a rotary food-entering member
502	...With axial actuation
503	...With a rotating foraminous separator
504	...With coacting food-holder
505	...Manually actuated

	MEANS TO TREAT FOOD
	.By isolating a fluid constituent
506	..By static food-entering member
507	...And means to move food to member
508	...And foraminous separator
509	..With cutting
510	...By comminuting
511	....And a centrifugal extractor
512	.....With handling means
513	....With foraminous separator adjacent comminutor
514	.Recovery of propagative seed
515	.Internal severing by flexable tool or yieldable tool support
516	.By applying fluid
517	..With cooling
518	..With disjoining hull from grain
519	...By projecting grain against surface
520	...Plural hulling zones
521	....Including coacting, relatively rotating imperforated surfaces
522	....Having plural, rotary, multiperforated surfaces
523	...With means to vary spacing between hulling surfaces
524	...And varying flow of grain
525	...Directing gas adjacent hulling zone
526	....Internally and externally of hulling zone
527	....By valved gas passages
528	....With screen to separate products
529	....Interrelated drive means for huller and gas-move
530	.....Gas-mover integral with huller
531	.....Gas-mover coaxially separated from huller
532	..By injecting needle
533	...With means to move needle or work
534	..Particular liquid
535	...Brine
536	...Water
537	.Subdividing into plural products
538	..Separating one internal portion from another
539	...Removing external portion
540	....Skin
541	.....By paring
542	......And removing cylindrical core
543	.......And slicing
544	....Removing cylindrical core
545	.....And slicing
546	....By cutting stem-end or blossom-end
547	...Removing core-pit
548	....By separator moving with moving food (e.g., flying)
549	....And orienting core-pit axis relative to separator
550	.....By irregularity in outer surface of food
551	....By gripping and twisting
552	....Severing and pitting simultaneously
553	.....By arcuate cutter separating pit
554	.....By removing severed portion from immobilized pit
555	.....By forcing pit
556	......Through orifice
557	....By plural impaling means
558	.....By parallel, cooperating cylinders, one resilient, one impaling
559	....By incision-type-punch and die
560	.....And food handling means
561	......Apertured, orbitally traveling, handling means
562	....By pitting severed food
563	.....Severing followed by pitting
564	....By arcuate cutter or gripping means
565	....By forcing flesh or pit through opening
566	.....Ribbed rotating disc or cylinder
567	..Separating one external portion from the remaining food
568	...Removing shell
569	....With sorting
570	.....By fluid
571	....By sudden-impact
572	....By means to set, look and actuate separating means according to shell size
573	.....Including pawl and ratchet lock means
574	....By rotating separating means
575	.....Relative movement between adjacent irregular surfaces
576	.....Disc or saw separating means
577	....By biased breaking member
578	.....Biased away from shell-contacting position
579	....With adjustment of a separating member
580	....With discharge feature
581	....By relatively movable shell contacting means
582	.....With means to restrain food prior to or during shell-breaking
583	.....With means to fasten apparatus to support
584	...Removing skin
585	....By pinching roller
586	....By resilient conduit
587	....By gripper means
588	....By paring tool
589	.....And means to move food past stationary or vibrating tool
590	.....Arcuately shaped tool
591	.....Plural tool means
592	......With sectioning means
593	.....Tool rotates about its own axis
594	.....With means to hold and rotate food
595	......And means to translate food past tool
596	......Cutter has arcuate path around food
597	.......Tool pivots transversely on reciprocating carrier
598	........Tool pivots in plane perpendicular to food axis
599	.......Tool arm pilots on rotatable carrier
600	....Grain hulling
601	.....With means to segregate diverse materials
602	......By hulling means
603	.......Moving perforated surface
604	........With nonperforated hulling surface area
605	.......Cylindrical or conical perforated enclosure
606	........With axially extending nonperforated hulling portion
607	........With additional hulling surface characteristics on enclosure
608	........Enclosing a rotating, yieldably hulling element
609	.....With mechanism to feed or discharge material
610	......Integral with moving hulling member
611	......With discharge control
612	.....By plural hulling zones
613	......Serial zones
614	.......Axially spaces zones
615	........With interior partition
616	.....By endless-belt hulling surface
617	.....By rotating surface
618	......Adjustably or yieldably mounted hulling surface

	MEANS TO TREAT FOOD
	.Subdividing into plural products
	..Separating one external portion from the remaining food
	...Removing skin
	....Grain hulling
	.....By rotating surface
	......Adjustably or yieldably mounted hulling surface
619	.......Including a screw-threaded mounting
620	......Deformable hulling surface
621	......With additional rotating surface
622	......Radial hulling surface
623	....By abrading or resilient separating means
624	.....Two elements move at different speeds
625	......Adjacent separating elements
626	.....Including brush means
627	......With rotating container
628	.....Relatively moving adjacent surfaces
629	.....Including tumbling means
630	......Having a container which rotates, or has internal rotating abrading
631	.......Vertical container with rotating bottom
632	........With agitator or flow control means
633	.........Having irregularly shaped bottom
634	.......With food deflector
635	...Removing stem-end or blossom-end
636	....Including blossom-end
637	....Stemming
638	.....And cluster breaking
639	.....By means adjacent apertured handling means
640	.....By rollers
641	.....By relative motion of irregularly shaped element
642	....By penetrating cutter
643	....With conveyor and positioning means
644	INCLUDING MEANS TO PERMIT INVERSION OF FOOD
645	SHIELD OR SPACING ELEMENT
646 R	MISCELLANEOUS
646 S	..Silos
646 C	..Container
646 LS	..Liquid-solid
	******************************
	DIGESTS
	******************************
DIG 10	Temperature responsive
DIG 11	Conductivity control
DIG 12	Supersonic
DIG 13	Electrical deposition
DIG 14	Induction heating
DIG 15	Pie pans

1 BINDING
2 .Methods
3 ..Compacting and binding
4 .With automatic or material-triggered control
5 .With material winding or folding
6 .With material severing
7 .With material depositing or discharging
8 .Binder applying
9 ..Preformed continuous annular binder
10 ..With precutting of binder to length
11 ..Plural flexible section binder
12 ..Through annular material
13 ..Helically along material
14 ..Indexing material between successive placements
15 ..By rotation of material
16 ..By swing of material gripping jaw
17 ..Binder supported across passageway for material
18 ...With material conveyer
19 R ....With threader crossing material path
19 A ......Needle brake
20 .....Delivering binder to end gripper
21 ......Concurrently delivering to joiner
22 ....Indexing gripper
23 ......Shifting gripper delivers binder to joiner
24 .....Threaders
25 ..Curved guide channel for pushed binder
26 ...Material receiving loop channel
27 ..Orbit traveling binder placer
28 ...Reversing for successive placements
29 .Binder tighteners and joiners
30 ..Sleeve or clamp joining
31 ..Twisters
32 .Binder tighteners
33 R .Joiners
33 PB ...Plastic band
34 .Binder retaining material holders
35 METHODS
36 .With pre-enclosing in textile
37 .With separation from material of liquid expressed
38 .With heating or cooling
39 .With cutting or comminuting
40 .With winding or folding
41 .Forcing through constricted passage
42 .Successive compressions from different directions
43 AUTOMATIC OR MATERIAL TRIGGERED CONTROL
44 .Of insertion of separator between successive material charges
45 .Of material addition, deposition or discharging
46 .Of parallelism of platens
47 .Of roll separation or speed
48 .Of actuating means
49 ..Material presence or position starting
50 ..By pressure applied to material
51 ...With dwell time control
52 ...Reversing
53 INTERRELATED OR SAFETY CONTROLS
54 PORTABLE RECEPTACLE LID APPLYING
55 .With receptacle transfer means
56 .With lid fastening
57 .With gathering of contents
58 .With lid locating means
59 .Receptacle mountable
60 .Upwardly displaced receptacle
61 .Concurrently pressing spaced areas of lid
62 ..Loops or bails receiving receptacle
63 ..Approaching arms embracing receptacle
64 ..Translating projecting arms
65 COMPACTING ENSILAGE WITHIN SILO
66 .With depositing or distributing
67 .Silo wall guide rollers
68 .Vertical center post guided rollers
69 .Tamper suspended within silo
70 R WITH ADDITIONAL TREATMENT OF MATERIAL
70 A ..Crop crushing
71 .Adding materials
72 ..Recycling
73 ..Liquid and/or steam
74 ...To material being fed or conveyed
75 ....Interstage
76 .Winding or folding sheet, web or strand
77 ..With subsequent transfer to repressing press
78 ..With shape retaining means
79 ..With winding mandrel stripper
80 ..Folding zigzag
81 ...Pivoted receiver
82 ..Circularly deposited through eccentric opening
83 ...With presser roll along opening
84 ...With pusher moving to opening
85 ...Receding receiver
86 ..Mandrel and opposed presser roll
87 ..Apron type (embracing belt loop)
88 ..Between opposed belts
89 ..Within group of three or more rolls
90 .Separating materials (vacuumizing here)
91 ..Plural solids
92 .Heating, cooling or drying
93 R ..In press
93 P ....Platen press
93 PB .....Brake lining
93 RP ....Roll press
93 S ....Screw press
94 .Cutting, breaking, piercing or comminuting
95 ..In press material handling train
96 ...In feed train
97 ....Cutter
98 R ..In press
98 A ....Hay bale hole puncher
99 WITH ALARM, SIGNAL, INDICATOR OR TEST MEANS
100 WITH GROUND TRAVERSING WHEELS OR GUIDES
101 WITH CLOTH ABOUT CAKE ENFOLDER
102 COMBINED
103 CONVERTIBLE
104 WITH DRAIN MEANS FOR EXPRESSED LIQUID
105 .Plural liquids (peel oil)
106 .Liquid impelling means
107 .Drain tube inbedded in material
108 ..With piercing point or edge
109 ..Stacked boxes or plates
110 .Drainage through or along pressure surface
111 ..With valve or adjustable flow regulator
112 ..With clearer or cleaner
113 ..Stacked boxes or plates
114 ...Flexibly connected
115 ...Boxes or plates
116 ..Movable surface
117 ...Helix
118 ...Endless conveyer
119 ....Trough forming
120 .....Material enclosing
121 ...Roll
122 ..Textile containing pressure surface
123 ...Pendant bag type
124 ...Textile sustaining hoops
125 ..Fixed abutment or end wall surface
126 .Drainage through or along surface spanning pressure surfaces
127 ..Box, frame, cage or annular wall
128 ...Assembled rings or hoops
129 ...Assembled slats or staves
130 .External strainer
131 .Expressed liquid collector or receptor
132 ..Demountably supporting press

WITH DRAIN MEANS FOR EXPRESSED LIQUID
.Expressed liquid collector or receptor
..Demountably supporting press
133 ...Drinking receptacle type
134 ..With dispenser
135 ...Pouring spout
136 .Guards or shields
137 PLURAL DIVERSE PRESSES
138 .With subsequent press conveying while pressing
139 ..Successive diverse presses each conveying
140 ..Loaded from other type press by transfer
141 ..Loaded by transversely moving platen or packer
142 ...Moving through inlet
143 ...Plural transversely moving platens
144 CONCURRENT PRESSING AND CONVEYING
145 .Helix type compressor
146 ..Right and left helices
147 ..Overload release (yieldable choke)
148 ..With valve or choke adjustment
149 ..Detachable choke
150 ..Helix interengaging abutment
151 .Endless conveyer type
152 ..With conveyer charging or discharging means
153 ..Co-acting presser roll
154 ..With intermediate backup device
155 R .Roll type
155 G ...Glass making
156 ..Non-rotary co-acting press element
157 ..External and internal rolls
158 R ..Intersecting or inclined roll axes
158 C ....Opposed discs
159 ..Vertical roll axes
160 ..With backing roll
161 ..Plural stage or pass
162 R ...Common roll
162 B .....Roll crown control
163 R ....Yieldable
163 A ......Calendar pressure regulation
164 .....Adjustable line of force
165 .....Differentially
166 ....With turn plate or roll
167 ...Chute or conveyer between stages
168 ...Roll adjustment
169 ...Yieldable
170 ....Fluid pressure
171 ....Spring
172 ...Roll drive
173 ..With material handling or guiding
174 ...Roll strippers
175 ...Roll bearing guards
176 ..Roll pairs
177 .Moving compression chamber
178 ..Platen or piston type
179 .Plunger and casing type
180 ..With successive charge separating means
181 ...Plunger carried separator supply
182 ...Separator series on endless belt
183 ...Pusher inserted
184 ...Separator structure
185 ..Plural compression chambers
186 ...Aligned oppositely conveying
187 ..With material rebound restrainer or tucker
188 R ..With feeding or discharge handling
188 BT ....Bale thrower
189 ...Conveying to or through inlet
190 ..With inlet closure
191 ..Adjustable choke
192 ...Overload relieving (yieldable)
193 PLURAL PRESSES
194 .Stacked boxes or plates
195 ..Plural stacks
196 ..With charging and/or discharging
197 ...Fluent supply
198 ...Cake loosening or ejecting
199 ..With positioning or supporting means
200 ...Link
202 ..Hinged plates
203 ..Box or pot type
204 ...With compression lock
205 ...With openings (e.g., for removing or loosening cake)
206 ...Separable sections
207 .With material transfer from press to press
208 .Concurrently actuated
209 ..Alternately compressing
210 ROLL AND PLATEN
211 WITH FLEXIBLE OR DEFORMABLE PRESSURE SURFACE
212 .Circumferentially tightened loop
213 INTERFITTING CUPS - FRUIT JUICER TYPE
214 RECIPROCATING PRESS CONSTRUCTION
215 .With material depositing means
216 ..Feeder controlled plunger actuation
217 ..Box traversing spreader
218 .With material displacing means (e.g., ejector)
219 .With platen position or compression lock
220 .With material rebound restrainer
221 .Plural or indexing material supports or receptacles
222 ..Belt
223 ..Rotary
224 ..Slidable
225 ..Partitioned or compartmented box
226 .With transversely displaceable piston or movable platen
227 ..Portable receptacle mountable
228 ..Pivoted or detachable beam
229 R .With transversely displaceable box, receptacle or stationary platen
229 A ...Compressing in separable container
230 .Central strain rod type
231 .C-frame type
232 .Plural movable platens on intersecting paths
233 .Oscillatory or hinged platen or piston
234 ..Plier type
235 ...With impaling support for material
236 ..Parallel spaced pairs
237 .Plural movable platens on side by side paths
238 .Combined reciprocating and rotating piston or platen
239 ..Piston advanced by box rotation
240 .Box and piston type
241 ..Piston carried box frame scrapers
242 ..Adjustable size
243 ..Plier type (i.e., plural handles)
244 ..Plural opposing pistons
245 ..Box guided piston
246 ..Movable or removable box section
247 ...Separable box head and box frame
248 ....Insert of false head
249 ....With guided motion
250 .....Pivoted
251 .....Axially slidable
252 ...Separable box frame sections
253 ....Piston operator actuated frame section
254 ....Counterbalanced
255 ....Hinged
256 .Platen tripped stop or reverse
257 .Range of movement adjustment
258 R .Platen level compensating
258 A ...Parallel pressure surfaces
259 .With plunger return cushioning

	RECIPROCATING PRESS CONSTRUCTION
260	.With actuation releasing for rebounding or biased return
261	..Over center releasing
262	..Disengaging rack and pinion
263	..Interruption in rotated camming surface
264	.Opposed platens both actuated
265	.Spring or weight
266	..Return bias
267	...Opposing flexible element actuator
268	..Interposed in actuating mechanism
269 R	.Fluid pressure actuation
269 A	...Inflatable bag to push platen
269 B	...Ram type intensifier
270	..Combined with mechanical actuation
271	...Mechanical force mutiplier
272	....Toggle
273	.Speed or power variable by power path selection
274	.Intermittent actuator
275	..Plural
276	...Acting at opposite ends of cross bar on movable platen
277	...Cross connected alternately acting
278	.Flexible element actuator
279	..Varying radius windlass
280	.With mechanical force multiplier
281	..Transversely forced linkage joint (single toggles here)
282	...Shaft turned cam or crank and pitman
283	...Lever in linkage
284	....Lever carried toothed sector
285	....Plural
286	...Plural toggle joints
287	....Screw and nut between joints
288	..Rack and pinion
289	..Screw and nut
290	...Plural screws
291	..Cam or tapering wedge
292	...Rotary or swinging
293	..Fixed fulcrum lever
294	..Plural oppositely moving struts
295	PLATENS OR PRESSURE SURFACES
296	.Flexibly connected opposed
297	.Porous mats
298	CLOTHS FROM CAKE STRIPPERS
299	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
901	SCRAP AUTO BODY CRUSHERS
902	CAN CRUSHERS
903	PELLETERS
904	.Screw
905	.Inner roll
906	.Reciprocating
907	.Rotary
908	.Series rolls
909	.Adjustable die openings
910	MEAT
911	JET OR EXPLOSIVE
912	BINDER CONTAINERS
913	TRUSS PRESSES
914	SCRAP PAPER
915	FIXED UPPER RAM, LOWER MOVABLE RECEPTACLE
916	COIL TIGHTENER AND BINDER
917	MAGNETIC
918	BOLSTER AND DIE

CLASS 101 PRINTING

2	PRINTING AND SORTING
3.1	EMBOSSING OR PENETRATING
4	.Special-article machines
5	..Rolling contact
6	...Rotary
7	...Rotating object
8	...Hot die
9	..Hot die
10	...Oscillating
11	...Feeding or delivering
12	.Matrix material
13	..Selective machines
14	...Drum series
15	...Multiple-character bar
16	..Die members
17	..Processes
18	.Selective machines
19	..Piercing
20	...Oscillating
21	..Hot die
22	.Rolling-contact machines
23	..Rotary
24	...Piercing
25	...Hot die
26	.Piercing machines
27	.Hot die machines
28	.Die members
29	..Selective
30	..Piercing
31	..Hot
31.1	.Seal presses
32	.Processes
33	TRANSFERRING PREPARATORY DESIGNS
34	.Processes
35	SPECIAL ARTICLE MACHINES
36	.Rotary
37	..Feeding or delivering
38.1	.Rotating object
39	..Traveling
40	...Feeding or delivering
40.1	..Feeding or delivering
41	.Bed and platen
42	..Selective
43	...Feeding or delivering
44	..Feeding or delivering
45	SELECTIVE OR PROGRESSIVE
46	.Typewriter feature
47	.Addressing machines
48	..Stencil
49	...Rotary machines with roller inker and fountain
50	...Stencil web
51	...Traveling roller inker with fountain
52	..Rotary
53	...Feeding or delivering
54	....Plate chain feed
55	..Bed-and-cylinder
56	...Traveling cylinder
57	..Bed and platen
58	...Article grouper
59	...Drum series
60	...Interconnected plates
61	....Oscillating machines
62	...Rotary plate carrier
63	...Shifting chase
64	....Oscillating machine
65	...Oscillating
66	.Ticket machines
67	..Duplicating
68	...Bed and platen
69	..Bed and platen
70	...Numbering attachment
71	.Mail-box machines
72	.Numbering
73	..Measuring machines
74	...Rotary
75	....Drum series
76	..Rotary machines
77	...Planetary drum series
78	..Bed-and-platen machines
79	...Drum series
80	....Oscillating machines
81	.....Roller and plate inker
82	...Roller and plate inker
83	...Drum series and pad inkers
84	..Printing members
85	...Drum series
86	....Planetary
87	.....Adjustable
88	....Contact actuated
89	.....Yielding drums
90	.Duplicating machines
91	.Rotary machines
92	..Web
93	.Bed and platen machines
93.01	..Methods
93.02	..With means to prevent double impressions (rebound preventers)
93.03	..With means to vary intensity of print impression
93.04	..Segmented print character printers (e.g., dots, etc.)
93.05	...Wire
93.06	..With justifying
93.07	..Printing and perforating or severing
93.08	..Simultaneous plural line printing
93.09	..Hammer individually strikes print characters in adjacent print columns (e.g., sharing)
93.1	..Fluid actuated or controlled print means
93.11	..Plural separate print mechanisms
93.12	...Unlike
93.13	..With movable endless print carrying belt
93.14	...Moving along print line
93.15	..Print or hammer unit moves along print line
93.16	...Hammer unit moves along print line
93.17	...Rotatable print unit
93.18	..With printing type carried on rotatable member
93.19	...Single disk
93.2	...With diverse type print character carrier
93.21	...Rotating axis parallel to print line
93.22	....Slows to print
93.23	....Having skewed or helically spaced print characters
93.24	....Rotatable member movable to platen
93.25	.....Arcuately moving
93.26	....With relatively movable print type
93.27	....With plural record printing
93.28	....Hammer member movable to print member
93.29	.....Including electromagnetically actuated means
93.3	......Rotary member moves hammer to engage print characters
93.31	.......With intermediate force transmitting member
93.32	......With intermediate force transmitting member
93.33	.......With spring
93.34	......With spring
93.35	.....With mechanically actuated platen or hammer
93.36	......Arcuately moving
93.37	..With printing type carried on reciprocating member
93.38	...Member having plural print type sets
93.39	....With separate printing at each set
93.4	.....Plural sets on same member face
93.41	...Platen member movable to type carrier
93.42	....Electromagnetically actuated

	SELECTIVE OR PROGRESSIVE
	.Bed and platen machines
	..With printing type carried on reciprocating member
93.43	...Type moved to platen electromagnetically
93.44	...Type member moves in arcuate path
93.45	...Having relatively movable type
93.46	....Member position controlled electromagnetically
93.47	..With print character carrying member movable to platen
93.48	..Print hammer assembly per se
94	..Oscillating
95	...Drum series
96	....Ribbon inker
97	....Pad inker
98	...Pad inker
99	..Drum series
100	...Ribbon inker
101	...Pad inker
102	..Ribbon inker
103	.Printing members and inkers
104	..Tumbler bed and pad inker
105	...Endless type band
106	..Drum series
107	...Ribbon inker
108	...Pad inker
109	.Printing members
110	..Drum series
111	..Endless band
112	..Stencil plate
113	DUPLICATING MACHINES
114	STENCILING
115	.Multicolor
116	.Rotary machines
117	..Cutting and feeding or delivering
118	..Feeding or delivering
119	..Internal inker
120	...Contact member
121	.Stencil-web machines
122	..Endless band
123	.Traveling-inker machines
124	.Stationary-inker machines
125	.Stencil and pad inker
126	.Stencil and work support
127	.Stencils
127.1	..Mounts, holders and extensions
128	...Settable units
128.1	...Attaching
128.21	..Laminated and/or plural sheets and/or coated base and manufacture
128.4	..Manufacture
129	.Processes
130	PLANOGRAPHIC
131	.Copying apparatus
131.5	..Sheet flexing
132	..Rotary
132.5	...With dampener
133	..Bed-and-cylinder
134	...Multicolor ink block
134.5	..Bed and platen
135	.Multicolor
136	..Rotary machines
137	...Transfer with interrupter
138	...Web
139	....Interrupter
140	...Interrupter
141	.Rotary machines
142	..Transfer
143	...Web with interrupter
144	...Interrupter
145	..Interrupter
146	.Bed-and-cylinder machines
147	.Dampeners
148	..Roller fountain
450.1	.Processes of lithographic printing
451	..With application of ink repellent or ink receptive liquid
452	...Non-aqueous
453	.Lithographic printing plates
454	..Including metal support having printing or non-printing surface
455	...Surface contains silica or glass
456	...Surface contains light reacted material
457	...Surface contains resin
458	...Surface contains metal
459	....Aluminum, copper or zinc
460	..Including paper or cellulosic support having printing or non-printing surface
461	...Surface contains protein or derivative
462	...Surface contains resin
463.1	.Lithographic plate making, and processes of making or using copy elements, and elements per se
464	..Films to film inhibition
465	..Making plate surface portions ink repellent or ink receptive
466	...Ink receptive
467	....By use of radiant energy or heat
468	..Copying
469	...Including color formation or enhancement
470	...Utilizing radiant energy or heat
471	....Light
472	...Utilizing solvent
473	...Elements per se
150	INTAGLIO
151	.Multicolor
152	..Rotary machines
153	.Rotary
154	..Transfer with scraper wiper
155	..Wiper
156	...Web
157	...Scraper
158	.Bed-and-cylinder machines
159	..Circulating bed
160	...Roller inker with web wiper
161	..Roller inker with wiper
162	...Web wiper
163	.Bed and platen
164	..Reciprocating bed with roller inker and web wiper
165	..Roller inker with web wiper
166	..Web wiper
167	.Wipers
168	..Web
169	..Scraper
170	.Processes
171	MULTICOLOR
172	.Yarn
173	.Rotary and bed-and-cylinder machines
174	.Rotary machines
175	..Single impression
176	...Web
177	..Transfer
178	..Web
179	...Perfecting
180	....Multiple couple
181	...Multiple couple
182	...Interrupter
183	..Multiple couple
184	...Interrupter
185	..Interrupter
186	.Bed-and-cylinder machines
187	..Single impression
188	..Lateral shift
189	..Multiple cylinder
190	...Perfecting
191	...Throw-off
192	....Interrupter
193	.Bed-and-platen machines

MULTICOLOR
.Bed-and-platen machines
194 ..Single impression
195 ...Oscillating machines with roller and plate inker
196 ..Web
197 ...Oscillating bed
198 ...Reciprocating bed
199 ....Roller inker
200 ..Oscillating
201 .Rising-and-falling type
202 .Inkers
203.1 ..Roller and plate
204 ...Fountain
204.1 ...Multi-disc plate
205 ..Roller
206 ...Rotary machine
207 ....Fountain
208 ...Fountain
209 ...Interrupter
210 ..Fountains
211 .Processes
212 ROLLING CONTACT MACHINES
213 .Rotary printer and web roll with roller inker
214 .Rotary and bed-and-cylinder
215 ..Transfer
216 .Rotary
217 ..Transfer
218 ...Interrupter
219 ..Web
220 ...Perfecting
221 ....Multiple impression
222 .....Reversing
223 ....Reversing
224 ....Cutting and feeding or delivering
225 ....Feeding or delivering
226 ...Cutting
227 ....Feeding or delivering
228 ...Feeding or delivering
229 ..Perfecting
230 ...Reversing
231 ...Feeding or delivering
232 ..Feeding or delivering
233 ...Article-controlled machines
234 ....Tripped printing member
235 .....Single revolution
236 ......Stacking
237 .....Stacking
238 ....Stacking
239 .....Article-timing stop
240 ...Stacking
241 ....Article-timing stop
242 ....Article-timing stop
243 ...Ribbon inker
244 ..Ribbon inker
245 ..Single revolution
246 ..Gripper cylinder
247 ..Interrupter
248 ..Cylinder-registering mechanisms
249 ..Staggered blanket
250 .Bed-and-cylinder
251 ..Transfer
252 ...Traveling cylinder
253 ..Web
254 ...Perfecting
255 ....Circulating bed
256 ....Traveling cylinder
257 .....Reversing
258 ....Oscillating cylinder
259 ...Circulating bed
260 ...Traveling cylinder
261 ...Oscillating cylinder
262 ..Perfecting
263 ...Circulating bed
264 ...Traveling cylinder
265 ...Stop cylinder
266 ....Oscillating cylinder with feeding or delivering
267 ...Feeding or delivering by additional revolution
268 ..Circulating bed
269 ..Traveling cylinder
270 ...Circulating
271 ....Feeding or delivering with ribbon inker
272 ...Feeding or delivering
273 ....Ribbon inker
274 ...Ribbon inker
275 ..Stop cylinder
276 ...Feeding or delivering
277 ..Oscillating cylinder
278 ...Feeding or delivering
279 ..Feeding or delivering
280 ...Additional revolution
281 ..Ribbon inker
282 ..Bed-and-cylinder movements only
283 ...Throw-off
284 ....Interrupter
285 ...Interrupter
286 ...Cylinder-registering mechanisms
287 BED-AND-PLATEN MACHINES
288 .Web
289 ..Perfecting
290 ...Reciprocating bed with roller inker
291 ..Oscillating bed
292 ..Reciprocating bed
293 ...Roller and plate inker
294 ....Circulating roller
295 ...Roller inker
296 .Perfecting
297 .Oscillating
298 ..Oscillating bed
299 ...Interrupter
300 ....Roller and plate inker
301 ...Inker
302 ....Roller and plate
303 .....Traveling plate
304 .....Circulating roller
305 ....Roller
306 ..Interrupter
307 ...Roller plate inker
308 ....Circulating roller
309 ...Roller inker
310 ..Inker
311 ...Roller and plate
312 ....Traveling plate
313 ....Circulating roller
314 ...Roller
315 ....Fountain
316 .Reciprocating bed
317 ..Interrupter
318 ..Inker
319 ...Roller and plate
320 ...Roller
321 ....Fountain
322 .Interrupter
323 ..Roller inker
324 .Inker
325 ..Roller and plate
326 ..Roller with fountain
327 PRINTING MEMBERS AND INKERS
328 .Rolling-contact printing member
329 ..Roller inker
330 ...Fountain
331 ....Roller fountain
332 .Ribbon inker
333 .Pad inker
334 ..Tumbler bed
335 INKERS
336 .Ribbon
337 .Roller and plate
338 ..Bed-and-platen machines
339 ...Traveling plate
340 ...Fountain

	INKERS
	.Roller and plate
	..Bed-and-platen machines
	...Fountain
341	....Interrupter
342	...Interrupter
343	..Traveling plate
344	...Fountain
345	....Interrupter
346	...Interrupter
347	..Fountain
348	.Roller
349	..Rotary machine
350	...Fountain
351	....Interrupter
352	...Interrupter
353	..Bed-and-cylinder machine
354	...Traveling roller
355	....Fountain
356	...Fountain
357	....Interrupter
358	...Interrupter
359	..Bed-and-platen machine
360	...Fountain
361	....Interrupter
362	...Interrupter
363	..Fountain
364	.Fountains
365	..Multiple-point control
366	..Force discharge
367	..Roller-fountain
368	PRINTING MEMBERS
369	.Addressing plates
370	..Type groove
371	.Mail-cancelling stamps
372	.Special-designs forms
373	..Arrangeable face
374	.Late insertion
375	.Rolling contact
376	..Yielding surface
377	..Type groove
378	..Plate securing means
379	.Yielding surface
380	..Type groove
381	.Type groove
382.1	.Plate mountings
383	..Securing means
384	...Modified plate
385	...Detachable hooks
386	....Groove
387	.....Diagonal
388	......Shifting means
389	....Block
389.1	..Magnetic or vacuum means to hold printing plates
390	.Chase-securing means
391	.Chases
392	..Variable-size frame
393	..Adjustable bars
394	..Locking means
395	.Plates
396	.Line bars
397	..Special-design face
398	.Types
399	..Special-design face
400	.Rules and borders
401	.Surfaces
401.1	.Blanks and processes
401.2	..Types or matrices
401.3	...Making ready
401.4	..Type bars
401.5	.Type or matrix forming machines
401.6	..Type bar
402	.Fillers
403	..Line spacers
404	..Binding
405	.Stamp handles
406	..Flexible connection

407.1	WORK SUPPORTING MEMBERS
408	.Grippers
409	..Cylinders
410	...Shiftable
411	...Gripper-attached tumble
412	...No operating mechanism
413	.Tympan gauges
414	..Automatic movement
415	..Surface secured
474	.Work held on flat surface
475	.Work in rolling contact with printing plate
415.1	FLEXIBLE-SHEET-SECURING DEVICES
416.1	ANTISMUT DEVICE
417	.Web
418	..Cylinder-carried reels
419	.Sheet
420	.Contact preventers
421	..Friskets
422	.Ink repellent
423	.Cleaners
424	..With cleaning composition
424.1	.Drying with fluid (air) or by heating
424.2	.Anti-offset material application
425	CLEANING ATTACHMENTS
476	PRINTING ON STACKED ARTICLES
477	PRINT PLATE FEEDING OR DELIVERING
478	ERASABLE PLATE
479	ASSEMBLY OR DISASSEMBLY FEATURES
480	PRESS PART OR ATTACHMENT
481	LAYOUT OR REGISTRATION
482	TAB
483	PROCESSES
484	.Condition responsive
485	.Position or alignment
486	..Of print means
487	.With heating or cooling
488	..Of print medium
489	.Electric or magnetic transfer
490	.Plural impressions on single article
491	.Specific ink
492	.Transfer or offset
493	.Resilient surface
494	MISCELLANEOUS

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DIGESTS

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DIG 29	Printing involving a color-forming phenomenon
DIG 30	Special article printing with article controlled operation
DIG 31	Devices for applying metal leaf employing hot dies
DIG 32	Means to vary the time of contact of one or more rollers in an ink train
DIG 33	Ink transfer employing one or more belts
DIG 34	Means to agitate ink in a reservoir
DIG 35	Rollers and track therefore in printing presses
DIG 36	Means for registering or alignment of print plates on print press structure
DIG 37	Printing employing electrostatic force
DIG 38	Means for axially reciprocating inking rollers
DIG 39	Printing on cylinder of revolution
DIG 40	Means to print on golf balls
DIG 41	Means for braking press cylinders
DIG 42	Means for tensioning webs
DIG 43	Machines printing by both intaglio and another type of printing means
DIG 44	Coin controlled printing machines
DIG 45	Sensor for ink or dampening fluid thickness or density
DIG 46	Printing operation controlled by code indicia on printing plate or substate
DIG 47	Automatic or remote control of metering blade position

DIG 48 Endless printing belt for other than selective or progressive printing
DIG 49 Convertible printing press (e.g., lithographic to letter press)

CLASS 102 AMMUNITION AND EXPLOSIVES

301 BLASTING
302 .Terrain clearance
303 .Mat or deflector
304 .Blasting plug including an opening for a fuse, fuse ignitor, or explosive
305 .Detonation wave modifying
306 ..Shaped charge or charge with detonation wave cavity modifier
307 ...Linear or curvilinear cavity
308 ...Tandem charge
309 ...Having a barrier
310 ...Plural charges
311 .Patterned blasting
312 ..Borehole arrangement
313 .Borehole loading
314 .Contained blasting charge
315 ..Having or receiving separated explosive constituents
316 ..With flame or heat suppressant
317 ..Similar contained charges joined end to end
318 ..Booster or charge with booster detonator
319 ..With well-anchoring means, wall-contacting guides, or buffers
320 ..Having plural charges
321 ..With support means
322 ..With primer or ignitor
323 ..Having a rupturable or expandable casing
324 ..Having a flexible tube or bag container
325 .Contained pressurized fluid blasting charge
326 ..Fluid generated within container
327 ..Fluid heated within container
328 ..Contained fluid exit seal controlled by fluid pressure
329 ...Valve-type seal
330 ....Automatically operated
331 .Blasting charge case
332 .Blasting charge
333 .Plug
334 SMOKE GENERATING
335 PYROTECHNICS
336 .Flare
337 ..With parachute
338 ...Multiple flares
339 ...Plural or vane-type parachutes or means to restrain complete initial parachute opening
340 ...With means to eject parachute or flare from casing
341 ..Marine type
342 ..With means to eject flare from casing
343 ..With support means
344 ...Spike form
345 ..With plural, successively ignited flares
346 .Gun-type cartridge
347 .Rocket
348 ..With vane, wings, parachute, or balloon
349 ..With support means
350 ..With means to rotate by gas discharge
351 ..With means to eject object from casing
352 ..Including plural, successively ignited charges
353 .Toy torpedoe
354 .With parachute or balloon
355 .Simulation
356 .Combined
357 .With means to eject an object from a casing
358 .With support means
359 ..Wheel, rotor, or whirler
360 .With plural, successively ignited charges
361 .Firecracker
362 HAVING GROUND PROPULSION MEANS
363 FUEL AIR EXPLOSIVE
364 INCENDIARY
365 .Liquid or jelly
366 OIL DISTRIBUTING
367 GAS OR MIST DISPERSING
368 .Grenade
369 .Drop bomb
370 .Cartridge or projectile
371 BOMB LANCE
372 HAVING RADIALLY DIRECTED PROPELLING HOLES
373 .Including external propellent charge
374 HAVING REACTION MOTOR
375 .Pneumatically self-propelled type
376 .With cartridge means
377 .Having separation means
378 ..Explosive
379 .Having warhead fuse or arming means
380 .Having propellent charge ignitor means
381 .Having pressurization or variable control means for the propellant
382 DROP BOMBS
383 .With laterally directed barrels
384 .With direction controlling means
385 .Fin stabilizer only
386 .With drop-retarding means
387 ..Parachute
388 ..Vane or rotor
389 .Fragmentation
390 .Marine type
391 ..Depth regulation
392 ...Hydrostatic
393 .Cluster type
394 .Rebounding or multiple bursting charges
395 .Practice
396 .Igniting means
397 ..With target contact anticipator
398 NONRECOCHETING PROJECTILE
399 MARINE-TYPE PROJECTILE
400 WITH EXTENDABLE ARMS
401 MINES
402 .Counter measure
403 ..By explosion
404 .Pop-up type
405 .Aerial type
406 .Marine type
407 ..Practice (e.g., drill)
408 ..Flooder means
409 ..Field or group
410 ...With manipulating means
411 ...Laying, anchoring, or manipulating
412 ...Depth regulation
413 ....Anchor cable length
414 ....Hydrostatic pressure
415 ...Antisweep anchorage
416 ..Igniting means
417 ...Magnetic
418 ...Wave responsive
419 ...Electrical
420 ....Including arming means
421 ....Contact type
422 ...Contact type
423 ....Extending firing means
424 .Igniting means
425 ..With position sensing means
426 ..Automatic deactivation or self-destruction
427 ..Electrical, magnetic, wave, or radiant energy actuated
428 ..Pressure actuated
429 ...Spring biased
430 CARTRIDGES
431 .Combustilbe, destructible, or caseless
432 ..Expendable cartridge
433 ..Telescoping powder charge
434 .Telescoping powder charge

CARTRIDGES
435 .Wear reducing additive for barrel
436 .Noncircular projectile or cartridge
437 .Recoilless
438 .Multiple projectiles
439 .Projectile structure
440 .Having liquid/gas propellent means
441 .With projectile and explosive cap
442 .With bore cleaning means
443 .Having divided propelling charge
444 .Practice projectile type
445 ..Mortar
446 ..Cartridge adapter
447 ..Reduced charge
448 .Shot
449 ..Shot container
450 ...Collapsible wad
451 ....Integral wad
452 ...Having integral closure means
453 ...Having integral wad
454 ...Including divided shot charge
455 ...Including filler means in the shot area
456 ...With additional means to keep container closed
457 ..With control of shot spread
458 ..With tracer means
459 ..Including coated shot
460 ..Having shot of different size or shape
461 ..Collapsible wad
462 ..Closure means
463 ...Integral
464 .Case
465 ..Nonmetallic
466 ...Plastic cases
467 ....With metal base or reinforcement
468 ..Iron case
469 ..Breech end structure
470 ...With primer means
471 ....Rim fired
472 ....Electric
473 SHELLS
474 .Continuous rod warhead
475 .Focused or directed detonation
476 ..Shaped charge
477 .With means to form bursting charge after projection
478 .Having divided bursting charge
479 .With bursting charge cushioning means
480 .With laterally directed barrels
481 .With safety means
482 .Grenade
483 ..With gun or other projector engaging or cooperating means
484 ...With bullet passage through grenade
485 ...With bullet stopping means
486 ..With throwing handle, handgrip, or strand
487 ..With igniting means
488 ...Impact-operated
489 .With secondary shells
490 .With range increasing means
491 .Shrapnel
492 ..Focused fragmentation
493 ..Structurally weakened casing
494 ..Multiple fragments
495 ...Casing
496 ...Embedded
497 ....With explosive
498 .Practice
499 .With igniting means
500 ..Axially movable impacting means
501 PROJECTILES
502 .Nonlethal or deterrent
503 .Tubular
504 .Line carrying or filamentary material distributing
505 ..Chaff dispensing
506 .Fragmenting
507 .Dumdum or mushrooming
508 ..With cavity
509 ...Hollow
510 ....With expanding member
511 .Lubricating
512 .Narcotizing
513 .Target marking
514 .Having jacket
515 ..Nonmetallic
516 ..Composite
517 .Composite
518 ..Hardened core within a chamber
519 ..With separate hardened nose
520 ..Sabot or carrier
521 ...Subcaliber
522 ....Base enclosed
523 .....With projectile exposed to propellent gas
524 ..Rifling or driving means (e.g., band)
525 ...Wedge expanded
526 ...Including annular member
527 ....Nonmetallic
528 ...Band protector
529 .Practice or cleaning
530 JACKETED OR CARTRIDGE GAS GENERATOR
531 .For gas-powered tools or means
532 WADS
200 IGNITING DEVICES AND SYSTEMS
201 .Laser or light initiated
202 .Propellant ignitors
202.1 .Accidental fuse ignition prevention means
202.2 ..Having electromagnetic field effects diminishing or elimination means
202.3 ..Fuse device resistive shunt
202.4 ...Voltage responsive variable resistance shunt (e.g., semiconductor shunts)
202.5 .Electrical primer or ignitor
202.6 ..Having an additional ignitor or water destructible fuse
202.7 ..Having an exploding bridgewire
202.8 ..Having a spark gap or conductive composition or charge
202.9 ..With electric terminals
202.11 ..Having an electric matchhead
202.12 ..Assemblies (e.g., packaging)
202.13 ..Having a powder train time delay
202.14 ..With housing
204 .Percussion primers or ignitors
205 .Heat, friction, or chemical primers or ignitors
206 .Ignition or detonation circuit
207 ..Including activated generator
208 ...Turbine
209 ...Magnetic
210 ...Piezoelectric crystal
211 ..Proximity fuze
212 ...Magnetic
213 ...Light or infrared
214 ...Radio wave
215 ..Including logic means
216 ..Including impact or inertia switch
217 ..Plural sequentially fired ignitors or detonators
218 ..Electronic switch discharges capacitor
219 ...Ionized gas, i.e., glow tube or thyratron
220 ...Silicon controlled rectifier
221 .Arming devices
222 ..Blocking or interrupting type
223 ...Fluid pressure operated
224 ....Fluidic device
225 ....Rotating vane
226 .....Rotor or slide release
227 .....Impacting device release
228 ....With or including a timing device

	IGNITING DEVICES AND SYSTEMS
	.Arming devices
	..Blocking or interrupting type
	...Fluid pressure operated
229	....Rotor or slide
230	....Impacting device release
231	...Centrifugal and setback operated
232	....With or including a timing device
233	.....With setback latch
234	....Impacting device release
235	....Rotor or slide with setback release
236	.....Firing pin is latch
237	...Centrifugal operated
238	....With or including a timing device
239	....Latch for impacting device
240	.....Spiral band
241	.....Pivoted weight
242	.....Spring biased piston
243	.....Expanding weight
244	....Rotor or slide
245	.....Centrifugally released latch
246	.....Deceleration released latch
247	...Inertia operated
248	....With or including a timing device
249	.....With setback latch
250	.....Fluent material
251	....Rotor or slide with setback release
252	....Impacting device latch
253	.....Ball and detent
254	...Slide or rotor
255	....Timing device operated
256	....Spring operated
257	...Timer operated impacting device latch
258	...Externally released latch
259	....Bore riding pin
260	....Manually released
261	.....To actuate impacting means
262	..Switch
263	...Vane or fluid pressure operated
264	...Timing device operated
265	.Multiple mode fuzes
266	..Impact and time delay
267	...Spin decay
268	...Mechanical time delay
269	...Power train delay
270	..Mode selecting means
271	...Delay or impact
272	.Impacting devices
273	..Graze or multiangle
274	..Spring driven with latch
275	..With frangible restraint
275.1	.Fuse cord (e.g., blasting cord)
275.2	..With one-way connector or arrangement
275.3	..With combustible time-delay cord connection means
275.4	..To or from connector having booster charge
275.5	..With explosive charge
275.6	..With igniting means
275.7	..With cord holding device to couple cords
275.8	..Detonator cord
275.9	.Fuse
275.11	.Initiating devices
275.12	.Holders for fuse or fuse cord to blasting cartridge, igniting device, or detonator
276	.Time controlled
277	..With fluent material
277.1	..Munition powder train
277.2	...Train length selection means
281	EXPLOSIVE CAPS FOR TOY GUNS
282	PROPELLENT CHEMICAL CHARGE CONTAINER
283	POWDER FORM
284	.Spiral type
285	.Composite type
286	..Having different burning rates
287	...Rocket motor type
288	..Powder grain shape formed of fixed shape segments
289	.Having embedded reinforcing or burning control means
290	.Having burning inhibiting means
291	.Rocket propellent grain
292	.Powder grain
293	MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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700	COMBUSTILBE CARTRIDGE
701	CHARGE WAVE FORMING
702	COMPRESSION IGNITION
703	FLECHETTE
704	COOLANTS
705	SEPARATED EXPLOSIVE CONSTITUENTS

CLASS 104 RAILWAYS

2	TRACK LAYERS
3	.Built-up sections
4	.Portable shifter
5	.Distributers
6	..Transverse tie placer
7.1	.Track raising car
7.2	..With means to transversely shift track (i.e., aligning)
7.3	..Under-track ballast sled or plow
8	.Sluer
9	.Tie replacer
10	.Tamper
11	..Pneumatic injector
12	..Car mounted
13	..Hand tools
14	...Pneumatic
15	.Joint welders
16	.Tie platers
17.1	.Track rail mounted spike driver
17.2	.Trail rail mounted rail anchor applicator
18	MOVING TRAIN
19	.Safety lander
20	.Passenger transfer
21	..Revolving terminal
22	BALLOON
23.1	FLUID SUPPORTED CAR OR SIMULATED AERIAL VEHICLE
23.2	.Car supported by fluid current pushing against surface
24	SAILING DEVICES
25	ENDLESS TRAIN
26.1	CAR YARD
26.2	.Track brake
27	TERMINALS AND STATIONS
28	.Passenger
29	.Freight
30	.Platforms
31	..Shifting
32.1	TRUCK CHANGER
33	.Wheel-gauge changers
34	VEHICLE BATTERY REPLACER
35	TURNTABLES
36	.Actuators
37	..Fluid pressure
38	..Electric control
39	..Traction cable
40	..Vehicle operated
41	...Drive wheel
42	...Gravity
43	..Traction wheel
44	.Automobile
45	.Portable
46	.Bearings and pivots
47	.Locks
48	TRANSFER TABLES
49	.Swinging
50	.Operating mechanism
51	LOCOMOTIVE SHED FIXTURES
52	.Smoke jacks
53	AMUSEMENT
54	.Gap jumpers
55	.Loop
56	.Helical
57	..Rotating
58	.Moving-wave track
59	.Drifting tub
60	.Racing
61	.Horse simulation
62	.Physical training
63	.Tortuous alinement
64	..Horizontal zigzag
65	...Exchanging gears
66	...Chain drive
67	.Switchback
68	.Bowl, cylinder or globe
69	.Chutes
70	..Water dive
71	.Submarines
72	.Splasher
73	.Canals
74	.Rotary car on truck
75	..Vertical axis
76	..Horizontal axis
77	.Car in wheel
78	..Traveling
79	.Seesaw track
80	.Seesaw car drive
81	.Swing car drive
82	.Passenger jumper
83	.Illusion vehicles
84	.Optical illusion
85	.Physical illusion
86	.Hydraulic effects
87	CABLE AND RIGID COMBINED
88	SELECTIVE DELIVERY
89	SUSPENDED
90	.Ferry
91	.Track systems
92	.Swing boom track
93	.Single-rail type
94	.Double inner rail
95	.Double outer rail
96	TROLLEY TRANSFER
97	.Beef-jack type
98	.Overhead crane
99	.Turntable type
100	.Horizontal end pivot
101	.Longitudinal pivot
102	.Sliding shift
103	.Swing stub
104	.Split point
105	.Rigid frog
106	TROLLEY RAILS
107	.Two tread
108	..Slotted tube
109	..Integral
110	.Single tread
111	.Hangers
112	CABLE RAILS
113	.Gravity
114	.Extensible marine
115	.Hangers and saddles
116	..Vertible movement
117	.Tension regulators and anchors
117.1	.With automatic stopping or reversing
118	MONORAIL
119	.With side guides
120	.Raised center rail
121	.Single top guide
122	DROP PICK UP
123	WAY SUSPENSION
124	ELEVATED STRUCTURE
125	POSTS AND TOWERS
126	PORTABLE ELEVATED
127	ELEVATORS
128	.Car
129	.Track control
130	SWITCHES
130.1	.For magnetically suspended vehicle
131	.Vertical
132	.Rack rail
133	DROPPINGS CATCHER
134	SLEDWAYS
135	.Roller track
136	.Ice track
137	TRAVELING TRACK
138.1	TUBULAR WAY
138.2	.Internal service device
139	TRUCK IN CONDUIT
140	SLOTTED CONDUIT
141	.Crossings
142	.Yokes
143	..Concrete
144	..Integral metallic
145	.Grip or plow traps

SLOTTED CONDUIT
146 .Adjustable slots
281 MAGNETICALLY SUSPENDED CAR
282 .Propulsion means employed to suspend car
283 .By permanent magnets only
284 .Including means to sense or control car position or attitude with respect to guideway
285 .With cooling means
286 .Construction or composition of suspension elements
287 CAR-CARRIED PROPULSION SYSTEM
288 .Electric
289 ..With regenerative energy means
290 ..Linear motor
291 ...Suspension between truck and vehicle body
292 ...Propulsion by active guideway, e.g., linear synchronous motor, etc.
293 ...Including means to control gap
294 ...Construction or composition of motor elements
295 ..External car control
296 ...Auxiliary function on car
297 ....Superimposed signal on same conductor
298 ...By block system
299 ...Of spacing between cars
300 ...Car-carried speed regulator
301 ...Of multiple trains on same track
302 ...Reversing of car movement or conductor current
303 ....By switch responsive to discrete means along guideway
304 ...Of steerable car
305 ...Of slot-guided car
154 .Hydraulic
155 .Pneumatic
156 ..Piston tube
157 ..Motor charging
158 ...Moving car
159 ....Longitudinal supply tube
160 .....Sliding-sleeve receiver
161 ..Sealing slot closers
164 TILTING TRACK
165 TRACTION
162 .Pusher
163 ..Rotary
166 .Longitudinal rotary shafts
167 .Helical
168 .Transverse live roll
169 .Reciprocating farm tool
170 .Truck distribution
171 ..Two-wheel type
172.1 .Chain
172.2 ..Tow pin or mast
172.3 ..Beneath vehicle
172.4 ..Suspended
172.5 ..Chain construction
173.1 .Cable
173.2 ..Ski tow
174 ..Counterbalanced system
175 ...Weight
176 ..Mule car
177 ..Mail
178 ..Drive and control
179 ...Signals
180 ..Running and carrying cable
181 ...Mail
182 ..Clearing-way hangers
183 ..Drum-wind draft
184 ..At switches
185 ..Crossing conduit
186 ...Cable depressors
187 ...Auxiliary car propulsion
188 ..At swing bridges
189 ..Curves
190 ...Auxiliary car propulsion
191 ...Horizontal pulley
192 ...Double-rope system
193 ..Draft-cable coupling
194 ..Slot closers
195 ..Slot switches
196 ..Take-ups
197 ..Supporting pulley
198 ..Cable shifters
199 ..Cable lifters
200 ..Cable clips
201 ...Strand engaging
202 ..Grippers
203 ...Pneumatically operated
204 ...Automatic grip control
205 ....Trip lever
206 .....Toggle-operated jaw
207 ....Releasable pawl
208 ....Weight-operated jaw
209 ....Spring-pressed jaw
210 ....Screw operated
211 ....Cam operated
212 ....Wedge operated
213 ...Longitudinal buffer
214 ...Laterally movable jaws
215 ....With guide rollers
216 ...Pivoted and fixed jaws
217 ...Forceps
218 ...Vertically movable jaws
219 ....Pawl lever and link
220 ....With guide rollers
221 .....Pawl lever and link
222 ...Wedge
223 ...Screw
224 ...Cam
225 ...V-clips or hooks
226 ...Friction belt
227 ...Overstepping
228 ....Revolving
229 ...Rollers
230 ....Power transmitting
231 ....Laterally movable
232 ....Vertically movable
233 .....Opposing twin
234 .....Staggered
235 ...Whelp wheel
236 ...Sprocket wheel
237 ...Sprocket belt
238 ...Drive stops on car
239 ...Cable-driving stops
240 ..Cable construction
241 SEAT-GUARD CONTROL
242 DERAILMENT GUARDS
243 .Supplemental car wheels and rails
244 .Inclined wheels
244.1 .Furrow feelers
245 .Guide rollers
246 ..Rail interlock
247 ..Horizontal thrust only
248 .Rail-interlocking lugs
249 CAR STOPS
250 .Special track
251 ..Car retaining
252 .Releasable feed
253 ..Alternate
254 .Bumpers
255 ..Counterweight
256 ..Fluid pressure
257 .Displaceable chock
258 .Rail-clamp chocks
259 .Sliding
260 .Wheel skid
261 CAR-ATTACHED DERAILER
262 CAR REPLACER
263 .Car attached
264 .Special track
265 .Two-way
266 ..With rollers

	CAR REPLACER
	.Two-way
267	..Double
268	.One way
269	..Symmetrical
270	..Saddles
271	..Pivoted ramp
272	.Articulated extension
273	.Shifting jack
274	.Rail clamps
275	HOSE BRIDGES
276	.Overhead
277	.Under rail
279	TRACK CLEARERS
280	.Conduit
306	WITH RUNNING GEAR
307	MISCELLANEOUS
	******************************
	DIGEST
	******************************
DIG 1	Toy railroad

CLASS 105 RAILWAY ROLLING STOCK

1.1	STREAMLINE FORM ROLLING STOCK
1.2	.Airlift or ducted
1.3	.Having laterally movable air directly member
1.4	TRAINS
1.5	.Toy or model train
3	.Articulated
4.1	..Two-car truck
4.2	...Separable bogie
4.3	...Truck under first car, second car carried by first
4.4	...Including wheel steering provision
5	.Nontelescoping
6	..Bevel ended
7	.One-track passage
8.1	.Vestibule connections
9	..Cab and tender
10	..Face-plate expanders
11	...Pneumatic
12	...Gravity
13	...Vertical equalizing
14	...Top bow spring
15	..Diaphragms
16	...Metallic
17	....Telescopic
18	...Bellows fold
19	....Slit plaits
20	....Fasteners
21	..Face plates
22	...Vertical hanger rod
23	..Curtain releasers
24	...Trip handles
25	...Twin jaws
25.1	..Ventilation
25.2	.Resilient mounting drive connection for shear stress
26.05	LOCOMOTIVES
26.1	.Trackman's-car type
27	.Auxiliary function
28	.Turntables
29.1	.With rack rail engaging drive
29.2	..Toy or model locomotive
30	.Gripping drivers
31	.Track pushers
32	.Intermittent grip
33	.Driver pick-up
34.1	.Powered bogie
34.2	..Secondary traction device on locomotive
35	.Generating electric
36	..Turbine
37	.Steam
38	..Turbine
39	..Compound
40	..Articulated boilers
41	..Center firebox twin
42	..Transverse cylinder
43	..Boilers
44	...Saddles
45	..Superheaters
46	..Firebox arrangement
47	..Articulated pipes
48	..Control
48.1	..With coal feeding means (e.g., stokers)
48.2	..And with or convertible to internal combustion engine
48.3	..And/or electric
49	.Electric
50	..Battery
51	...Cell disposal
52	..Double rotor
53	..Wheel rotor
54	..Rotor on axle
55	...Geared
56	...Plane field
57	...Balanced cylindrical field
58	...Twin fields
59	..Motor coolers
60	..Insulation
61	..Control
61.5	.Gas turbine
62.1	.Internal combustion engine
62.2	..Water cooled engine
63	.Pneumatic
64.1	..With pump
64.2	...Jet propelled
65	..Storage
66	.Propeller
67	.Spring
68	..Elliptic
69	..Coil
70	..Torsion
71	..Spiral
72	..Gravity
72.1	.Inertia drive
72.2	.With land engaging wheel
73	.Traction regulators
74	..Airplane
75	..Variable driver load
76	..Electric
77	..Electromagnetic
78	...Wheel or axle
79	.Inside drive boxes
80	..Lateral motion
81	..Wedge adjustment
82	.Equalizers
84	.Connecting rods
85	.Drive-wheel turners
86	TRACKMAN'S-CAR DRIVE
87	.Vertical hand lever
88	.Horizontal hand lever
89	.Hand crank
90.1	..Car pusher
90.2	...Motorized
91	.Pedal crank
92	..On axle
93	.Treadle
94	.Rockable seat
95	.Bicycle conversion
96	WHEEL OR AXLE DRIVE
96.1	.Axle box mounted transmission
96.2	.Fluid transmission
97	.Planetary
98	.Tandem drive
99	.Articulated radial
100	.Epicyclic drive wheels
101	.Belt gear
102	..To rotor
103	...Double loop
104	..To crank shaft
105	.Belt tightener
106	..Swinging motor
107	..Sliding motor
108	.Plane gear
109	..To bevel gear
110	..To belt
111	..To pitman and rotor
112	..Engaging traction wheel
113	..To rotor
114	...Engaging traction wheel
115	..With crank shaft
116	...Engaging traction wheel
117	.Bevel gear
118	..To rotor
119	.Worm gear
120	.Pitman to jack shaft
121	..Geared
122	.Pitman to rotor
123	.Pitman to lever
124	.Pawl and ratchet
125	..Pawl on axle bracket
126	...Winding drum
127	.Rack and pinion
128	.One-way friction grip
129	.Flange or axle grip tool

	WHEEL OR AXLE DRIVE
130	.Clutches
131	.Resilient drive
132	.Loose link
132.1	.Torque arms
133	MOTOR PLACEMENT
134	.Cable grip
135	.Opposing torque equalizer
136	.Axle mounting
137	..Stator casings
138	.Bar supports
139	..With springs
140	.Boxings and casings
141	MONORAIL
142	.Human balance
143	.Animal draft
144	.With slide guides
145	..Raised center rail
146	.Overhead guides
147	.Single top guide
148	SUSPENDED
149	.Car leveler
149.1	.Passenger car; e.g., for skiing
149.2	..Suspended chair
150	.Single rail
151	..Cable retainers
152	..Equalized trolleys
153	..Under rolls
154	.Inner wheels
155	.Outer wheels
156	.Vertical swivels
157.1	TRUCKS
157.2	.Toy or model truck
158.1	.Modified car
158.2	..With spring for low floor car
159	.Vehicle carrying
160	.Bunk
160.5	.Lumber
161	.Mining machine
162	.Trackman's car
163.1	.Overhead crane
163.2	..Skew control
164	.Levelers
165	.Radial
166	..Six-wheel
167	..Bogie
168	...Positive control
169	..Stub axle
170	..Caster-wheel type
171	.Lateral motion
172	.Locomotive frames
173	..Buffer beams
174	..Swinging bogie
175.1	..Articulated
176	.Interconnected
177	.Multidirectional
178	.Changeable gauge
179	.Vertical side pivot
180	.Stub axle
181	.Antifriction wheels
182.1	.Bogie
183	..Eight-wheel
184	..Maximum traction
185	..Lateral-motion bolster
186	...Roller
187	...Rocker
188	...Six-wheel
189	...Center plate
190.1	...Swinging
190.2	....Sprung or cushioned bolster
191	....On column guide
192	...Span supported
193	...Bolster damper
194	..Equalizers
195	...Six-wheel
196	..Six-wheel
197.05	..Sprung bolster
197.1	...Leaf and coil
197.2	...Spring plankless
198	...Rocking
198.1	...Pneumatic spring
198.2	...Bolster movement dampened by snubber
198.3	....Hydraulic damping
198.4	....Snubber biasing spring also supports bolster
198.5	....Bolster-mounted snubber
198.6	...Linear torsion spring
198.7	...Nonmetallic spring or cushion
199.1	..Body connections
199.2	...Anti-roll device
199.3	...Truck side bearing
199.4	...Truck center bearing
199.5	...Single axle
200	..Bolster connections
201	...Lateral motion
202	..Combined transom and bolster
203	...Rocking
204	..Arch-bar type
205	...Intergral
206.1	..Side frames
206.2	...Welded
207	..Bolster guides
208	..Spring planks and transoms
208.1	...Resiliently mounted transoms
208.2	...Vertically flexible spring plank or loose connections
209	.Equalizers
210	.Parallel depression
211	.Platform
212	..Spring
213	...Side-frame base
214	....Integral U-yoke
215.1	.Supplemental wheel
215.2	..Railway/highway truck
216	.Supplemental skids
217	.Safety supports
218.1	.Axle bearing mounting
218.2	..Axle bearing mounted on pivotal sideframe arms
219	..Permanent fixture
220	..Detachable fixture
221.1	..Releasable enclosure
221.2	...Key release
222	..Longitudinally movable
223	..Rocking
224.05	..Spring and guide
224.06	...Spring biased guide or guide follower
224.1	..Deformable cushions
225	..Wear plates
226	.Bolster
227	..Double
228	..Center-sill connection
229	..Trussed
230	..Cast
231	TENDER
232	.Coal feed
233	..Reciprocatory plunger
234	..Screw
235	..Tilting pan
236	.Tanks
237	.Coal bin
238.1	SPECIAL CAR BODIES
238.2	.Toy or model railway car
239	.Dumping
240	..Motor-operated doors
241.1	..Moving car dump
241.2	...Actuated by means external to car
242	..Suspended
243	..Convertible flat and hopper bottom
244	..Gondola drop bottom
245	...Central ridge
246	...Rising ridge
247	..Hopper type
248	...Multiple hopper
249	....Facing center chute
250	...Longitudinal doors

SPECIAL CAR BODIES
.Dumping
..Hopper type
...Longitudinal doors
251 ....Center-sill separator
252 ....Side-chute bridge
253 ...Transverse doors
254 ..Inclined bottom
255 ...Opposite doors
256 ...Side-spout gondola
257 ...Shifting
258 ..Side-door gondola
259 ...Plow car
260 ..Coupled side and bottom
261.1 ..Tilting body
261.2 ...End dumping car
262 ...Inwardly dumping section
263 ...Outwardly dumping section
264 ...Rolling tilt
265 ....With motor
266 ....Worm gear
267 ....Screw
268 ...Cam-track tilt
269 ...Side and tilt
270 ...Pivoted
271 ....With motor
272 ....Off center
273 .....Power hoist
274 .....One-side dump
275 ......Horizontal rotary
276 ...Displaceable sides
277 ....Bodily movable
278 ...Body prop and tie
279 ...Aprons and baffles
280 ..Doors
281 ...Interchangeable hinge
282.1 ...Sliding
282.2 ....Having resilient sealing gasket
282.3 ....Driven by rack and pinion
283 ...Offset pivot
284 ...Link swing
285 ...Buffers
286 ..Door actuators
287 ...Serial and selective
288 ...Multiple door
289 ....Interconnected
290 .....Links
291 ......With hook
292 .....Chains
293 ...Creeping shaft
294 ....Rack and pinion
295 ....Chain wind
296 ...Crank shaft
297 ....Creeping
298 ....U-crank
299 ...Crank and link
300 ...Chain winder
301 ....Creeping-shaft lock
302 ....Tension lock shifter
303 ....Terminal hook
304 ...Toggle or strut
305 ...Rack and pinion
306 ...Lever or chain
307 ...Screw or worm
308.1 ..Having door latch
308.2 ...Toggle
309 ...Shifting-shaft
310 ...Door actuator operated
310.1 ...Bolt pivoted about axis parallel to door plane
310.2 ...Sliding bolt
311.1 ..Control
311.2 ...Lost motion
312 ...Ratchet-handle
313 ...Shaft lock
314 .Sleeping
315 ..Arrangement
316 ..Berths
317 ...Vertically movable
318 ....With hoist
319 ...Collapsible
320 ...Hammock type
321 ...Hinged
322 ...Seat back and upper
323 ..Partitions
324 ..Curtains and rods
325 ..Article holders
326 ..Ladders and steps
327 .Dining
328 .Merchandising
329.1 .Passenger
330 ..Rolling
331 ..Combined open and closed
332 ..Convertible open and closed
333 ...Vertical sliding panel
334 ....Roof storage
335 ....Drop storage
336 ...Seat-back panel
337 ...Removable sides
338 ...Removable panels
339 ...Spaced sliding doors
340 ..Double deck
341 ..Entrance and exit control
341.5 ...Turnstile
342 ..Motorman's compartment
343 ..Door arrangement
344 ..Passenger placement
345 ...Seats
346 ....Open car
347 .....End panels
348 ..Emergency exits
349 ...Automatic
350 ..Dust guards
351 ...Car bottom
352 ....With collector
353 ..Storm fronts
354 ..Hand straps
355 .Freight
356 ..Rolling
357 ..Vacuum wall
358 ..Tank
359 ...Combined freight
360 ...Tank form
361 ...Longitudinally slidable
362 ...Saddle and anchors
363 ..Knockdown body
364 ..Mine
365 ..Tubular way
370 ..Convertible deck
371 ...Sectional
372 ....Side hinge
373 ..Tiered crates and slides
374 ..Interior end buffers
375 ..Auxiliary floors
377 ..Removable covers
378 ..Movable side sections
379 ..Extension side walls
380 ..Stakes
381 ...Side folding
382 ...Releasable
383 ....Pocket openers
384 ....Direct detent
385 ....Horizontal slide
386 ....Vertical slide
387 ....Collapsible
388 ....Chain release
389 ...Telescopic
390 ...Pockets
391 ....Folding
392 ..Freight-contacting rollers
392.5 .Shock absorbing
393 .Expansible
394 .Armored and protected
395 .Automatic door lock
396 CAR FRAMING AND STRUCTURE
397 .Passenger

	CAR FRAMING AND STRUCTURE
	.Passenger
398	..Depressed side door
399	..Truss
400	..Continuous rib
401	..Metal sheathing
402	..Ends
403	...Cast
404	.Freight
405	..Concrete
406.1	..Gondola
406.2	...Drop end door
407	..Truss
408	..Timber pockets
409	..Metal sheathing
410	...Ends
411	..Braces
412	..Shrinkage take-ups
413	.Underframes
414	..Metallic
415	...Cast
416	...Mono-center sill type
417	...Spread-center sill type
418	...Longitudinal sills
419	...Cross bearers
420	.Draft-sill framing
421	.End sills
422	FLOORS
423	LININGS
424	ANTILEAK JOINTS
425	PLATFORMS
426	.Trapdoors
427	..Operated with gate and step
428	..Diagonal sectional
429	..With gate
430	..With steps
431	...Convertible
432	..Actuators
433	...Lateral shifter
434	...Spring
435	..Locks and starters
436	.Side gangway
437	STEPS WITH GATE
438	.Convertible
439	SIDE GUARDS
440	.Single passage
441	..Seat shifter
442	.Long drop bar
443	STEPS
444	.Electric control
445	.Pneumatic control
446	.Car-movement control
447	.Folding
448	..Z-fold riser
449	.Slidable
450	.Cover
451	HEATING DEVICES
452	SOUND DEADENERS
453	BODY SUSPENSION AND SPRINGS
454	LONGITUDINALLY MOVABLE BODY
455	HORIZONTAL ROTARY
456	CABS
457	RUNNING BOARDS AND RAILS
458	SAFETY BRIDGES
459	.Locomotive and tender
460	END FOOTBOARDS
461	GRAB IRONS
462	POLING, ROPING, AND JACKING IRONS
463.1	MISCELLANEOUS

CLASS 106 COMPOSITIONS, COATING OR PLASTIC

DECEMBER 1990

COATING OR PLASTIC COMPOSITIONS

1.05 .Metal-depositing composition or substrate-sensitizing compositions for metal-depositing compositions
1.11 ..Sensitizing composition
1.12 ..Metal-depositing composition contains mixtures of elemental metal and a metal compound other than solely as a Group IA metal compound
1.13 ...Elemental metal is Group IB (Cu, Ag, Au)
1.14 ....Elemental metal is Ag
1.15 ...Elemental metal is noble metal of Group VIII (Ru, Rh, Pd, Os, Ir, Pt)
1.16 ...Elemental metal is Group IIB (Zn, Cd, Hg) metal
1.17 ....Elemental metal is Zn
1.18 ..Metal-depositing composition contains elemental metal of Group IB (Cu, Ag, Au)
1.19 ...Elemental metal is Ag
1.21 ..Metal composition contains elemental noble metal of Group VIII (Ru, Rh, Pd, Os, Ir, Pt)
1.22 ..Metal-depositing composition contains mixtures of metal compounds other than solely as Group IA metal compounds, e.g., electroless
1.23 ...At least one metal is a Group IB (Cu, Ag, Au) metal
1.24 ...At least one metal is a noble metal of a Group VIII (Ru, Rh, Pd, Os, Ir, Pt) metal
1.25 ..Metal-depositing composition contains polyvalent metal compound
1.26 ...Group IB (Cu, Au) metal
1.27 ...Group VIII metal
1.28 ....Group VIII noble metal (Ru, Rh, Pd, Os, Ir, Pt)
1.29 ...Group IIB (Zn, Cd, Hg) metal
2 .Coating repellent
3 .Polishes
4 ..Protein or derivative containing
5 ..Carbohydrate or derivative containing
6 ..Natural resin or derivative containing
7 ...With fatty oil
8 ..Fat, fatty oil, fatty oil acid or salt thereof containing
9 ...Fatty oil
10 ..Wax, bituminous material or tarry residue containing
11 ..Hydrocarbon containing
12 .Saturating or indurating
13 .Fog, frost or ice preventive
14.05 .Corrosion inhibiting coating composition
14.11 ..Contains water
14.12 ...Phosphorus material
14.13 ...Carboxylic acid, ester, alcohol or sulfur or metal derivative
14.14 ....Inorganic material other than water
14.15 ...Organic nitrogen-containing material, e.g., amine, amide, etc.
14.16 ....Heterocyclic nitrogen-containing material
14.17 .....Inorganic material other than water
14.18 ....Amine salt of carboxylic acid
14.21 ...Inorganic material or elemental component thereof, e.g., S, metal, etc.
14.22 ..Contains animal, vegetable, fish oil or a fraction or derivative thereof
14.23 ...Carboxylic acid, ester, alcohol or metal or sulfur or amine or amide derivative thereof
14.24 ....Carboxylic acid, ester, or amine or amide derivative
14.25 ...Inorganic material or elemental component thereof
14.26 ..Contains petroleum oil or a fraction thereof
14.27 ...Carboxylic acid, ester, alcohol or sulfur or metal derivative thereof
14.28 ....Metal salt of carboxylic acid
14.29 ....Metal salt of sulfonic acid
14.31 ...Organic nitrogen-containing material, e.g., amine, amide, etc.
14.33 ...Inorganic material or elemental component thereof, e.g., S, metal, etc.
14.34 ..Contains wax, bitumen, asphalt, gum, natural resin, varnish, lacquer, or paint
14.35 ...Caboxylic acid, ester, alcohol or sulfur or metal derivative
14.36 ....Metal salt of carboxylic acid
14.37 ...Organic nitrogen-containing material
14.38 ...Organic sulfur-containing material
14.39 ...Inorganic material or elemental component thereof
14.41 ..Contains mixture of at least two organic compounds
14.42 ...Organic nitrogen-containing material
14.43 ...Organic sulfur-containing material
14.44 ..Contains mixture of organic material and at least one inorganic material or elemental component thereof
14.45 ...Elemental S or inorganic sulfur-containing compound
14.5 .Hectographic or copying
15.05 .Contains fireproofing or biocidal agent
16 ..Natural resin or derivative containing
17 ...With fat, fatty oil, fatty oil acid or salt thereof
18 ..Fat, fatty oil, fatty oil acid or salt thereof containing
18.11 ..Contains fireproofing agent
18.12 ...Silicon containing
18.13 ...Boron containing
18.14 ...Phosphorus containing
18.15 ....Nitrogen-containing phosphorus compound
18.16 .....Inorganic compound contains a phosphorus and a nitrogen atom
18.17 .....Contains phosphorus directly bonded to nitrogen
18.18 ....Phosphorus compound is organic
18.19 .....Phosphorus compound which is organic contains halogen
18.2 .....With halogen-containing compound
18.21 ...Nitrogen-containing organic compound
18.22 ....Nitrogen compound contains a sulfur atom
18.23 ...Elemental sulfur or sulfur-containing organic compound
18.24 ...Halogen-containing organic compound
18.25 ....With at least one inorganic material which is other than water
18.26 ...Metal-containing material
18.27 ....Group IIB metal atom (Zn, Cd, Hg)
18.28 ....Group VA metal atom (As, Sb, Bi)
18.29 ..Wax containing
18.3 ..Boron containing
18.31 ..Phosphorus containing
18.32 ..Nitrogen-containing compound
18.33 ...Nitrogen compound contains a sulfur atom
18.34 ..Elemental sulfur or sulfur-containing organic compound
18.35 ..Halogen-containing organic compound
18.36 ..Group IIB metal containing (Zn, Cd, Hg)
19 .Marking
20 ..Inks
21 ...Invisible

	COATING OR PLASTIC COMPOSITIONS
	.Marking
	..Inks
22	...Organic dye containing
23	....With pigment
24	...Protein or derivative containing
25	...Carbohydrate or derivative containing
26	....Cellulose or derivative
27	...Fat, fatty oil, fatty oil acid or salt thereof containing
28	....Fatty oil
29	.....With natural resin or derivative
30	...Natural resin or derivative containing
31	...Wax, bituminous material or tarry residue containing
32	...Hydrocarbon containing
32.5	.Erasable surface
33	.Leak stopping
34	.Stains
35	.Dental
36	.Tractive or friction surface
37	.Sound recording
38	.Shoe filling
38.2	.Molds and mold coating compositions
38.22	..Compositions for coating and lining molds
38.23	...Carbohydrate or derivative containing
38.24	...Fat, fatty oil, fatty oil acid or salt thereof containing
38.25	...Wax, bituminous or resinous material or tarry residue containing
38.27	...Inorganic materials only
38.28	....Elemental carbon containing
38.3	..Alkali metal silicate or inorganic settable ingredient containing
38.35	...With organic material
38.4	..Protein or derivative containing
38.51	..Carbohydrate or derivative containing
38.6	..Natural resin or derivative containing
38.7	..Fat, fatty oil, fatty oil acid or salt thereof containing
38.8	..Wax, bituminous material or tarry residue containing
38.9	..Inorganic materials only
600	.Alkali metal silicate containing
601	..Pore forming or product thereof
602	...Perlite, slag, ash or ceramic material
603	...Organic material containing
604	...Process employing steam, electrical, magnetic or wave energy or product thereof or specified particle size or shape
605	..Hollow, foam, cellular or porous materials containing
606	..Portland type cement containing
607	...Soil, diatomaceous earth or clay containing or material for treating soil or earth, (e.g., soil stabilization, etc.)
608	...Organic material containing
609	....Carbohydrate containing
610	..Natural resin containing (e.g., rosin, shellac, turpentine, tall oil, etc.)
611	..Calcium sulfate containing
612	..Lime containing
613	...Organic material containing
614	..Protein containing
615	...Carbohydrate containing
616	...With other organic material
617	..Carbohydrate containing
618	...Cellulose
619	....Wood, paper, or paper pulp
620	..Higher fatty acid or ester, amide or salt thereof containing
621	...With other organic material or asbestos
622	..Wax, paraffin, oil shale, or bituminous material containing (e.g., asphalt, pitch, tar, etc.)
623	..Free metal or alloy containing
624	..Ash, slag, slag wool, rock wool, mineral wool, asbestos, or organic garbage or sewage material containing
625	...Asbestos containing
626	..Mica, elemental carbon, zeolite or talc containing
627	..Sulfur containing (e.g., alum, etc.)
628	..Boron containing
629	..Phosphorus containing
630	...Organic material containing
631	..Perlite, rock, stone, shale, slate, flint, granite, feldspar or limestone containing
632	..Clay containing
633	..Soil or diatomaceous earth containing, or material for treating soil or earth (e.g., soil stabilization, etc.)
634	..Organic material containing
635	..Zirconium, titanium, zinc, lead, iron, or tin compound containing (Zr, Ti, Zn, Pb, Fe, Sn)
636	..Particle size specified
637	..Fluorine containing
638	.Inorganic settable ingredient containing
639	..For use underwater
640	..Free metal or alloy containing (e.g., dust, powder, etc.)
641	...Aluminum
642	....Organic material containing
643	...Iron or steel
644	....Fiber bar or wire containing
645	..Protein containing (e.g., glue, gelatine, albumin, blood, etc.)
646	...Hollow, foam, cellular or porous material
647	...Soil, diatomaceous earth, clay, rock, stone, granite, flint, slate, shale, or material for treating soil or earth (e.g., soil stabilization, etc.)
648	....With organic material other than protein
649	...Cereal grain or derived therefrom or vegetable flour or meal (e.g., gluten, corn flour, rice, rye, etc.)
650	...Calcium sulfate containing
651	....With organic material other than protein
652	.....Carbohydrate
653	......Plant or vegetable fiber (e.g., wood, sawdust, etc.)
654	....Portland type cement, slag, talc, mica, asbestos, ash, or alum containing
655	...With organic material other than protein
656	....Carbohydrate
657	..Natural resin containing (e.g., shellac, turpentine, balsam, copal, etc.)
658	...Calcium sulfate, aluminous or oxy salt type cement
659	...Rosin or tall oil (e.g., colophony, etc.)
660	..Wax containing (e.g., petroleum wax, beeswax, montan wax, carnauba wax, spermaceti, etc.)
661	..Higher fatty acid or ester, amide or salt thereof containing (e.g., fish oil, vegetable oil, soap, etc.)

COATING OR PLASTIC COMPOSITIONS

.Inorganic settable ingredient containing
..Higher fatty acid or ester, amide or salt thereof containing (e.g., fish oil, vegetable oil, soap, etc.)
662 ...Soil, diatomaceous earth, shale, slate or clay, containing, or material for treating soil or earth (e.g., soil stabilization, etc.)
663 ...Linseed oil or tallow containing
664 ...Portland type cement containing
665 ...With other organic material
666 ...Stearic acid or derivative
667 ...Lime containing
668 ..Bituminous material or tarry residue, pitch, or coal containing
669 ...Soil, diatomaceous earth, or clay, containing, or material for treating soil or earth (e.g., soil stabilization, etc.)
670 ...Calcium sulfate containing
671 ...With other organic material
672 ..Hollow, foam, cellular or porous material containing or method of forming cellular or porous product
673 ...Peroxide or hypochlorite containing
674 ...Carbohydrate containing
675 ...Perlite or vermiculite containing (e.g., jeffersite, etc.)
676 ...Glass containing
677 ...Organic material containing
678 ....Organic sulfur or organic phosphorus
679 ...Slag, cinder or ash containing
680 ...Calcium sulfate containing (e.g., anhydrite, plaster of Paris, gypsum, etc.)
681 ...Soil, diatomaceous earth, clay, shale, slate or rock material containing or material for treating soil or earth (e.g., soil stabilization, etc.)
682 ...Physical introduction of gas (e.g., by mixing, agitation, injection, whipping, etc.)
683 ..Oxy salt type cement
684 ...Soil, diatomaceous earth, clay, slate or shale containing or material for treating soil or earth (e.g., soil stabilization, etc.)
685 ...Magnesium oxy-chloride (e.g., Sorel cement, etc.)
686 ....Organic material containing
687 .....Carbohydrate (e.g., cellulose, etc.)
688 ....Specified filler, dye or pigment (e.g., silica, feldspar, carbon, talc, asbestos, slag, mineral wool, etc.)
689 ...Organic material or specified filler
690 ..Phosphate based cement
691 ...Specified filler or organic material containing
692 ..Aluminous cement (e.g., high alumina, calcium aluminate, etc.)
693 ...Cement clinker preparation
694 ...Soil, diatomaceous earth, clay, shale, slate, or rock-type material containing or material for treating soil or earth (e.g., soil stabilization, etc.)
695 ...With other cement material (e.g., Portland, calcium sulfate, etc.)
696 ...Organic material containing
697 ..Organic garbage, refuse sewage, or waste material containing or treating (other than sulfite waste liquor)
698 ..Perlite containing
699 ..Asbestos containing (e.g., amosite, chrysotile, etc.)
700 ...Slag, ash or organic material containing
701 ....Calcium sulfate containing (e.g., gypsum, plaster of Paris, anhydrite, etc.)
702 ...Soil, diatomaceous earth, clay, slate, shale or rock containing or material for treating soil or earth (e.g., soil stabilization, etc.)
703 ...Portland type cement
704 ...Lime containing
705 ..Ash containing (e.g., fly ash, volcanic ash, coal ash, etc.)
706 ...Soil, diatomaceous earth, clay, shale, slate or rock containing or material for treating soil or earth (e.g., soil stabilization, etc.)
707 ...With slag, coke, cinder, stack dust, kiln dust or flue dust
708 ...Organic material containing
709 ...Portland type cement
710 ...With additional lime
711 ..Mineral fibers or glass fibers containing (e.g., slag wool, cotton wool, mineral wool, rock wool, etc.)
712 ..Color additive (other than whitener)
713 ..Portland type cement
714 ...Slag containing (e.g., blast furnace slag, etc.)
715 ....Calcium sulfate specified (e.g., gypsum, anhydrite, plaster of Paris, etc.)
716 ...With mica, talc, cinder, glass, vermiculite, coke breeze or kiln dust
717 ...Boron, elemental carbon or phosphorus containing
718 ...Soil, diatomaceous earth, clay, slate or shale, containing or material for treating soil or earth (e.g., soil stabilization, etc.)
719 ....Organic material containing
720 .....Carbohydrate
721 ....Silica or lime added
722 ....Calcium sulfate specified (e.g., gypsum, anhydrite, plaster of Paris, etc.)
723 ...Process involving steam, electrical, magnetic or wave energy, vibration or vacuum or product thereof
724 ...Organic material containing
725 ....Organic sulfur compound
726 .....Cellulose or silica containing (e.g., sand, etc.)
727 ....Organic nitrogen compound
728 ....Carboxylic acid, ester or salt thereof
729 ....Carbohydrate
730 .....Starch, dextran, cellulose ether or gum
731 .....Plant material (e.g., vegetable fiber, wood, etc.)
732 ....Calcium sulfate specified (e.g., gypsum, anhydrite, plaster of Paris, etc.)
733 ...Titanium, vanadium, chromium, molybdenum, tungsten, manganese, iron, copper, zinc, tin or lead compound containing (Ti, V, Cr, Mo, W, Mn, Fe, Cu, Zn, Sn, Pb)
734 ...Halogen containing (F, Cl, Br, I)
735 ...Calcium sulfate specified (e.g., gypsum, anhydrite, plaster of Paris, etc.)
736 ...Sulfur containing (e.g., alum, etc.)

COATING OR PLASTIC COMPOSITIONS
.Inorganic settable ingredient containing
..Portland type cement
737 ...Silica containing (e.g., sand, quartz, etc.)
738 ...Rock, gravel, stone or carbonate containing (e.g., limestone, dolomite, etc.)
739 ...Portland type cement per se (e.g., clinker preparation, etc.)
740 ....Process involving spray drying, atomizing of solid material, steam, nonatmospheric pressure, cleaning step or avoiding contamination of equipment
741 ....Color control or modification (e.g., steps to produce white cement, etc.)
742 .....Cooling in reducing atmosphere
743 ....Control of a parameter of operation in response to a measurement or test or to vary a result in a process
744 ....Employment of a fluidized bed
745 ....Waste material employed as raw material or fuel (not kiln dust)
746 ....Electrical, magnetic or wave energy employed (e.g., electric arc, etc.)
747 ....Use of heat transmitting or conducting solid material for cooling solid material from gas or for modifying temperature of solid material
748 ....Aftertreatment of clinker
749 .....Refire or recalcine clinker
750 .....Specified cooling (e.g., recycling heated coolant, etc.)
751 ....Involving kiln dust (e.g., recovery, treatment, processing thereof or product, etc.)
752 ....Treatment or removal of alkali, sulfurous or chloride impurities from raw material or fuel
753 ....Agglomerate, pellet, molded or shaped form of raw material
754 .....Sheet, film, layered, brick, briquette, block, fiber, strand, cake or egg-shape
755 .....Fuel containing
756 ....Classifying, sorting, separating, screening, sizing, grading or subdividing solid material (e.g., centrifugal separation, flotation, etc.)
757 ....Comminuting or grinding, other than nominal, of raw material or fuel (e.g., to desired size or relative sizes, etc.) or recited particle of specified size
758 ....Raw material and fuel premixed or specified fuel
759 ....Flow of gases to produce turbulence (e.g., spiral, helical, Venturi, centrifugal, etc.)
760 ....Shape, angle, intensity or condition of fuel or flame specified (e.g., jet, oscillating, plural streams, spray, temperature, etc.)
761 ....Recycling exhaust gas, reusing heat from process, or purifying exhaust gas
762 .....Processing of exhaust gas prior to recycling (e.g., purifying, separating constituents, etc.)
763 ....Ash containing raw material
764 ....Organic material or sea shell containing raw material
765 ....Calcium sulfate containing raw material
766 ....Phosphorus, boron, chromium, molybdenum, vanadium, or nickel containing raw material (P, B, Cr, Mo, V, Ni)
767 ....Slag containing raw material
768 ....Potassium, halogen or sulfur containing raw material (K, F, Cl, Br, I, S)
769 ....Iron or manganese containing raw material (Fe, Mn)
770 ....Slurry employed
771 ....Preprocessing or processing of raw material before firing (e.g., preheating, etc.)
772 ..Calcium sulfate (e.g., gypsum, anhydrite, plaster of Paris, etc.)
773 ...Soil, diatomaceous earth, clay, slate or shale, containing or material for treating soil or earth (e.g., soil stabilization, etc.)
774 ....Organic material containing
775 ...Anhydrous calcium sulfate (e.g., anhydrite, etc.)
776 ....Organic material or slag containing
777 ....Keene's cement
778 ...With organic material
779 ....Carbohydrate
780 .....Cellulose (e.g., wood, cork, bark, etc.)
781 ....Silicon, sulfur, nitrogen or phosphorus containing organic material
782 ...Slag, cinder, mica, talc, glass, boron or elemental carbon containing
783 ...Layered or coated material, nominal molding or shaping, or other physical process (e.g., steam, electrical, magnetic or wave energy, manipulative steps, etc.)
784 ...Particle size specified
785 ...Stabilizer, retarder, or setting agent specified
786 ...By-product gypsum (e.g., phosphogypsum, etc.)
787 ...Alum or halogen containing
788 ...Silica containing (e.g., sand, quartz, etc.)
789 ..Slag
790 ...Organic material, soil, diatomaceous earth, clay, slate, shale, or rock-type material containing or material for treating soil or earth (e.g., soil stabilization, etc.)
791 ...Lime containing
792 ..Lime
793 ...Soil, diatomaceous earth, clay, slate or shale, containing or material for treating soil or earth (e.g., soil stabilization, etc.)
794 ....Organic material or halogen containing
795 ...Organic material containing
796 ...Silica-lime mixtures
797 ....Fiber containing or step of molding or shaping of material
798 ....Iron, sulfur or aluminum containing (e.g., alum, etc.)
799 ...Aluminum or sulfur containing (e.g., alum, etc.)
800 ...Magnesium compound containing (e.g., quicklime, dolomite, talc, etc.)
801 ..Magnesium compound (e.g., vermiculite, talc, soapstone, dolomite, etc.)

COATING OR PLASTIC COMPOSITIONS
.Inorganic settable ingredient containing
802 ..Organic material containing
803 ...Soil, diatomaceous earth, clay, slate or shale containing, or material for treating soil or earth (e.g., soil stabilization, etc.)
804 ...Carbohydrate containing
805 ....Cellulose or plant material
806 ...Organic silicon, organic boron or organic phosphorus
807 ...Mineral oil or hydrocarbon oil
808 ...Organic nitrogen
809 ...Organic sulfur
810 ...Organic acid or derivative
811 ..Soil, diatomaceous earth, clay, slate or shale containing, or material for treating soil or earth (e.g., soil stabilization, etc.)
812 ...With added silica (e.g., sand, etc.)
813 ..Synthetic zeolite or so-called mineral polymer containing
814 ..Mica, cinder, glass or elemental carbon containing
815 ..Boron, sulfur, or halogen containing (e.g., alum, etc.)
816 ..Particle size specified
817 ..Rock, stone, gravel, trass, shell or carbonate containing (e.g., limestone, etc.)
818 ..Process involving a temperature of zero degrees C. or below
122 .Pore forming
123.1 .Cellulose liberation liquor containing
123.2 ..Tall oil
124 .Protein or derivative containing
125 ..Gelatine, glue or derivative
126 ...With carbohydrate or derivative
127 ....Cellulose or derivative
128 .....Cellulose ether or ester
129 ....Gum or derivative
130 ....Starch or derivative
131 ...With fat, fatty oil, fatty oil acid or salt thereof
132 ....Fatty oil
133 ...With natural resin or derivative
134 ...With wax, bituminous material or tarry residue
135 ...With solvent or dispersing medium
136 ...With flux or plasticizer
137 ...With filler, dye or pigment
138 ..Casein or derivative
139 ...With carbohydrate or derivative
140 ....Cellulose or derivative
141 .....Cellulose ether or ester
142 ...With fat, fatty oil, fatty oil acid or salt thereof
143 ....Fatty oil
144 ...With natural resin or derivative
145 ...With wax, bituminous material or tarry residue
146 ...With solvent or dispersing medium
147 ...With flux or plasticizer
148 ...With filler, dye or pigment
149 ..Prolamine or derivative
150 ...With carbohydrate or derivative
151 ....Cellulose or derivative
152 ...With wax, bituminous or resinous material or tarry residue
153 ...With flux, solvent or dispersing medium
154.1 ..Seed protein or derivative
155 ..Feathers, hair or leather
156 ...With wax, bituminous or resinous material or tarry residue
157 ..With carbohydrate or derivative
158 ...Cellulose or derivative
159 ..With fat, fatty oil, fatty oil acid or salt thereof
160 ..With wax, bituminous or resinous material or tarry residue
161 ..With flux, solvent or dispersing medium
162 .Carbohydrate or derivative containing
163.1 ..Cellulose or derivative
164 ...Viscose
165 ....Spinning solutions
166 .....With delustering agent
167 ...Cuprammonium cellulose
168 ...Regenerated cellulose
169 ...Cellulose ether or ester
170 ....Emulsions
171 ....With fat, fatty oil, fatty oil acid or salt thereof
172 .....With natural resin or derivative
173.1 ....With natural resin or derivative
174 ....With terpene or derivative
175 .....With ether, ester or alcohol
176 ....With heterocyclic compound
177 ....With phosphorus containing compound
178 ....With carboxylic acid, salt or ester thereof (except wax)
179 .....Ether group containing
180 .....Polyhydric alcohol ester
181 .....Polycarboxylic acid, salt or ester thereof
182 .....Oxo- or oxy-acid or ester thereof
183 .....Lower fatty acid or ester thereof
184 ......With aldehyde or ketone
185 ......With ether or alcohol
186 ....With amine or amide
187 ....With aldehyde or ketone
188 ....With ether
189 ....With alcohol or phenol
190 ....With halogen containing carbon compound
191 ....With hydrocarbon, wax, bituminous material or tarry residue
192 ....With delustering agent
194 ....With metal salt
195 ....Cellulose nitrate
196 ....Cellulose acetate
197.1 ....Cellulose ether
197.2 .....Carboxymethyl cellulose
198 ....Processes

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Note: See subclasses ....
902-904 for art collection..
pertaining to subclasses....
169-198. ....
****

199 ...With fat, fatty oil, fatty oil acid or salt thereof
200 ...With natural resin or derivative
201 ...With wax
202 ...With bituminous material or tarry residue
203 ...With solvent or dispersing medium
204 ...With filler, dye or pigment
204.1 ...Cork
205 ..Carbohydrate gum
206 ...With fat, fatty oil, fatty oil acid or salt thereof
207 ...With wax, bituminous or resinous material or tarry residue
208 ...With solvent or dispersing medium
209 ...With filler, dye or pigment
210 ..Starch containing
211 ...With fat, fatty oil, fatty oil acid or salt thereof
212 ...With wax, bituminous or resinous material or tarry residue
213 ...With solvent or dispersing medium
214 ...With filler, dye or pigment

COATING OR PLASTIC COMPOSITIONS
.Carbohydrate or derivative containing
215 ..With fat, fatty oil, fatty oil acid or salt thereof
216 ..With wax, bituminous or resinous material or tarry residue
217 ..With filler, dye or pigment
218 .Natural resin or derivative containing
219 ..With fat, fatty oil, fatty oil acid or salt thereof
220 ...Fatty oil
221 ....Two or more kinds of fatty oil
222 ....Drying oil
223 .....With sulfurizing or sulfonating agent
224 .....With wax
225 .....With bituminous material or tarry residue
226 .....With terpene or derivative
227 .....With hydrocarbon
228 .....With filler, dye or pigment
229 ....With wax, bituminous material or tarry residue
230 ..With wax
231 ...Ester type wax
232 ..With bituminous material or tarry residue
233 ...With sulfurizing or sulfonating agent
234 ...With hydrocarbon
235 ...With filler, dye or pigment
236 ..With solvent or dispersing medium
237 ...Alcohol containing
238 ...Water containing
239 ...Hydrocarbon containing
240 ..With flux
241 ..With filler, dye or pigment
242 ...Fibrous
243 .Fat, fatty oil, fatty oil acid or salt thereof containing
244 ..Fatty oil
245 ...With wax
246 ...With bituminous material or tarry residue
247 ....With sulfurizing or sulfonating agent
248 ....With filler, dye or pigment
249 ...With sulfurizing or sulfonating agent
250 ...Two or more kinds oil
251 ....With filler, dye or pigment
252 ...Drying oil
253 ....With filler, dye or pigment
254 .....Zinc compound
255 ......Lithopone
256 .....Lead compound
257 ......White lead
258 ......Red lead
259 .....Iron compound
260 .....Calcium compound
261 .....Carbonaceous
262 .....Pigment treatment
263 ....With preserving or stabilizing agent
264 ....With drier
265 ....With hydrocarbon
266 ...With filler, dye or pigment
267 ...With hydrocarbon
268 ..With wax
269 ..With bituminous material or tarry residue
270 .Wax containing
271 ..With solvent or dispersing medium
272 ..With filler, dye or pigment
273.1 .Bituminous material or tarry residue
274 ..With sulfurizing or sulfonating agent
275 ...With filler, dye or pigment
276 ..Rock asphalt
277 ..Bituminous emulsion
278 ..With solvent or dispersing medium
279 ..With flux
280 ...With filler, dye or pigment
281.1 ..With filler, dye or pigment
282 ...Fibrous
283 ...Water containing
284 ...Coal tar or pitch containing
284.1 ..Phosphorus containing
284.2 ..Halogen containing
284.3 ..Metal compound containing
284.4 ..Nitrogen containing
284.01 ...Specified particle or screen-mesh size stated
284.02 ...Heavy metal or aluminum containing
284.03 ...Alkali or alkaline earth metal containing
284.04 ....Lime, limestone or chalk containing
284.05 ...Elemental carbon containing
284.06 ...Nitrogen containing
285 .Hydrocarbon containing
286.1 .Inorganic materials only containing at least one metal atom
286.2 ..Containing two or more diverse metal atoms in a single compound
286.3 ..Fe or Co containing
286.4 ..Group IV metal atom (Ti, Zr, Hf, Ge, Sn, or Pb) containing
286.5 ..Aluminum containing
286.6 ..Group II metal atom (Be, Mg, Sr, Ca, Ba, Ra, Zn, Cd, or Hg) containing
286.7 ..Group I metal atom (Li, Na, K, Rb, Cs, Fr, Cu, Ag, or Au) containing
286.8 .Inorganic materials only
287.1 .Silicon containing other than solely as silicon dioxide or as part of an aluminum-containing compound
287.11 ..N-containing Si compound
287.12 ..-OH bonded directly to Si atom
287.13 ..C bonded directly to Si atom
287.14 ...H or alkyl directly bonded to Si
287.15 ...C radical bonded to Si is unsaturated
287.16 ..Si-O-C bonded compound
287.17 .Aluminum compound containing
287.18 .Heavy metal compound containing
287.19 ..Group IVA or IVB (Ti, Zr, Hf, Ge, Sn, Pb)
287.2 .Heterocyclic (only N, O, S, Se, Te)
287.21 ..Two hetero ring atoms
287.22 ..Epoxy ring containing
287.23 .O-containing organic compound
287.24 ..Carbonyl group containing
287.25 ...N containing
287.26 ..Hydroxy group containing or alcoholate
287.27 .Halogen containing
287.28 ..Organic halide
287.29 .Phosphorus or nitrogen containing
287.3 ..Nitrogen containing
287.32 .Sulfur containing
287.34 .Silicon dioxide containing
287.35 .Miscellaneous

MATERIALS OR INGREDIENTS
400 .Pigment, filler, or aggregate compositions, e.g., stone, shale, pebbles, rock, etc.
401 ..Composition contains identified material other than water
402 ...Lake containing
403 ...Elemental metal or alloy containing
404 ....Aluminum containing
405 ...Fly ash, coal ash, or bottom ash or derived therefrom
406 ...Cork, bark, vegetable shell, hull or cob or material derived therefrom
407 ...Organic refuse or waste material containing or derived therefrom
408 ...Alkali blue pigment containing
409 ...Hollow, porous or foam particle containing
410 ...Phthalocyanine or derivative containing

MATERIALS OR INGREDIENTS
.Pigment, filler, or aggregate compositions, e.g., stone, shale, pebbles, rock, etc.
..Composition contains identified material other than water
...Phthalocyanine or derivative containing
411 ....Mixed phthalocyanines or derivatives
412 ....Special process of milling, grinding, comminuting, plural stage or zone mixing or product
413 ....With organic compound
414 ...Ultramarines, e.g., ultramarine green, etc.
415 ...Mica, shell, scale, platelet, or lamellate
416 ....Clay containing or derived therefrom
417 ....Mica containing
418 .....Iron or bismuth compound containing (Fe or Bi)
419 ...Zinc compound containing (Zn)
420 ....Zinc sulfide containing
421 .....Lithopone (zinc sulfide + barium sulfate)
422 ......Metal compound other than barium or zinc containing
423 ......Subsequent treatment or product thereof
424 .....Calcium compound containing
425 ....Zinc oxide containing
426 .....Aluminum compound or silicon containing, e.g., clay, etc.
427 .....Sulfur or phosphorus containing
428 .....Titanium compound containing
429 .....Organic material containing
430 ....Titanium compound containing
431 ....Silicon or aluminum compound containing
432 ...Lead compound containing, e.g., litharge, etc. (Pb)
433 ....Lead chromate containing, e.g., molybdate orange, chrome yellow, etc.
434 .....Silicon containing
435 ....Silicon containing
436 ...Titanium compound containing (Ti)
437 ....Oxidation of titanium tetrahalide or product
438 ....Zirconium compound containing (Zr)
439 ....Iron, tungsten, molybdenum, or cerium compound containing (Fe, W, Mo, Ce)
440 ....Nickel, cobalt, copper, or cadmium compound containing (Ni, Co, Cu, Cd)
441 ....Antimony, chromium, arsenic, or tin compound containing (Sb, Cr, As, Sn)
442 ....Aluminum compound or silicon containing
443 .....Phosphorus containing
444 .....Alkali or alkaline earth metal containing
445 .....Organic material containing
446 .....Silicon containing
447 ....Organic material containing
448 .....Organic nitrogen containing material
449 ....Alkali or alkaline earth metal containing
450 ...Zirconium compound containing (Zr)
451 ....Vanadium or praseodymium containing (V, Pr)
452 ...Cadmium compound containing (Cd)
453 ...Chromium compound containing (Cr)
454 ....Silicon containing
455 ...Antimony containing (Sb)
456 ...Iron compound containing (Fe)
457 ....Silicon containing, e.g., slag, turkey umber, Fullers earth, etc.
458 ....Compound containing carbon triple bonded to nitrogen, e.g., prussian blue, iron blue, etc.
459 ....With other metal compound
460 ....Organic material containing
461 ...Alkaline earth metal compound containing, other than glass, e.g., ettringite, gypsum, barium sulfate, anhydrite, etc.
462 ....Phosphorus or boron containing
463 ....Carbonate containing
464 .....Calcium containing, e.g., calcite, dolomite, chalk, whiting, etc.
465 ......Organic material or silicon containing
466 ....Soil or inorganic silicon compound containing, e.g., granite, chrysotile, asbestos, etc.
467 .....Aluminum compound containing, e.g., zeolites, perlite, etc.
468 ......Clay or material derived from clay containing, e.g., bentonite, montmorillonite, etc.
469 .....Talc, e.g., soapstone, etc.
470 .....Calcium silicate, e.g., dicalcium silicate or silicate hydrate, tobermorite, wollastonite, etc.
471 ....Organic material containing
472 ...Elemental carbon containing, e.g., carbon black, etc.
473 ....Sulfur containing, treatment therewith or product
474 ....Metal compound containing
475 ....Silicon containing
476 ....Organic material containing, e.g., wax, paraffin, etc.
477 .....Fat, oil, higher fatty acid or derivative, e.g., tallow, mineral oil, essential oils, salts, amides and esters of fatty acids, soap, etc.
478 ....Oxidation of carbon black or product thereof, e.g., treating of carbon black to increase volatile content or to lower pH, etc.
479 ...Bismuth, vanadium, molybdenum, or tungsten compound containing (Bi, V, Mo, or W)
480 ...Cobalt, nickel, or copper compound containing (Co, Ni, or Cu)
481 ...Silicon containing
482 ....Inorganic silicon compound, e.g., diatomaceous earth, soil, glass, sand, etc., or material derived therefrom
483 .....Aluminum compound containing, e.g., feldspar, mullite, etc.
484 ......Special process of milling, grinding, crushing or comminuting or product
485 ......Special process of pelletizing or agglomerating or product
486 ......Clay or material derived therefrom containing
487 ....Organic material containing
488 ....Bleaching treatment or product
489 .....Glass containing
490 .....Organic silicon material containing
491 .....Organic material containing
492 .....Treatment of alkali silicate with mineral acid or product
493 ...Organic pigment containing
494 ....Mixed pigments containing
495 .....Quinacridone pigment or derivative
496 ....Pigment containing -N=N- group

MATERIALS OR INGREDIENTS
.Pigment, filler, or aggregate compositions, e.g., stone, shale, pebbles, rock, etc.
..Composition contains identified material other than water
...Organic pigment containing
497 ....Quinacridone pigment or derivative
498 ....Ring containing atom other than carbon
499 ...Organic material containing
500 ....Rosin, natural resin or derivative, e.g., shellac, dammar, colophony, turpentine, etc.
501 ....Carbohydrate, protein, gum, or lignin, e.g., pectate alginate, albumin, glue, etc.
502 ....Wax, paraffin, bituminous material, asphalt, oil shale, tar or pitch containing
503 ....Sulfur or phosphorus containing
504 ....Fatty, oil, higher fatty acid or derivative e.g., tallow, mineral oil, essential oils, salts amides and esters of higher fatty acids, soaps, etc.
505 ....Carboxylic acid or derivative, e.g., tannin, etc.
506 ....Ring containing atom other than carbon
310 .Driers
311 .Vehicles or solvents
312 .Opacifiers for enamels
313 .Ceramic fluxes
819 .Additive materials for inorganic cements which contain a hydraulic settable material
820 ..Expanding, foaming or porosity producing additive
821 ..Protein containing additive
822 ..Wax, tallow, oil, natural resin or higher fatty acid or salt, amide, or ester thereof containing additive (e.g., rosin, tall oil, hydrocarbon oil, etc.)
823 ..Organic material containing additive (e.g., carbohydrate, bituminous material, etc.)
316 .Miscellaneous

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CROSS-REFERENCE ART COLLECTIONS RELATING TO

****

900 SOIL STABILIZATION
901 LOW MOLECULAR WEIGHT HYDROCARBON POLYMER-CONTAINING MIXTURE

****

CROSS-REFERENCE ART COLLECTION RELATING TO SUBCLASSES 169 THROUGH 198

****

902 WITH FILLER, DYE OR PIGMENT
903 .Inorganic pigment
904 .Organic pigment

****

DIGESTS

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DIG 1 Fly ash
DIG 2 Perlite
DIG 3 Mica
DIG 4 Bentonite
DIG 7 Asphalt binders in coating compositions

CLASS 108 HORIZONTALLY SUPPORTED PLANAR SURFACES

DECEMBER 1990

1	TILTABLE SURFACES
2	.Biased
3	.Sectional
4	.About plural axes
5	.With horizontal adjustment
6	.Pivotally adjustable about horizontal axis
7	..Mechanical actuator tilts surface
8	..Oppositely tiltable with respect to horizontal plane
9	..Surface adjusting link spaced from axis
10	...Vertically adjustable axis
11	CONVERTIBLE
12	.Reorientatable support
13	.Alternately usable surfaces
14	.Receptacle
15	.Vertical surface
16	.Rack support
17	.Multiplanar to coplanar position
18	.Support becomes inoperative
19	..Alternately usable legs
20	POWER DRIVEN
21	.Intermittent drive
22	.Along circuitous path
23	WITH ILLUMINATION MEANS
24	WITH DRAIN
25	WITH RECEPTACLE
26	.Detachable or relatively movable
26.2	..Inkwell
27	WITH PERIPHERAL GUARD
28	WITH DIVERSE SUPPORT FOR ARTICLES
29	.Rod or bar
30	..Hook
31	..Superposed
32	.Inclined surface
33	WITH HOUSING
34	.Formed by collapsible surface
35	..Surface and support pivotally interconnected
36	...Paired legs
37	.Counterbalanced surface
38	.Surface forms closure
39	.Surface adjusts to plural operative positions
40	.Surface slidably hinged to housing wall
41	.Formed from support
42	WITH STRUCTURAL INSTALLATION
43	.Body related
44	.Vehicle supported
45	..Instrument panel
46	..Support enters window recess
47	.On top and side of upright wall
48	.Having wall and floor relationship
49	.Bed supported
50	COMBINED
51.1	INDUSTRIAL PLATFORM
51.3	.Formed from folded semi-rigid material (e.g., cardboard, etc.)
52.1	.Handler entry between load and support
53.1	.Stacking
53.3	..Nesting
53.5	..Tiering
54.1	.Adjustable
55.1	.With load-confining means
55.3	..Support surface having article engaging projection or recess
55.5	..Means for receiving load hold down means
56.1	.Knockdown or setup
56.3	..Support element attachable to or separable from support surface
57.1	.Invertible
59	PLURAL RELATED HORIZONTAL SURFACES
60	.With partition
61	..Horizontally adjustable
62	.Invertible surface
63	..Superposed sections convert to coplanar sections
64	.Laterally connected individual units
65	.Coplanar extension surface
66	..Circular segment
67	..Flexible material or hingedly interconnected slats or panels
68	...Guided in arcuate path
69	..End leaf
70	...Surface lowers into coplanar position with leaf
71	...Elevating mechanism
72	....Link
73	....Cam and slide
74	.....Also moves principal surface
75	.....Cam slot
76	...Elevatable
77	...Drop leaf
78	....Leaf supports moves in plane parallel to primary surface
79	.....Supports includes leg
80	....Diagonal brace
81	.....Toggle-type
82	.....With trip mechanism
83	..Intermediate leaf
84	...Elevating mechanism
85	....Responsive to end section movement
86	...Concealed in stored position
87	...With equalizer for opposed end section movement
88	...Divided pedestal supports end sections
89	...End sections secured mutually or to insert
90	.Detachable enlarging or substitute surface
91	.Nested or stacked units
92	.Terraced
93	..One surface concealed beneath another surface
94	..Rotatable
95	...Vertically adjustable
96	..Vertically adjustable
97	..Detachable surface clamped to stationary surface
98	...Clamping leg
99	..Folding
100	...Opposite edges of surfaces vertically aligned
101	..With separable components
102	.Horizontally adjustable
103	..Rotatable about vertical axis
104	...Inner section rotates relative to fixed outer section
105	...Vertically adjustable
106	.Vertically adjustable
107	..Removably mountable in plural positions
108	...Cantilever support
109	....Support members face each other
110	...Interlocked with surface configuration of support
111	.With separable or folding components
112	..Hingedly sectioned surface
113	...Leg and surface sections collapse concurrently
114	..Laterally interconnected coplanar surfaces
115	FOLDING
116	.With vertical adjustability
117	..Sliding pivot connects surface and support
118	.Mutually pivoted crossed legs supports surface
119	..Surface pivoted to one, separably supported on other
120	..Sliding pivot connects surface and leg

FOLDING
121 .All legs pivot toward common surface edge
122 ..On common axis
123 ..Conjointly actuated by interconnected brace
124 .Surface separably supported by means spaced from fixed pivot
125 .Legs pivot perimetrically of surface
126 ..Conjointly
127 .Legs pivotally converge toward surface center
128 .Folding arms support surface
129 .Legs fold axially parallel to surface edges
130 ..Paired legs conjointly actuated
131 ..Releasable means holds paired legs in predetermined position
132 ...Legs folded adjacent surface
133 ...Spring biased
134 .Laterally attached surface
135 ..Detachable assembly
136 BIASED SURFACE
137 HORIZONTALLY ADJUSTABLE
138 .Concurrent horizontal and vertical movements
139 .Rotates about vertical axis
140 ..And moves lineally
141 ..Vertically adjustable
142 ..With means to limit or inhibit rotation
143 .Mounted on slide-and-guide
144 VERTICALLY ADJUSTABLE
145 .Articulated link shifts surface
146 .With biased holding means, e.g., latch
147 .With force multiplying means
148 .Holding means cooperates with smooth face
149 SUPPORTING STRUCTURE EXTENDS UPWARDLY OF SURFACE
150 PEDESTAL SUPPORTED
151 SURFACE MEMBER EMBRACES SUPPORT
152 ATTACHED LATERALLY OF SUPPORT
153 WITH SEPARABLE COMPONENTS
154 .Surface and support interlocked by spaced detachable constrainer
155 .Surface secured to leg-connecting parallel member
156 .Independent legs support surface
157 .Surface separable from support entity
158 ..Threaded connection
159 ..Surface vertically removable, horizontally immovable
160 SURFACE WITH BRACED HINGED LEG
161 MISCELLANEOUS
****
CROSS-REFERENCE ART COLLECTIONS
****
901 SYNTHETIC PLASTIC INDUSTRIAL PLATFORM (E.G., PALLET, ETC.)
902 .Made with deformable integral fastening elements

CLASS 109 SAFES, BANK PROTECTION AND RELATED DEVICES

DECEMBER 1990

1 R	MISCELLANEOUS
1 S	..Shelter (e.g., bomb)
1 V	..Safe or vault ventilation
2	BANK PROTECTION DEVICES
3	.Trapping mechanisms
4	..Counter type
5	..With protected transaction partitions
6	..Plural closures
7	...Interrelated fastening means
8	...Rotary plural blade closure
9	.Guard booths
10	.Safety transaction and display partitions and counters
11	..With movable protective shields
12	...Plural shields
13	....For plural openings or partitions
14	...Roller type
15	...Strip or slat type
16	....Axially pivoted
17	...Sliding
18	....Gravity shield
19	..With deal trays
20	..With fluent material releasing, generating and/or distributing means
21	..With alarm, signal or indicator
21.5	..Protected voice transmitting path
22	CONVERTIBLE
23	COMBINED
24	.With jackets
24.1	.Depository with verification indicia applying means
25	.With marking devices
26	.With means to prevent successful use of explosives
27	..Pressure relief mechanism
28	..With drain or sump
29	.With fluent material releasing, generating and/or distributing means
30	..With auxiliary lock
31	..With alarm, signal or indicator
32	..With operator and/or controller
33	...Fusible, combustible or thermal actuator
34	..Shock broken
35	.With electrical surface charging means
36	.With explosive devices
37	..Wall contained detonator
38	.With alarm, signal or indicator
39	..Movable receptacle initiated
40	..Plural initiators
41	...Wall penetrating and closure movement initiators
42	..Wall penetrating initiated
43	..Closure movement initiated
44	..Lock or handle initiated
45	INCIDENTALLY MOVABLE SAFE OR COMPARTMENT
46	.With dumping mechanism
47	.Receding movement
48	.Revolving for interior access
49	.Complementary sections
49.5	SHIELDS AND PROTECTORS
50	SUPPORTS AND MOUNTINGS
51	.Detachable from interior only
52	.Lock to support
53	PLURAL COMPARTMENT
54	.With secret compartment
55	.With deposit means between compartments
56	.Plural safes
57	..Enclosed
58	WALL AND PANEL STRUCTURES, CLOSURES AND CLOSURE ADJUNCTS
58.5	.Port type
59 R	.With closure fastening means
59 T	...For rotatable closure
60	..Door ajar fasteners
61	..Combined boltwork and pressure mechanism
62	..Pressure mechanism
63	...With entrapping prevention means
63.5	..With means to render the closure fastening means ineffective
64	.Closures
65	..With discontinuous heat path
66	..Deposit type
67	..Plural
68	...Inner and outer
69	..Plural motions
70	...Sliding and swinging
71	...Rotary and axial movement
72	....Lug or interrupted thread type
73	..Sliding, rotary or oscillating movement
74	..With interfitting swinging closure and jamb parts
75	..With seals
76	..Composite
77	..Jamb
78	.Walls and panels
79	..With joints and connections
80	..Composite
81	...With movable parts
82	...Metallic and nonmetallic
83	....With metallic reinforcement in nonmetallic binder
84	....With nonmetallic filler
85	...Metallic
87	.Floor bridges

185 WITH CONTROL MEANS RESPONSIVE TO A SENSED CONDITION
186 .Feed control
187 ..Supplemental burner
188 ..Of noncombustible fluid, e.g., air, etc.
189 ...Pressure sensor
190 ...Temperature sensor
191 WITH PROGRAMMED OR CYCLIC CONTROL MEANS
192 .Timer
193 WITH SAFETY MEANS
194 CREMATORY
195 FORGE
196 STRAW BURNER AND FEEDER
197 .External structure detachable from firebox
198 LOCOMOTIVE
199 .Having noncombustible fluid feed means
200 ..And noncombustible fluid treatment means
201 ...Preheater
202 ..Undergrate feed
203 WITH EXHAUST GAS TREATMENT MEANS
204 .Recirculation means
205 ..Air supply means
206 ...Including pump
207 ....Eductor
208 .Furnace having multiple firebox
209 ..By undergrate means
210 .Afterburning means
211 ..Means directing main flame or combustion products for afterburning
212 ..Liquid or gaseous fueled
213 ...Swirl inducing
214 ..Including means to add air
215 .Means contacting exhaust gas with liquid
216 .Means separating particles from exhaust gas
217 ..Outlet screen
218 WITH FUEL TREATMENT MEANS
219 .Preliminary refuse treatment means
220 ..Sorter
221 ...Dewatering
222 ..Comminutor
223 ..Compactor
224 ..Dryer
225 ...Furnace with multiple hearth
226 ...Rotary drum type
227 ...Having means to effect or facilitate refuse movement
228 ....Mechanical conveying means
229 .Means for liberating gas from solid fuel
230 ..Coking means
231 ...Undergrate
232 .Means for pulverizing solid fuel
233 COMBINED
234 .With boiler
235 REFUSE INCINERATOR
236 .Means for cleaning by combustion
237 .For explosive or radioactive material
238 .For liquid refuse
239 .For stump in situ
240 .Vehicle mounted
241 .Portable
242 .Closed vessel
243 .Refuse suspended in or supported by a fluid medium
244 ..Suspended in a gaseous medium
245 ...Fluidized bed of noncombustible particles
246 .Rotary drum
247 .Rotary grate movable about a vertical axis
248 .Refuse supported above grate
249 .Reverberatory type
250 .With electric heater
251 .Including air supply means extending vertically within refuse
252 ..With supplementary burner
253 .With means shielding burner for refuse
254 .With air preheater
255 .With means for advancing or handling refuse or residue
256 ..Means for feeding through chimney
257 ..Continuous advance
258 ..Refuse agitating
259 ..Residue handling, e.g., ash, etc.
260 INCLUDING FLUID FUEL BURNER
261 .Powdered solid fuel
262 ..Alternate fuel
263 UTILIZING POWDERED FUEL
264 .Having rotary flow means
265 .Having secondary air mixing means
266 .With residue handling means (e.g., ash, etc.)
267 INCLUDING MEANS TO FEED SOLID FUEL
268 .Movable grate
269 ..Endless chain
270 ...Including air supply means
271 ....And chain seal
272 .....Between runs
273 ...Inclined run
274 ...Mobile support
275 ..Rotary
276 ...About horizontal axis
277 ...Conical type
278 ..Oscillatory
279 ...Manual actuation means
280 ...Multiple retort
281 ..Reciprocatory
282 ...Including power feed
283 ....Underfeed
284 .....Power feed perpendicular to grate
285 ..Raking bar type
286 .Power driven
287 ..Having circular grate
288 ...And forced air supply
289 ..Pusher ram
290 ...Parallel to grate
291 ....Inclined step grate
292 .Separate feed
293 .Supply hopper, e.g., magazine, etc.
294 ..Cage grate
295 HAVING MULTIPLE FIREBOX
296 .Including fluid supply means
297 INCLUDING NONCOMBUSTIBLE FLUID SUPPLY MEANS
298 .Hollow grate
299 ..Having flow controller
300 ...For forced air supply
301 .Having treatment means
302 ..Preheater
303 ...And furnace gas mixer
304 ...Remote from combustion chamber
305 ...Bridgewall
306 ...Water or steam
307 ....Below grate
308 ...Internal to or attachable to wall
309 ..And flow modifying means
310 ...Deflector
311 ....Grate mounted
312 .....Below grate
313 ...Feed nozzle
314 .Supplying through hollow bridgewall
315 DOWNDRAFT
316 .Grateless
317 INCLUDING FIREBOX
318 .Having arch
319 ..And flame shaper
320 ..Adjustable dimension firebox
321 ..Door arch
322 BAFFLE OR HEAT RETAINER STRUCTURE
323 .Refractory type

	BAFFLE OR HEAT RETAINER STRUCTURE
	.Refractory type
324	..Having concavity for engaging pipe exterior
325	...And structure to bridge pipes
326	.Metallic type
327	SOLID FUEL FEED STRUCTURE
328	.Movable grate
329	..Endless chain
330	...Having sprocket drive
331	ARCH OR ROOF STRUCTURE
332	.Planar surface area
333	..Inclined
334	...And convex surface area
335	.Concave surface area
336	WALL STRUCTURE
337	.Bridgewall
338	BRICK ELEMENT
339	.Having hanger
340	..And metal casing
341	PROCESS
342	.Treating fuel constituent or combustion product
343	..To prevent corrosion of furnace
344	..Combustion product
345	...Exhaust gas, e.g., pollution control, etc.
346	.Incinerating refuse
347	.Burning pulverized fuel
348	.Supplying fluid
101 R	FUEL FEEDERS
101 A	..Shiftable stoker
101 C	..Automatic control
101 CF	..Fuel control
101 CA	..Feeder responsive to fuel bed temperature
101 CB	..Feeder responsive to fuel bed pressure
101 CC	..Feeder responsive to fuel bed weight
101 CD	..Feeder responsive to fuel bed height
102	.Shavings and sawdust
103	.Boiler controlled
104 R	.Blower
104 A	...Locomotive distributor plates
104 B	...Burners per se
105	..Hopper
105.5	..Locomotive stroker type
105.6	...Underfeed to jet only
106	..Pulverizer
107	.Bridge wall
108	.Hopper
	..Pusher
109	...Reciprocating
110	...Screw
	.Spreader
111	..Carrier
112	...Door
113	..Oscillating
114	..Reciprocating plunger
115	..Rotary
	.Chute
116	..Door
117	...Multiple charge
118	.Vertical drop
119	SPARK ARRESTERS
120	.Furnace conductor
121	.Combined stack and smoke box
122	.Smoke box
123	..Draft regulator
124	..Divided
125	..Hood
126	..Vertical drum
127	..Ejector
128	..Water receptacle
129	..Discharge valve
145	SPARK AND SMOKE CONDUCTORS
146	.Train
147	DRAFT REGULATORS
148	.Separation of gases
150	.Steam injector
157	..Feeding air
158	...Door operated
	.Stack
159	..Portable
160	..Air jet
161	...Steam injected
162	.Fan exhaust
163	.Damper
165 R	ASH RECEIVING AND HANDLING DEVICES
165 A	..Fly ash disposers
166	.Ashpans
167	..Dumping
168	...Conjoined floor sections
169	...Reciprocating discharge valve
170	...Scraper
171	..Steam and water attachments
172	FRONTS
173 R	DOORS
173 A	..Soaking pit covers
173 B	..Explosion relief doors
173 C	..Compound doors
174	.Feeding air and steam
175 R	.Feeding air
175 A	...Automatic door dampers
176	.Operators
177	..Motor
178	..Pedal
179	.Fluid screens
	DOORS AND CASINGS
180	.Cooling
181	DOOR CASINGS AND ARCHES
182	.Feeding air
182.5	TUYERES
182.6	.Forge
184	SMOKESTACKS
349	MISCELLANEOUS

CLASS 111 PLANTING

100	PLANT SETTING
101	.Excavating transplanter
102	.Through mulch
103	.Laterally shifted to final position
104	.Plant dispensing (i.e., singulation from a bulk source)
105	..Supply in organized array
106	.Manually operated implement
107	..With furrow opener
108	..With irrigator
109	.Drilling machine (i.e., furrow opener)
110	..With irrigator
111	..Runner opener
112	..Rotating or orbiting opener
113	...Power operated
114	.Plant containing receptacle impressed into soil
115	.Dibbler
116	..Auger type
117	..Angled
118	LIQUID OR GAS SOIL TREATMENT
119	.Treating substance includes ammonia (e.g., flashing control)
120	.Drilling machines (i.e., furrow opener)
121	..Rotating or orbiting opener
122	...Power operated
123	..Chisel opener
124	..Shoe opener
125	..Runner opener
126	..Moldboard opener
7.1	.Hand manipulated
7.2	..Implement carried supply
7.3	...Work operated valve
7.4	...Non-gravity fluid feed
127	.Injector nozzle situated above soil surface
128	.Rotating dibble injector
129	.Multiple fluid treatment
8	DRILLING AND BROADCASTING
9	.Main and auxiliary frame machines
130	BROADCASTING
131	.Including powered tiller
132	..Material dispensed ahead of tiller
133	..Material dispensed behind tiller
11	.Machines with scatterer
12	..Main and auxiliary frame
13	.Main and auxiliary frame machines
14	DRILLING
15	.Hill-planting machines
16	..Check correcting
17	...With automatic regulator
18	..Frame and planting-element arrangement
19	...With tractive-belt feed drive
20	...Sectional main frame
21	....Break joint
22	...Main and auxiliary frame
23	....Rotary-marker operator
24	....Hopper-carrying auxiliary
25	..Depositing and marking mechanisms
26	...Powder marking
27	...Driving marking
28	....Revolving
29	...Driven marker
30	....Plunging
31	.....Hill covering
32	....Revolving
33	..Marking mechanisms
34	..Depositing mechanisms
35	...Interchangeably operable
36	...Primarily axle-driven
37	....Intermittently controlled
38	.....Check-wire tripped
39	......Both feeder and valve
40	......With wire-actuated valve
41	....With wire-actuated valve
42	...Endless-belt tripped
43	...Line-wire driven
44	....Reel carried
45	....Check-wire tripped
46	....Both feeder and valve
47	....Trip-fork mechanisms
48.1	....Guide
49	....Wire-end-anchoring devices
50	...Manually operated
51	...Accumulators
52	.Frame and planting-element arrangement
53	..Sectional main frame
54	...Flexible
55	....With auxiliary frame
56	....Break joint
57	...Extensible
58	....V-shaped
59	..Main and auxiliary frame
60	...Plurality of auxiliaries
61	....Unitarily controlled
62	...Floating auxiliary
134	....Gauge means for auxiliary frame
135	.....Rotating gauge means
136	......Packing means gauges opener
137	......Adjustable gauge wheels separate from packer
138	.....Sled frame
63	....Hopper carrying
64	.....Detachable
65	......Single row
66	....Tool-bar type
67	.....With lift and ungear
68	...With crank-axle lift
69	..With adjustable planter elements
70	..Rigid
71	...Single row
72	....Manually operated depositing mechanism
73	....Multiple depositing
74	....Revolving hopper
75	....Vibrating hopper
76	....Vibrating delivery chute
77	....Rotating dispenser
78	.....Axle mounted
79	.Single-row implements
80	..Multiple depositing
81	..Planter-element arrangement
82	..Hand propelled
83	.Lister units
84	.Drag-bar units
139	.Including trash control accessory
140	..Coulter
141	..Dozer (i.e., deflector)
142	...With tine
143	..Having holddown
144	.Including mulching accessory
145	..Harrow
146	...Spring tooth
147	.Including subsoiler (i.e., deep soil tiller)
148	..With furrow smoother
149	.Furrow opener
150	..Including dispensed material deflector
151	..Including trip mechanism
152	..Shoe opener
153	..Runner opener
154	..Boot opener (e.g., tooth or tine)
155	...Spring formed tool or standard
156	..Chisel opener
157	..Rotary opener
158	...Power rotated
159	....With tine
160	.....Rotatable about vertical axis
161	.....Material deposited into tiller operated zone
162	.....Material deposited behind tiller
163	...Disk
164	....Plural cooperating disk openers
165	.....Staggered arrangement
166	.....Scalloped or fluted
167	....Flat

DRILLING
.Furrow opener
..Rotary opener
...Disk
168 ....Dished
169 .....Scalloped or fluted
170 .Having depositor feature
171 ..Endless conveyor with traps
172 ...Chain
173 ..Screw conveyor
174 ..Fluid current conveyor
175 ...Flow divider head
176 ...Material speed reducing means
177 ..Rotating dispensing element
178 ...Roll or drum
179 ....Air pressure differential drum
180 .....Vacuum blocker rotates
181 .....Excess material remover
182 .....Protrusions on drum pheriphery
183 ...Plate type trap
184 ....Vertical
185 .....Air pressure differential
186 ..Plural depositors for disparate material
187 ...To various depths
188 ...At least one solid, one liquid
189 .Including seed tamper in furrow
190 .Furrow closer
191 ..Rotating furrow closer
192 ...Disk
193 ....Plural
194 ...Packer wheel
195 ....Plural
196 .....Pinch adjustment
197 ..Drag
198 ...Chain
89 DIBBLING
90 .Revolving-hopper implements
91 ..Revolving-dibble-carrier implements
92 .Manually-operated implements
93 ..Machine attached
94 ..Spacing in hill
95 ..Regulated discharge
96 ...Sliding-plunger control
97 ..Multiple-staff control
98 ..Footplate control
99 .Dibbles
199 SEED TAPE PlANTER
200 MISCELLANEOUS

****

CROSS-REFERENCE ART COLLECTIONS

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900 METHODS OF PLANTING SEEDS AND MISCELLANEOUS COMPOSITIONS
901 LAWN OR TURF
902 .Pasture renovation
903 MONITOR
904 .Population control function
905 SEED TREATING SEED PLANTER
906 SPECIALIZED COMMODITY
907 .Cane
908 .Potato
909 .Bulb
910 ..Onion
911 .Rice
912 .Pineapple
913 .Vegetable (i.e., small seed)
914 ..Lettuce
915 SPECIAL CONDITION
916 .Seed pellet
917 .Gel
918 .Sprout
919 SPECIAL TRANSPLANT RELATED FEATURE
920 AIRPLANE
921 UNIQUE MOTOR DRIVE
922 VARIABLE DRIVE MECHANISM
923 INTERROW, INTERCROP PLANTER
924 MINIMUM AND NO TILL PLANTER
925 TANK AND HOPPER TRAILERS
926 SPECIAL SUSPENSION OR GAUGING FEATURE
927 PARALLELOGRAM MOUNTING

CLASS 112 SEWING

400	PRODUCTS
401	.Uniplanar sectional web, sheet or layer
402	.Sewn web or sheet
403	..Including decomposable thread or component
404	..Including feathers, beads or reflective material
405	..With longitudinally non-coextensive super-imposed panel or sheet
406	..Including external fastener sewn thereto
407	...Hook and/or eye
408	...Button
409	..Fringed
410	..Tufted or looped surface
411	...With tufts or loops formed by floating strand-like portions
412	..Of strands or strand portions joined by sewing
413	..Elastic strand or component
414	...Including non-planar component
415	..Specific strand arrangement or relationship
416	...Knitted, netted or knotted
417	..With strip, strand or strand portion between layers or components
418	..With strip sewn in or over seam or over edge (e.g., welt or stay)
419	...Channel-shaped edge binding
420	..Fibrous or particulate layer between other layers
421	..Including component of varying thickness
422	..Non-planar uniform-thickness material
423	...Bent flange or reverse fold at edge
424	....Including concealed or blind stitching
425	.....Overedge or along offset fold
426	....Included in seam joining contiguous components
427	...Pleated, tucked or shirred
428	...Plural components
429	..Filamentary material or strand-like tape sewn to surface
430	...Interlooped floating strands or strand portions
431	...Around aperture (e.g., buttonhole)
432	...Connecting parallel straight lines of stitching
433	....Included in overedge stitching
434	....Uniting contiguous components
435	.....Plural intersecting float threads
436	...Incorporated with or held by overedge stitching
437	..Apertured or open-work (e.g., buttonhole)
438	..Chain stitch
439	..Ornamental stitching (e.g., embroidery)
440	..United components
441	...By stitching along edge
2	SPECIAL MACHINES
2.1	.Mattress sewing
2.2	..Tufting
4	.Jacquard card sewing
6	.Broom sewing
7	.Carpet sewing
8	..Clamps
9	.Rug sewing
10	.Bag sewing
11	.Sewing filled sacks
12	.Sewing hats
13	..Work supports
14	...Rotary
15	..Guides and pages
16	.Glove and fur sewing
17	..Dyeing feature
18	..Work holding and feeding
19	...Clamp
20	..Guiding
21	.Book sewing
22	..Knotting
23	.Straw braid
24	.Straw sewing
25	.Looped fabrics
26	..Preparing
27	..Work holding and feeding
28	.Leather sewing
	..Shoe sole
29	...Separating and indenting
30	...Tack pulling
31	...Fair stitch
32	...Loop lock
33	...Tongue lock
34	...Chain stitch
35	....Curved needle
36	...Lock stitch
37	....Curved needle
38	.....Oscillating and rotating shuttle
39	...Back gauges and rests
40	...Guards
41	..Heating
42	..Waxing
43	..Lubricating and moistening
44	..Welt slitting and beveling
45	..Channeling
46	..Welt handling
47	..Feeding
48	...Awl
49	...Needle
50	..Channel guides
51	..Edge and crease guides
52	..Welt guides
53	..Chain stitch
54	..Lock stitch
	..Thread handling
55	...Orbital-movement loopers
56	...Cast-offs
57	...Take-ups
58	...Pull-offs
59	...Tensions
60	..Presser devices
61	...Locking
62	..Work supports
63	.Tube forming
64	.Fringe forming
65	.Buttonhole
66	..Eyelet making
67	..Start and stop mechanism
68	..Cutting
69	..Thrum mechanism
70	..Clamp feeding
71	...With rotatable needle bar
72	...Right line and rotary
73	...Vibrating needle
74	...Spreading
75	...Gauging
76	...Clamps
77	...Attachments
78	.Embroidering
80.01	..Tufting (replacing subclass 79)
80.02	...Rooting hair in doll or wig
80.03	...Hand implement
80.04	....With power drive
80.05	....Having hollow or channelled needle
80.06	....Having non-eyed needle
80.07	...Yarn manipulation by fluid flow
80.08	....Having hollow needle
80.15	...Dual sided
80.16	...Including hollow or channelled needle
80.17	...Including non-eyed needle
80.18	...With condition responsive stop motion means
80.23	...With optical, electronic, or magnetic pattern program means
80.24	....Having pattern drum

	SPECIAL MACHINES
	.Embroidering
	..Tufting (replacing subclass 79)
80.3	...With specific fabric supporting, manipulating, cutting, or treating means
80.31	....Means to shift fabric laterally of feed
80.32	....Means to feed fabric
80.33	....Fabric vertically moveable at tufting position
80.4	...Including specific needle supporting or manipulating means
80.41	....Means to shift needle laterally of fabric feed
80.42	....Means to vertically adjust stroke
80.43	....Means to selectively drive one of plural needles
80.44	....Means to disconnect needle and drive
80.45	....Supporting structure
80.5	...Including specific loop catcher
80.51	....Bill with clip or gate
80.52	....Plural loop catchers having different shapes or orientations
80.53	.....Stationary relative to one another
80.54	....Variable height loops
80.55	....With loop cutting means
80.56	.....Selective cutting means
80.57	.....Rotary cutter
80.58	.....Knife pivots on loop catcher
80.59	.....Cutting means stationary relative to loop catcher
80.6	.....Including supporting structure (e.g., knife block)
80.7	...Including specific yarn manipulating, cutting, or treating means
80.71	....Cutting or treating means
80.72	....Feed via intermeshing slats
80.73	....Feed roller
81	..Hemstitch
82	...Universal feed
83	..Horizontal needle
84	...Pattern controlled
85	....Boring
86	....Fabric shifting
87	...Stopping
88	...Article attaching
89	...Boring
90	...Fabric shifting
91	....Balancing
92	....Spring
93	...Stitch forming
94	....Short thread
95	....Shuttle type
96	....Thread take-up
97	....Thread tension
98	..Vertical needle
99	...Attaching ornaments
100	....Thread
101	.....Attachments
102	...Fabric shifting
103	....Frames
104	.Article attaching
105	..Hook and eye
106	...Feeding
107	...Carriers
108	..Eye-shank button
109	...Vibrating needle
110	..Flat button
111	...Vibrated needle
112	...Vibrated clamp
113	..Feeding
114	..Clamps
115	..Attachments
116	.Crocheting
117	.Quilting
118	..Fabric shifting
119	...Frames

120	.Infolding
121	.Darning
121.11	.Pattern controlled or programmed
121.12	..Work carrier and support
121.13	.Stitch control
121.14	.Traveling
121.15	.Work carrier and support
121.16	.Tuft making
121.17	.Feather sewing
121.18	.Spiral feed
121.19	.Stringing
121.2	.Lacing or whipping, e.g., covering rings
121.21	.Sewing hemp-sole shoes
121.22	.Neckties
121.23	.Upholstery
121.24	.Circular line of stitch
121.25	.Stitch marking
121.26	.Fabric tensioning
121.27	.Elongated articles, e.g., belt, waistband and belt loop
121.28	.Spherical object, e.g., baseball cover sewing
121.29	.Completed-work handling
	WORK MANIPULATING
122	.Trimmers
122.1	..Having specified stitching mechanism
122.2	...Pinker
122.3	..Rotary cutter
122.4	...Pinker
125	..Manual control
126	..Laterally adjustable
127	..Ply separating
128	..Needle-bar operated
129	..Cutters
130	.Severing
131	.Creasers and markers
132	.Rufflers and gatherers
133	..Smocking
134	..Attachments
135	...Vibrating blade
136	.Guides
137	..Binders
138	...Strip reversing
139	..Braiders and corders
140	..Blind stitch
141	..Hemmers
142	...Lap seam
143	...Adjustable
144	..Tucking
145	...Box plait
146	...Spacing
147	..Folding
148	..Fabric holding
149	..Fringe turning
150	..Pressure
151	..Presser bar attached
152	..Strip
153	..Edge
154	STITCH FORMING
155	.Multiple machines
156	.Knot tying
157	.Zigzag
443	..Vibrating needle
159	...Shifting looper
444	...Having indicator
445	....And specified electronic memory
446	...Closed pattern sewing (e.g., buttonhole)
447	....Including electronic memory
448	....Having cam actuation of needle or material feed
449	.....And means to change, without operator intervention, stitch width or material feed
450	...Basting stitch or skipping stitch
451	...Backstitch
452	...Having multiple needles

	STITCH FORMING
	.Zigzag
	..Vibrating needle
453	...Having electronic memory
454	....Plural diverse patterns in series
455	....Having computer control of linkage intermediate motor and needle or material feed
456	....Including means to calculate needle or material feed parameters
457	....Including programmable or detachable memory
458	....Including pattern selection means
459	...Having cam actuation of needle or material feed
460	....Including detachable cam
461	....And specified material feed
462	.....And fine adjustment of stitch width or material feed
463	.....And plural, selectively used cams
464	....Including fine adjustment of stitch width
465	....Including plural, selectively used cams
466	.....And plural followers
467	...Having specified looptaker structure
160	..Surging
161	..Purling
162	.Overseaming
163	.Multiple needle
164	..Shuttle type
165	..Chain and double chain
166	...Multiple looper
167	..Adjustable
168	.Convertible
169	.Hand implements
170	.Short thread
171	..Double-pointed needle
172	..Overedge
173	.Running stitch
174	..Crimping
175	..Stationary needle
176	.Blind stitch
177	..Overseaming
178	..Work handling
179	.False hemstitch
180	.Bobbin ejector
181	.Revolving-hook type
182	..Timing
183	..Reciprocating bobbin
184	..Vertical axis
185	.Shuttle type
186	..Shuttle replenishing
187	..Loop spreaders
188	..Bobbin latch
189	..Rotary
190	...Timing
191	...Vertical axis
192	..Oscillatory
193	...Vertical axis
194	..Reciprocatory
195	...Longitudinal
196	..Holders and raceways
197	.Chain or double chain
198	..Hooked needle
199	..Oscillating or reciprocating looper
200	..Four-motion looper
201	..Rotating looper
202	..Vertical-axis looper
303	.Feeding work material
304	..By endless conveyor
305	..Under tension
306	..Having means to align work
307	..Work of indeterminate length
308	..Having curvate feature
309	...Capable of feeding through 360 degrees
310	..Needle and helper

311	..Clamp type
312	..Plural differential feed means
313	...Having adjustment feature
314	..Having adjustment feature
315	...Stitch length
316	....Reversible feed direction
317	...Reversible feed direction
318	...Rotary feed
319	...Intermittent feed
320	..Engaging upper side of work material
321	...Needle acts as feed means
322	..Rotary feed
323	..Four motion feed
324	..Feed dog structure
217	.Seam finishing
217.1	WITH TABLES OR STANDS
217.2	.For plural sewing units
217.3	.With power control or clutch
217.4	..Conversion of foot-treadle driven machine
270	ELEMENTS
271	.Starting or stopping
272	..Work sensing
273	..Thread sensing
274	..With element positioning
275	...Electrically operated
276	..Fluid operated or controlled
277	..Electrically operated or controlled
278	.Thread sensing
279	.Bobbin winding
280	.Cooling
281	..Needle
282	.Waste extraction
283	.Fly wheels
284	.Linkage systems
220	.Driving mechanisms
221	..Needle
222	.Needles
223	..Thread releasing
224	..Threading structure
225	..Setting and threading attachments
226	..Clamping
227	..Guiding
228	.Revolving hooks
229	..Bobbin tensioning
230	..Sectional
231	..Bobbin holders and casings
232	.Shuttles
233	..Tensioning
234	..Longitudinally reciprocating
235	.Presser devices
236	..Embroidering and darning
237	..Lifting
238	...With tension release
239	...Automatic
240	..Detachable connections
241	.Take-ups
242	..Pull-offs
243	...Automatic control
244	..Presser-bar controlled
245	..Needle-bar actuated
246	..Adjustable
247	..Resilient
248	..Rotary
249	..Stationary cam
250	..Clamp carrying
285	.Thread cutting, severing or breaking
286	..With thread wiping
287	..With thread disposal by air flow
288	..Thread chain
289	..Rotary type
290	..Hot wire type
291	..Upper and lower threads
292	...Single cutter
293	..Upper thread
294	...Scissors type
295	...Single blade cutter
296	..Lower thread

	ELEMENTS
	.Thread cutting, severing or breaking
	..Lower thread
297	...Scissors type
298	...Single blade cutter
299	..Manual control
300	..Electrically actuated
301	..Fluid actuated
253	.Thread end clamps
302	.Thread guiding or handling
254	.Tensioning
255	..Intermittent
256	.Lubricating
257	.Attachment holders
258	.Frames
259	..Heads
260	..Work supports
261	.Guards
262.1	METHODS
262.2	.Tubelike workpiece, e.g., hosiery, necktie, etc.
262.3	.Workpiece manipulated by mechanical means, other than straight-line feeding
263.1	.Headwear sewing
264.1	.Buttonhole or eyelet forming
265.1	.Article attaching
265.2	..Slide fastener or zipper tapes
266.1	.Ornamental stitching
266.2	..Pilelike fabric forming, e.g., tufting
267.1	.Blind stitch forming
268.1	..Overedge
269.1	.Overedge
1	MISCELLANEOUS
	******************************
	DIGESTS
	******************************
DIG 1	Suction thread cutting
DIG 2	Air work handling
DIG 3	Pneumatic

CLASS 114 SHIPS

DECEMBER 1990

255 FISHING VESSEL
256 FLOATING OR SEMI-SUBMERSIBLE STORAGE VESSEL
257 SUBMERGED STORAGE VESSEL
1 WARSHIPS
2 .Rams
3 ..Battering
4 .Floating batteries
5 .Turret
6 ..Combined elevating and rotary
7 ..Elevating
8 ..Rotary
9 .Armored
10 ..Deflectors
11 ..Belting and plating
12 ...Compound
13 ....Buffers
14 ..Screens and shields
15 .Concealment
312 SUBMERSIBLE DEVICE
313 .With disparate vehicle feature
314 .Underwater habitat
315 .Diver assistance device
316 .With weapon or weapon system
317 ..Having ballast compensating means
318 ..Power assisted deployment
319 ...Pneumatic or hydraulic dispatch
320 ..Having specific hatch structure
321 .Having storage hold
322 .Detachably connected to a main vessel
323 ..Emergency escape means
324 ...Chamber completely enclosed in the hull
325 ...Chamber nested in the hull
326 .Having buoy
327 ..And snorkel
328 ..With communication means
329 ..With indicator
330 .Having attitude control
331 ..Depth control
332 ...Diving plane
333 ...Water ballast
334 .Having air supply
335 .Having air locks
336 .Emergency equipment
337 .Having propulsion unit
338 ..Propeller
339 .Superstructure
340 ..With periscope
341 .Hulls with transverse reinforcement
342 .Hull within a hull
18 TORPEDO BOATS
19 .Spar
20.1 TORPEDOES
20.2 .With power plants
20.3 .With net cutting
21.1 .With external control
21.2 ..With remote control
21.3 .With homing means
22 .Separable sections
23 .Steering mechanism
24 ..Gyroscope
25 .Depth regulation
26 SCOWS
27 .Dumping and unloading
28 ..Sectional
29 ...Hinged
30 ...Separable
31 ..Platform
32 ...Tilting
33 ....Carriers
34 ...Conveyors
35 ...Side doors
36 ..Bottom doors
37 ...Flooding gates
38 ..Turnover
39.1 SAILBOAT
39.2 .Sailboard
40 ICE BREAKERS
41 .Rams
42 .Cutters
43 ICE BOATS
258 MOTHER SHIP, FLOATING LANDING PLATFORM, AND HARBOR
259 .Vessel carrier
260 ..Barge transport
261 .Aircraft
262 ..Seaplane
263 .Floating boat dock
44 VESSEL RAISING AND DOCKING
45 .Floating dry docks
46 ..Sectional
47 ..End gates
48 ..Elevators
49 .Camels, caissons, and pontoons
50 .Submerged
51 ..Hoisting
52 ..Air tanks
53 ...Camels, caissons, and pontoons
54 ...Inflatable bags
55 ..Sand and mud loosening
271 HULL OR HULL ADJUNCT EMPLOYING FLUID DYNAMIC FORCES TO DERIVE A LIFT OR ALTER TRIM, E.G., PLANING HULLS
272 .Having airfoil
273 ..Movably mounted
274 .Having hydrofoil
275 ..With control means responsive to sensed condition
276 ...Having feeler means
277 ...Having liquid pressure sensor
278 ..Ported strut or foil
279 ..With shock damping means
280 ..Having means to tilt or reposition foil or foil adjunct
281 ...Steerable foil
282 ...Having means to move foil to a retracted nonuse position
283 .Having laterally disposed skids or pontoons
284 .Movably mounted hull portion or hull adjunct
285 ..Trim tab or hull plate
286 ...With fluid motor
287 ....Expanding bladder
288 .Having fluid channeling or entrapping configuration
289 ..With fluid introducing means
290 ..Plural channels
291 .Stepped hull
292 .Pontoon structure
56 FORM
57 .Screw propeller type
58 .Paddle wheelers
59 .Spindle
60 .Canal and ferry boats
61 .Divided hull
62 .Concave bottom
63 .Flat bottom
343 BOATS, BOAT COMPONENT OR ATTACHMENT
344 .With wheeled buoyant landing or launching aid
345 .Inflatable
346 .Circular
347 .Canoe or kayak
348 .Lifeboat
349 ..Enclosed
350 ...With self-leveling passenger compartment
351 .Hunting
352 .Sectional
353 ..With folding
354 .Collapsible
355 .Hull construction
356 ..Metal
357 ..Plastic

	BOATS, BOAT COMPONENT OR ATTACHMENT
	.Hull construction
358	..Wood
359	..Former and framer
360	.With means to prevent capsizing or sinking
361	.Protective cover or shield
362	.Boarding aids
363	.Seat and foot support
364	.Deck or gunwale attachment
65 R	BUILDING
65 A	..Concrete ships
66	.Observation boats
67 R	.Antifriction surfaces
67 A	...Air and oil films
68	.Insubmergible vessels
69	..Linings and fillings
70	.Canal and ferry boats
71	.Cabins
72	.Freighters
73	..Bulk cargo
74 R	...Liquid
74 T	.....Floating tank
74 A	.....Double hull or insulated tank
75	...Antishifting devices
76	...Ceilings and floors
77 R	.Sectional
77 A	...Horizontal sections
78	.Bulkhead and compartment
79 R	.Iron
79 W	...Welded joint
80	..Corrugated
81	..Tubular
82	.Wood
83	.Bracing and staying
84	.Sheathing and planking
85	.Decks
86	.Calking and seaming
87	.Knees
88	.Joints
89	SPARS
90	.Masts and masting
91	..Swinging
92	..Cross and trestle trees
93	..Coats, shields, and steps
94	..Heads and irons
95	.Yards
96	..Trusses and parrels
97	.Gaffs, booms, etc.
98	..Pivoted
99	..Crotches and supports
100	.Spar irons
101	.Fair leaders and chocks
102	SAILS AND RIGGING
103	.Sails
104	..Reefing and furling
105	...Fore-and-aft sails
106	....Rolling
107	...Rolling
108	..Fastening devices
109	.Rigging screws and stretchers
111	.Running rigging
112	.Mast travelers
113	.Hoops and connections
114	.Cringles and hanks
115	.Clews
116	BULKHEADS AND DOORS
117	.Doors
118	..Automatic
119	...Sliding
120	..Sliding
121	BALLASTING
122	.Antirolling
123	.Floats
124	.Shifting weights
125	.Water tanks
126	.Fins and boards
127	CENTERBOARDS
128	.Steering
129	.Multiple
130	.Vertical drop and pivoted swing
131	..Sectional
132	.Pivoted
133	..Sectional
134	...Fan
135	..Lateral
136	..Lateral swing
137	..Lateral tilt
138	.Vertical drop
139	..Sectional
140	KEELS
141	.Vertical adjustment
142	.Bilge
143	.Rocking
144 R	STEERING MECHANISM
144 RE	..Electrical
144 A	..Remote control steering excluding manual operation
144 B	..Dynamic anchor
144 C	..Wind vane-operated
144 E	...Electric
145 R	.Speed retarders
145 A	...Trolling plates
146	.Auxiliary
147	.Paddles and wheels
148	..Channels
149	.Keel
150	.Fluid pressure
151	..Jet
152	.Fins
153	.Foot
154	.Wheel-shaft gearing
155	..Screw
156	...Intermediate gear
157	...Right and left
158	....Intermediate gear
159	..Segmental rack
160	.Wheel and drum
161	..Intermediate gear
162	.Rudders
163	..Multiple
164	..Auxiliary
165	..Hanging and shipping
166	..Tubular
167	..Sectional
168	..Jury
169	..Post bearings and heads
170	..Brakes
171	...Hydraulic
172	..Locks
365	LIFE CRAFT HANDLING DEVICE, APPARATUS, OR IMPLEMENT
366	.Moving from storage position to launching position
367	.Means for automatic launch upon sinking of ship
368	.Davit
369	..Movably mounted
370	...Compound movement
371	....Relative arcuate movement
372	....Translating and tilting
373	...Pivoting
374	....Vertical axis
375	.Chute or track
376	.Protector for lifecraft during launching
377	.Connector between boat and lowering tackle
378	..Releasing mechanism
379	...Automatic
380	...Simultaneously releasing bow and stern
264	FLOATING PLATFORM
265	.Multiple leg
266	.Float assembly
267	FLOAT STRUCTURE

173	PORTS
174	.Stoppers
175	..Gun port
176	..Hinged
177	.Light and air
178	..Hinged covers
179	HAWSE PIPES
180	.Stoppers and covers
181	.Friction rollers
182	SCUPPERS
183 R	BILGE DISCHARGE
183 A	..Wave motion
184	.Ejectors
185	..Ships motion
186	..Ash
187	SMOKESTACKS
188	FURNITURE
189	.Cabins and staterooms
190	.Life-preserver racks
191	.Self-leveling
192	..Berths
193	...Single pivot
194	..Chairs
195	..Tables
	VALVES
197	.Boat plugs
198	.Sea cocks
199	CABLE STOPPERS
200	.Chain
201 R	HATCHES AND COVERS
201 A	..Inflatable gaskets
202	.Sliding
203	.With fasteners
204	TRAVELERS
205	.Tension relievers
293	ANCHORING ARRANGEMENT
294	ANCHOR
295	.With means driving the anchor into the sea bed
296	.Suction type
297	.With dislodgement means
298	..Collapsible fluke
299	..By movable line connection
300	.Dished or mushroom type
301	.Fluke type
302	..Having stowable stock
303	..Having assembly or disassembly feature or replaceable or adjustable abutment
304	..Pivoted fluke
305	...Extensible
306	...Fork or aperture confining fluke
307	...Plural independently pivoted
308	...Knobbed shank
309	...Stock mounted on or juxtaposed to fluke
310	...With tripper
311	.Sea anchor
210	ANCHOR TRIPPERS
211	VENTILATION
212	.Valves
213	TENSION RELIEVERS
214	.Fluid
215	.Cable
216	.Couplers
217	..Safety release
218	BITTS, CLEATS, AND PIN RAILS
219	Fenders
220	.Roller
381	CHOCK OR LASHING
221 R	IMPLEMENTS
221 A	..Underwater cutting
222	.Hull cleaning
223	.Riggings
224	.Calking, paying, etc.
227	LEAK STOPPERS
228	.Interior
229	.Aprons, mats, etc.
230	MOORING DEVICES
231	.Ferry slip
232	OIL DISTRIBUTERS
233	.Ship structure
234	.Drags and floats
242	TOWING OR PUSHING
243	.Cable fairing
244	.Submerged object
245	..Having depth-control means
246	.Steering
247	.Having means responsive to excess strain
248	.Nested vessels
249	.Coupling means
250	..Boom type
251	..Flexible lashing
252	..Having trip mechanism
253	.Towing by means of cable
254	..With cable storage means, e.g., reels
268	WITH HOIST OR DECK ENGINE
269	MACHINERY ARRANGEMENT
238	TORPEDO LAUNCHING
239	.Outboard
240 R	TORPEDO GUARDS
240 A	..Underwater
240 B	..Pivotally attached
240 C	..Boat net
240 D	..Ship guard
240 E	..Barrier nets
241	.Nets
270	MISCELLANEOUS

CLASS 116 SIGNALS AND INDICATORS

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1	MISCELLANEOUS
2	COMBINED FUNCTIONS
3	.Horns with lamps
4	.Alarms with indicators
5	..Burglar or fire
6	.Burglar alarms
7	..Light producing
8	..Locks
9	...Door-knob controlled
10	....Combined knob and bell
11	...Detonating
12	..Door securing
13	...Braces
14	...Chain or link
15	...Detonating
16	..Sash fastening
17	...Detonating
18	CODE SIGNALING
19	.Ship's course
20	.Heliographic
21	SHIP'S TELEGRAPHS
22 R	PERIODIC
22 A	..Animal frightening devices
23	.Detonating
24	.Horns and whistles
25	.Bells
26	NAUTICAL
27	.Submarine
28 R	VEHICLE
28 A	..Curb feelers
28.1	.Transmission indicator
29	.Station indicators
30	.Car and train markers
31	.Steering-wheel-position indicators
32	.Collision-released identification tags
33	.Theft preventing
34 R	.Tire inflation or deflation
34 A	...Sidewall operated
34 B	...Internal protuberance operated
35 R	.Motion and direction
35 A	...Indicator movable about plural axes
36	..Combined with vehicle control
37	..Speed controlled
38	...Governor actuated
39	..Pneumatically operated
40	..Lazy-tong operated
41	..Fan type
42	..Window-exhibited sign or shutter
43	...Rotatable
44	...Sliding
45	..Movable cover or screen
46	..Rotatable
47	...Pointer
48	....Illuminated
49	...Illuminated casing
50	..Sliding
51	..Pivoted
52	...Laterally swinging arm
53	....Multiple arms
54	....Illuminated
55	.Pneumatic train pipe
56	.Vehicle-energy actuated
57	..Speed limit
58 R	..Pneumatic
58 A	....Parking brake actuated
59	..Diaphragm horns
60	..Bells
61	...Friction wheel
62	...Bicycle pedal
62.1	.Speedometer (e.g., odometer)
62.2	..With scale conversion (e.g., English-metric)
62.3	..With means to indicate range or set speed
62.4	..With diverse indicators
63 R	STREET TRAFFIC
63 P	..Portable
63 C	...Cone
63 T	...Triangle
64	ELEVATOR
67 R	ALARMS
67 A	..Reeled material end
68	.Elevator or hoist
69	.Rain
70	.Fluid-pressure variation
71	.Gristmill
72	.Poison container
73	.Operation counting
74	.Speed limit
75	.Burglar
76	..Till
77	..Portable
78	...Drop detonating
79	...Knob attached
80	...Key or keyhole
81	...Cord controlled
82	...Floor supported
83	...Detonating
84	...Pickpocket
85	..Closure operated
86	...Door and window
87	....Detonating
88	.....Reciprocating hammer
89	......Rotary release
90	....Gear and friction wheel
91	....Clockwork bell
92	.....Door knob
93	.....Automatic wind
94	.....Cable control
95	....Single-stroke bell
96	.....Door knob
97	....Door knob
98	..Tread operated
99	..Portable receptacle
100	.Closure operated
101	.Thermal
102	..Expansion control
103	...Fluid
104	..Ignition control
105	...Explosive
106	..Fusible control
107	.Buoy
108	..Whistling
109	.Liquid level
110	..Float
111	...Clockwork bell
112	.Fluid flow
113	.Shoal water
200	INDICATORS
201	.Methods
202	.Visual light signal
203	.Impact type
204	.Magnetically actuated
205	.By touch
206	.Chemically activated type
207	..By heat
208	.Element wear type
209	.By location
210	..Inflatable type
211	..Dye marker type
212	.Stress type
213	.Camera type
214	.By smoke or odor
215	.Gravity type
216	.Temperature responsive or compensating means
217	..Fusible substance
218	...With resilient or fluid pressure biased means
219	...With absorbing or diffusing material
220	..And fluid pressure indicator
221	..Bimetal element
222	.Game type
223	..Rotary
224	...With rectilinear indicator
225	..Rectilinear

	INDICATORS
226	.Elevator position
227	.Liquid level
228	..Float
229	...On pivoted arm
230	.Machine tool position
231	..Plural scales
232	...Scale conversion (e.g., English-metric)
233	.Machine tool variable transmission
234	.Page type
235	..With line indicator
236	...With resilient gripper
237	..With resilient gripper
238	..With means to secure to book back
239	..With means to secure to book cover
240	.Line indicator
241	.Frequency tuner type
242	..Plural scales and indexes
243	..Indicia on movable web
244	..Pipette type
245	..Rotary scale or index
246	...Projection type
247	....With color variations
248	...Plural scales
249	....On concentric axes
250	.....With illumination means
251	....With illumination means
252	...Drum structure
253	....With illumination means
254	...Single scale
255	....With plural groups of indicia
256	.....And illumination means
257	....With illumination means
258	.....Dish-shaped scale
259	..Rectilinear moving scale
260	..Hinged scale
261	..Rotary input to linear index movement
262	...Draw cord type
263	..With illumination
264	.Fluid flow
265	..At exterior of fluid-craft
266	..Pressure
267	...With magnetic means
268	...Differential
269	...Plural input with single readout
270	...Flexible indicator
271	...Rotary indicator
272	...Rectilinear indicator
273	..Movable means in flow path
274	...Rotary only
275	...Lever or cantilever
276	..Sight glass
277	.Valve position
278	.Flexible ribbon, band, or link with indicia
279	.Push-button type
280	.Diverse
281	.Rectilinear indicator with actuating means
282	..With rotary input means
283	..With rectilinear input means
284	.Rotary indicator with actuating means
285	..With rectilinear input means
286	..With illumination means
287	...Edge
288	....Pointer
289	..With means to change rate of movement of pointer
290	..Scale and pointer move during indication
291	..Including means to adjust index position (e.g., zeroing, etc.)
292	..Including means to adjust scale position
293	..Plural pointers, one of which moves the other (e.g., maximum-minimum, etc.)
294	..Including means to lock indicator in position
295	...Scale
296	..Including maximum and minimum indicating means
297	..Including stop means for pointer
298	..Disk with indicia
299	..Drum with indicia
300	..Plural indicators
301	...Coaxial pointers
302	...Including mask means
303	..Pivoted
304	..With scale reading aid
305	..Specified housing structure
306	.Operator movable
307	..With diverse art device
308	..Time scale
309	..Rotary indicator
310	...Illuminated scale
311	...Including means to restrain movement
312	....By resilient means
313	.....Pivoted indicator
314	.....Helical spring type
315	....By a protrusion in notch, slot, or gap
316	...Plural
317	....Indicia on contoured surface
318	....Indicia on flat surface of disk
319	...Tab, arm, sector, or pointer
320	....With scale
321	..Sliding indicator
322	...Flexible type
323	...With guide
324	....And means to restrain movement
325	..Peg type
326	...Piercing
327	.Index structure
328	..Pointer type
329	...Plural
330	...With balance means
331	...With angular adjusting means
332	...Specified shape
333	.Balance means
334	.Scale structure
335	..Color
336	..Frequency tuner type
337	..Drum type
137 R	HORNS, WHISTLES AND COMPRESSIONAL WAVE GENERATORS
137 A	..Supersonic wave generators
138	.Motor exhaust or suction
139	.Manually actuated air compressor
140	.Variable tone
141	.Chime
142 R	.Diaphragm horns
142 FP	...Fluid pressure operated
142 FV	....Using vacuum
143	..Rotary striker
144	...Toothed wheel
145	....Parallel diaphragm
146	...Ball contacts
147	SIRENS
148	BELLS
149	.Sound modification
150	.Swinging
151	.Pneumatic actuation
152	.Gong type
153	..Door knob contained
154	..Rotary
155	..Pivoted striker
156	...Multiple
157	...Multiple stroke
158	....Rotary striker
159	.....Lever operated
160	.....Plunger operated
161	....Escapement
162	.....Clockwork type
163	....Double

	BELLS
	.Gong type
	..Pivoted striker
164	...Spring impact
165	...Pull cord or rod
166	..Bicycle clamp
167	.Fixed, with pivoted striker
168	.Spiral-spring type
169	.Tube or rod type
170	.Animal and sleigh type
171	.Hand
172	.Bell pulls, cranks and push buttons
173	FLAGS AND FLAGSTAFFS
174	.Nonfouling
175	.Metallic flags
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	DIGESTS
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DIG 1	Combined with diverse elements
DIG 2	Corrections by cursor lines
DIG 3	Sniftable indicia
DIG 4	Variable pulley
DIG 5	Using light guides
DIG 6	Pointer structure
DIG 7	Fluid actuated
DIG 8	Inflatable indicator
DIG 9	Balloons
DIG 10	Bimetal detents
DIG 11	On ski binders
DIG 12	Door knockers
DIG 13	Inclinometers for earth working devices
DIG 14	Tapes as carriers
DIG 15	Projection
DIG 16	Road structure
DIG 17	Tactile
DIG 18	Wave generators
DIG 19	Wave generator with resonating element
DIG 20	Automobile transmission position
DIG 21	Shaft position indicators
DIG 22	Heated air
DIG 23	Movable index
DIG 24	With suction cups
DIG 25	Air filter condition indicator
DIG 26	Light rod
DIG 27	Blowout plates
DIG 28	Push button structure
DIG 29	TV tuner
DIG 30	Remote TV tuner
DIG 31	TV channel selector
DIG 32	Content indicator by weight
DIG 33	Indicator for elevated cables
DIG 34	Tension indicating
DIG 35	Electroluminescent dials
DIG 36	Illuminated dial and pointer
DIG 37	Multiple movable scales
DIG 38	Hot box alarm
DIG 39	Dial magnifiers
DIG 40	Flare devices
DIG 41	Color comparison
DIG 42	Oil filter
DIG 43	Navigation devices
DIG 44	Portable personal alarms
DIG 45	Parallax
DIG 46	Interchangeable scales
DIG 47	Scale conversion, e.g., English-Metric

663	CONTROL MEANS RESPONSIVE TO A RANDOMLY OCCURRING SENSED CONDITION
664	.Sampling of associated base
665	.Condition of coated material
666	.Temperature responsive
667	..Of coating material or applicator
668	.Responsive to attribute, absence or presence of work
669	..Selective application at a specific position
670	..Defect in the workpiece sensed
671	..Proximity of work to electrically charged applicator sensed
672	..Running length work
673	...Edge of running length of web material sensed
674	...Having means to sense speed of running length of work
675	..Removal of article sensed
676	..Presence of work at or passage of work through coating station sensed
677	...With means to remove or to prevent depositing of excess coating material
678	....by means to interpose barrier
679	...Having means to control coating application
680	....By means to initiate movement of applicator or applicator adjunct
681	.....By means to move applicator or applicator adjunct from inoperative position to operative position
682	....By means controlling the operation of a timing means
683	....Of a pump
684	....Of a valve
685	.....Fluid motor actuated
686	...by means to control conveyor operation
687	....By means to intermittently advance conveyor
688	.Responsive to condition of coating material
689	..Concentration of coating material in carrier medium
690	...During application
691	...Photoelectric sensor
692	..Pressure responsive
693	..Means to raise coating material to a predetermined level inside an enclosed container
694	..Level of supply
695	INTERFACING CONTROL OF PLURAL OPERATIONS
696	PROGRAM, CYCLIC, OR TIME CONTROL
697	.Having prerecorded program medium
698	.Having selection means for alternate operational sequences
699	.Having timer
700	..Timing motor with cam or disk
701	...Notched rotating disk
702	..Sequential timing of plural operations
703	..Time delay means
704	.Sequential energization of plural operations
705	.Having means to reverse operation at end of travel path
706	.Cyclic operation of singular element
707	INTERCONTROL OR SAFETY INTERLOCK
708	CONDITION RESPONSIVE CONTROL
709	.Responsive to diameter of wound material spool
710	.Valve actuator
711	..Integral actuator extends through or is formed on valve seat
712	WITH INDICATING, TESTING, INSPECTING, OR MEASURING MEANS
713	.With means for visual observation
714	.With means to return indicator to zero point
13	EDIBLE BASE OR COATING TYPE
14	.Stringing or decorating of coating
15	.With cutting of work
16	.Plural coating devices
17	.With apparatus cleaning or conditioning
18	.Solid means acting on coating after application
19	.Tumbling particulate work (i.e., rumble)
20	.With work drying, cooling, heating or noncoating gas contact
21	..To remove or spread applied coating by gas blast
22	.With vibration of work
23	.Combined
24	.Projected of forced flow of coating material
25	..Intermittent
26	.Immersion
27	..Superposed hopper or liquid column
28	..Moving coating container or tank
29	..Liquid coating supply and/or discharge to or from coating container
30	..Means for moving work into, through or out of coating
31	.Drain troughs or implements
31.5	BODY MEMBER PRINTING TYPE (E.G., FINGER PRINTING)
32	WITH FOLDING, UNFOLDING OR FESTOONING
33	WITH STRETCHING OR TENSIONING
34	.Transverse
35	WITH CUTTING, PUNCHING OR TEARING OF WORK
36	.Strand form work
37	.Web or sheet work
38	..Slitting
39	...And cut off
40	..Cut off
41	...Pivoted cutter
42	...Reciprocating cutter
43	...By tearing
44	WITH MEANS TO DEFORM WORK
45	COATED SURFACE PROTECTING MEANS, E.G., SLIP SHEETS
46	WITH PRINTING
47	CARBONIZING, FLAME CONTACT OR BURNING OFF OF COATING INGREDIENT
715	GAS OR VAPOR DEPOSITION
716	.Means to coat or impregnate particulate matter
717	.Object embedded in particulate mass
718	.Running length work
719	.Multizone chamber
720	.Having means to expose a portion of a substrate to coating medium
721	..Substrate contacting mask
722	.With treating means (e.g., jarring)
723	..By means creating additional electric field
724	..By means to heat or cool
725	...Substrate heater
726	.Crucible or evaporator structure
727	..Movable crucible
728	.Work support
729	..Moving work support
730	...Rotary
731	....Inverting
732	...Porous
733	.Chamber seal
50	WITH VACUUM OR FLUID PRESSURE CHAMBER
50.1	.With means to apply electrical and/or radiant energy to work and/or coating material
620	WITH MEANS TO APPLY ELECTRICAL AND/OR RADIANT ENERGY TO WORK AND/OR COATING MATERIAL

	WITH MEANS TO APPLY ELECTRICAL AND/OR RADIANT ENERGY TO WORK AND/OR COATING MATERIAL
621	.Electrostatic and/or electromagnetic attraction or projection of coating material to work
622	..Hollow or reentrant work surface interiorly coated
623	..Including electromagnetic field
624	..Control of deposition of coating material or selective area, e.g., pattern or edge effect
625	...Plural electrodes selectively energized
626	..Projection from edge, e.g., electrostatic atomization
627	..With assisting projection or spray of coating material through free space
628	...With electrode for collecting fugitive or off-target coating material
629	...Fluid current projector, e.g., spray type
630	....With means to transport work
631	.....With movable coating projector
632	.....Transport lines with loop return
633	.....Plural transport lines
634	.....Through vapor-confining chamber
635	.....Shielded or insulated hangers or supports
636	...Gravity flow of coating material
644	..Nonuniformly charged work or coating material carrier, e.g., xerographic
645	...Multicolor
647	...With development electrode
648	....Segmented or plural sequential
649	....Flexible
650	....Perforate or screen
651	....Roller
652	...With cleaning
653	...Particulate or solid toner
654	....Powder cloud or fluidized bed
655	....Cascade
656	....Brush applicator
657	.....Magnetic
658	......Stationary magnet with moving toner carrier
659	...Liquid projector
660	....Fountain
661	...Roller applicator
662	...Immersion
638	..Work passes between spaced electrodes
639	.With electromagnetic and/or electrostatic removal of excessive deposit, e.g., detearing
640	.With means to orient coating particles
641	.Radiant heating
642	..Radiant drying of coated work
643	...With additional diverse drying means
52	WITH MEANS TO CENTRIFUGE WORK
53	.Plural axes of rotation of work
54	.Reciprocating centrifuge
55	.Coating inside of hollow work
56	WITH MANIPULATION OF WORK AFTER COATING TO DISTRIBUTE OR REMOVE COATING
57	.Vibrating or jarring
58	WITH HEAT EXCHANGE, DRYING, OR NON-COATING GAS OR VAPOR TREATMENT OF WORK
59	.With solid heat exchange means contacting work
60	..Heated roll type
61	.With treatment of waste gases, e.g., solvent recovery
62	.To manipulate work by gas blast
63	.To remove or spread applied coating by gas blast
64	.With housing surrounding or engaging coating means
65	..Running length work
66	.Plural treatments
67	..Running length work
68	.Running length work
69	.Cooling
70	WITH CLEANING OR RECONDITIONING WORK SUPPORT OR CONVEYER
71	WITH SUPPORT FOR EXTRANEOUS ARTICLE OF MATERIAL
72	WITH MEANS TO PREPARE WORK SURFACE FOR COATING
73	.Liquid treatment
74	..Fluxing
600	WITH TREATMENT OF COATING MATERIAL
602	.Of recirculated coating material
603	..By separation
606	.By fiber preparation
608	.By milling or comminution
610	.By separation
612	.By agitation
75	COMBINED
76	RUBBING TRANSFER OR SOLID COATING MATERIAL ONTO WORK
77	.Running length work
78	..Strands or cords
79	HALF TONE PRINTING FILM HOLDERS
100	SOLID MEMBER OR MATERIAL ACTING ON COATING AFTER APPLICATION
101	.Heated or cooled member
102	.Nonuniform treatment (over treated area of work)
103	.Diverse members
104	.With means to clean or recondition members
105	.Inside of hollow work
106	.Web or belt member
107	.Rotating work
108	.Work-supported and guided carriage
109	.Absorbent or porous mass or pad member
110	.Rotary member
111	..Axis of rotation perpendicular to plane of coated surface
112	..Axis of rotation coincident or parallel to line of motion of work
113	..With reciprocation along axis of rotation
114	..Opposed rotary members
115	...Axes of both in same horizontal plane
116	...Flexible work
117	....Running length work
118	..Running length work
119	...Member opposed to work back-up
120	.Reciprocating member
121	.Opposed members
122	..Running length work
123	.Running length work
124	..Zigzag or jogged work path
125	..Die passage
126	..Member opposed to work back-up
200	SOLID APPLICATOR CONTACTING WORK
201	.With means to support applicator on body or clothing
202	.Heater or cooler for applicator or for film-transfer feed member
203	.With cleaner or conditioner for applicator
204	.With nonuniform removal of coating material from applicator
205	.Expansible or contractible to effect work contract
206	.Combined with other type coating applier
207	.Work-supported and guided carriage
208	..Strand, rod or bar traversing
209	.With work-handling or work-supporting

	SOLID APPLICATOR CONTACTING WORK
	.With work-handling or work-supporting
210	..With means to alter relative rates of work and applicator motions
211	..Pattern or definite circumscribed area of application
212	...Relief or intaglio applicator
213	...Mask or stencil
214	..Coating inside of hollow work
215	...Inside only
216	..Plural applicators or plural-applying surfaces on single applicator
217	...Diverse applicator types
218	...Rotating work
219	....Parallel, spaced or overlapping applications
220	...Plural applicators and separate work for each
221	...Parallel, spaced or overlapping applications
222	....Adjustable spacing or overlap
223	...Work moving past sequentially arranged applicators
224	....Rotary applicator opposite rotary applicator or rotary back-up
225	...Simultaneously operating on work
226	....Opposed applicators
227	.....Rotary
228	......Open side applicator support
229	..Yarn wound drum indexed for stripping
230	..Rotating turret, wheel, or drum work conveyer
231	...Sheet form work
232	..Rotating work during coating application
233	...Work rotated by applicator
234	..Strand form work
235	..With winding or unwinding of work for supply or removal
236	..Sheet stacking, unstacking or handling
237	...Coating applicator supported by stack
238	..Reciprocating work holder
239	..Endless belt-type work conveyers
240	..Compound motion of applicator during application
241	..Reciprocating or oscillating applicator
242	...Along surface of work
243	...To and from coating material supply
244	..Rotary applicator
245	...With means to strip work from applicator
246	...With means to guide work to follow perimeter of applicator
247	...Intermittently acting work back-up
248	...Opposed back-up and rotary applicator
249	....Rotary back-up
250	.....Open side applicator and back-up support
251	....Open side applicator and back-up support
252	...With guide or gauge for edge or face of work
253	..Movable back-up presses work against fixed applicator
254	.Coating inside of hollow work
255	.Plural applicators and/or plural sources of coating material
256	.Movably mounted applicator
257	..Web or belt applicator
258	..Rotary applicator
259	...Force or fountain feed
260	...Wick feed
261	...With doctor or film distributing feeder engaging applicator
262	....Rotary
263	..Applicator movable to coating material supply
264	.Pads or absorbent or porous applicators
265	..Deformable to contact supply
266	..Forced feed or movable transporter from coating material supply to applicator
267	..Gravity feed from separate coating material supply to applicator
268	..Wick feed to applicator
269	..Reversible pad and/or plural removable pad sheets
270	..Sponge cup type
271	..Heat-liquefied coating material
300	PROJECTION OR SPRAY TYPE
301	.With mask or stencil
302	.With projector heating, cleaning or conditioning
303	.Coating moving mass of solid particulate work
304	.Projector combined with nonprojecting coater
305	.Work-supported and guided carriage
306	..Inside of hollow work
307	..Strand, rod or bar form work
308	.Applying solid particulate material
309	..Dust chamber type
310	..Plural supplies of particulate material
311	...With common projector
312	..Recirculation or nonradiant heating of supply of particulate material
313	.Plural projectors
314	..Work moving past sequentially arranged projectors
315	..Simultaneously acting on work
316	...Opposed
317	.Inside of hollow work
318	..Rotating work
319	.Rotating turret work support
320	.Rotating work
321	..Moving projector
322	..Endless conveyer for work
323	.Moving projector
324	.Endless conveyer for work
325	.Flexible web or strand work
326	.With hood or offtake for waste material
400	IMMERSION OR WORK-CONFINED POOL TYPE
401	.Capillary passages or barometric column feed
402	.Floating film or layer of coating material
403	..Plural superposed layers of coating material in pool
404	.Work extending through pool-confining wall area
405	..Running length work
406	.Mask or stencil
407	.Work-confined pool
408	..Inside separate hollow work
409	..Rotating work
410	..With pump or nongravity discharge against work
411	...Plural pools
412	..Plural pools
413	..Movable or adjustable doctoring edge
414	...Rolling doctor
415	..Superposed pool
416	.Rotating work during application
417	.Tumbling particulate work
418	..Rotary drums or receptacles
419	.Running length work, longitudinally traveling
420	..Strand form work
421	.With means to move tank or pool
422	.With pool surface skimming or conditioning
423	.With means for moving work through, into or out of pool
424	..Pinch rolls

	IMMERSION OR WORK-CONFINED POOL TYPE
	.With means for moving work through, into or out of pool
425	..Reciprocating or oscillating conveyer
426	..Rotating conveyer for work
427	.With opposed relatively movable members acting on immersed work
428	.With work supports or guides
429	.With tank structure, liquid supply, control, and/or nonradiant heating means
500	WORK HOLDERS, OR HANDLING DEVICES
501	.Combined with drip pans or surplus collection
502	.Impaling type
503	.Gripper or clamped work type
504	WORK SURFACE SHIELDS, MASKS OR PROTECTORS
505	.Work-attached
506	MISCELLANEOUS
	CROSS-REFERENCE ART COLLECTION
900	SEMICONDUCTOR VAPOR DOPING
	DIGESTS
DIG 1	Anti-offset
DIG 2	Bead coater
DIG 3	Container-related coater
DIG 4	Curtain coater
DIG 5	Fluidized bed
DIG 6	Fruit coater
DIG 7	Hoods
DIG 8	Pan greaser
DIG 9	Plank and molding coater
DIG 10	Pipe and tube (inside)
DIG 11	Pipe and tube (outside)
DIG 12	Pipe and tube (immersion)
DIG 13	Pipe and tube (misc.)
DIG 14	Roller, conical
DIG 15	Roller structure
DIG 16	Slinger type
DIG 17	Wallpaper coater
DIG 18	Wire and cord (die)
DIG 19	Wire and cord (immersion)
DIG 20	Wire and cord (roller)
DIG 21	Wire and cord (striper)
DIG 22	Wire and cord (misc.)

CLASS 119 ANIMAL HUSBANDRY

	SPECIAL CULTURE
	.Aquatic
2	..Crustacean
3	..Fish
4	..Mollusk
5	..Aquariums
6	.Silkworm
6.5	ENTOMOLOGICAL CULTURE DEVICE
6.6	.Egg treatment, production or storage
6.7	WORM CULTURE
6.8	AVIAN EGG TREATMENT OR PRODUCTION
14.01	MILKERS
14.02	.Methods of milking
14.03	.Milking station arrangements, e.g., parlors
14.04	..With traveling platform
14.05	.Releasers
14.06	..Alternating
14.07	..With pulsator-controlled discharge
14.08	.With automatic control
14.09	.With cooling means
14.1	.With supporting means
14.11	..Vehicle
14.12	..Surcingle
14.13	..With biasing means
14.14	.With signals, indicators, registers and timers
14.15	..Flow indicating
14.16	...Transparent inspection means and/or flow line section
14.17	..Quantity indicating
14.18	.Combined
14.19	.Catheter
14.2	..With vacuum
14.21	..Catheter per se
14.22	.With hand compression
14.23	..Conduit and/or teat cover with receiver
14.24	.With mechanical compression
14.25	..With milk conveying vacuum
14.26	..Fluid-operated
14.27	.With fluid compression
14.28	..With electromagnetic control
14.29	..Plural pulsators operating in series
14.3	...With continuous vacuum derived from pulsating line
14.31	..With progressive collapse
14.32	..Valved trap chamber control
14.33	...Vapor barrier means, e.g., baffle, filter
14.34	...Multiple chamber
14.35	....With common discharge valve
14.36	..With milk conduit air inlet, e.g., anti-surge
14.37	..Pulsator combined with claw
14.38	..Pulsator combined with teat cup
14.39	..Pulsator mounted on receiver
14.4	...With continuous vacuum on milk channel
14.41	..Pulsator control with continuous vacuum on milk channel
14.42	..With pump between teat cups and receiver, e.g., milk pump
14.43	.With receiver between teat cups and pump, e.g., vacuum pump
14.44	.With fluid pressure regulator
14.45	.With nonuse securing means
14.46	.Receiver
14.47	.Teat compressor or cup
14.48	..Adjustable
14.49	...With liner separable from shell
14.5	..Reciprocating
14.51	..Connecting conduit
14.52	..Predetermined collapse
14.53	..Plural fluid chambers
14.54	.Claw
14.55	..Fluid control
30	BROODERS AND INCUBATORS
31	BROODERS
32	.Central heater
33	.Fireless
34	.Lateral heater
35	INCUBATORS
36	.Contact
37	.Electrical
39	.Hot air
40	..Lateral heater
41	.Hot water
42	..Lateral heater
38	.Fireless
43	.Trays
44	..Egg turners
45.1	BIRD NEST OR NEST APPLIANCE
45.2	.Egg marking or production recording appliance
45.3	.Power operated appliance
46	.Medicated nest eggs
	.Trap nest
47	..Combined
48	..Egg
49	..Fowl
50	..Fowl released
50.5	.Having specific nest bottom
50.7	EGG MARKING DEVICE
7	STOCK CARS
8	.Convertible
9	.Decks
10	.Feeding and watering devices
11	.Partitions
12	..Poultry
13	.Safeguards
14	.Vestibule
15	CONFINING AND HOUSING DEVICES
15.1	.Course
15.2	..Including racetrack starting gate
15.6	.Target releasing
21	.Fowl
22	..Appliance
23	..Birdhouses
24	..Perches
25	...Antivermin
26	...Bird
16	.Barns and sheds
17	.Cages
18	..Food and water holders
19	.Coops and kennels
20	.Pens and racks
27	.Stalls
28	..Floors
28.5	BED OR REST
51.01	FEEDING DEVICE
51.02	.Having electronic identification and feed control
51.03	.Solid or lick feeder
51.04	.For aquatic animal, e.g., a fish, etc.
51.11	.Timer-controlled
51.12	..Trough access
51.13	..Sequential discharge from plural sources
51.14	..Trip requiring reset
51.15	...Released by clock alarm mechanism
51.5	.With watering devices
70	.Poultry exercising
71	.Suckling appliances
52.1	.Hopper and trough
52.2	..Having a perch
52.3	...And feature for excluding undesirable animal
52.4	..Having selective feature
53	..Adjustable supply
53.5	...Animal-controlled
54	..Animal-controlled supply
55	...Platform
56.1	..Charge delivering
56.2	...Including horizontal transport device
57	..Movable trough-controlled supply

	FEEDING DEVICE
	.Hopper and trough
57.1	..Powered
57.2	...Conveyor in a linear trough
57.3	....Feed recirculated to hopper
57.4	...Utilizing discrete troughs
57.5	...Feed dispensing hopper portion or attachment moves relative to stationary underlying trough
57.6	....Entire hopper moved
57.7	....Endless belt or screw conveyor hopper attachment
57.8	.Having a perch
57.9	..And feature for excluding undesirable animal
57.91	.Having feed scatterer
57.92	.Powered
58	.Racks and troughs
59	..Animal excluding
60	.Racks
61	.Troughs
62	..Animal-opened
63	..Animal-excluding
64	.Anticribbing
65	.Feed bags
66	..Halter-supported
67	..Harness-supported
68	..Pole-supported
69	..Standard-supported
69.5	BIRDBATH
72	WATERING OR LIQUID FEED DEVICE
72.5	.Drop-delivering
73	.Temperature-controlling
74	.Fountains and troughs
75	..Animal-controlled supply
76	...Platform
77	..Barometric
78	..Float-controlled supply
79	...Oscillating valve
80	...Reciprocating valve
81	..Movable trough-controlled supply
83	GROOMING DEVICES
85	.Combined
86	.Currycombs
87	..Dust and vermin trap
88	..Self-cleaning
89	..Curved and reticulated wire
90	..Plain bar
91	..Rotary
92	..Serrated bar
93	..Spike-toothed
94	..Handles
29	BREAKING, TRAINING AND EXERCISING DEVICES
29.5	.Flavored devices, e.g., catnip balls
96	RESTRAINING DEVICES
97.1	.Poultry
97.2	..Limb restraint
97.3	..Pick preventing device
98	.Stocks
99	..Combined crates and neck stocks
100	..Combined slings and hopples
101	..Harness
102	..Slings
103	..Tables and trays
104	.Blinders
105	.Cow-tail holders
106	.Collars
107	.Drags and weights
108	.Hampering pads
109	.Hitching
110	..Releasers
111	...With lead line
112	...With sprayer
114	...Halter snap
115	...Reciprocating bar
116	...Rotatable shaft
117	..Rotary arm
118	..Ties
119	...Movable
120	..Traveler
121	..Picket stakes
122	..Posts
124	...Automatic take-up
125	...Disappearing
123	...Attachments
126	.Hopples
127	..Fetter bars
128	..Shackles
129	.Mouth guards
130	..Muzzles
131	...Baffles
132	....Nostril-attached
133	...Cage form
134	..Weaning bits
135	.Nose rings and clips
136	.Pokes
137	..Bar and belt
138	..Bar and bow
139	...Jointed bow
140	...Pivoted bar
141	..Bar and halter
142	..Face guards
143	.Shields
144	..Horn
145	..Stallion
146	..Udder
147.1	.Stanchion
148	..Multiple
149	..Rotatable
150	...Stop locks
151	.Catching and holding tools
152	..Crooks
153	..Loops
154	..Tongs
155	STOCK SORTERS
82	GANGWAYS
95	MANURE POUCHES
161	WASTE TOILET OR RELATED DEVICE
162	.Mounted above or within existing human commode
163	.Activated by presence of animal
164	..Underlying belt type
165	.Walled receptacle, e.g., litter box, etc., containing moisture absorbent material
166	..Having means for separating waste from absorbent material
167	...Flaccid, liner-type separator
168	..Having foldable or pivotable portion
169	..Pad-type absorbent material
170	..Having flaccid liner
171	MATERIAL FOR ABSORBING MOISTURE FROM WASTE PRODUCT
172	.Having paper related component
173	.Having clay component
156	ANTIVERMIN TREATMENT
157	.Daubing and rubbing
158	.Dipping and washing
159	.Dusting and spraying
160	.Fumigating
174	MISCELLANEOUS
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
	CROSS-REFERENCE ART COLLECTIONS
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
900	FEED SAVING DEVICE
901	CHAIN FEEDER
902	FEED AGITATOR
903	POULTRY ROOST PREVENTING DEVICE
904	STANCHION SURE STOP
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
	DIGEST
	●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
DIG 1	Milk digest

CLASS 122 LIQUID HEATERS AND VAPORIZERS

1 R PLANTS
1 A ..Air heaters
1 B ..Once through
1 C ..Feed water heaters
2 .Garbage
3 .Motor vehicle
4 R MISCELLANEOUS
4 A ..Electric boiler
4 C ..Water-cooled stoker
4 D ..Catalyst
5 GAS-PRODUCER
5.51 AIR-INJECTED
5.52 .Combustion gas and vapor contact
6 R INDUSTRIAL
6 A ..Water-cooled walls
6 B ..Bosh plates
6 C ..Skew arch coolers
6.5 .Port
6.6 .Tuyeres
6.7 ..Forge
7 R .Waste heat
7 A ...Steel converter
7 B ...Additional burner
7 C ...Waste sulfite
7 D ...Carbon monoxide
8 .Water firebox
9 ..Water tube type
10 FOR FLUID FUEL BURNER
11 ROTARY
12 ROTATABLY SUPPORTED
13.1 STAND BOILER
13.2 .Electric
.Fire tube and water tube
16 ..Fluid fuel
.Fire tube
17 ..Fluid fuel
.Water tube
..Below boiler
18 ...Fluid fuel
..Casing
19 ...Fluid fuel
14 .Fluid fuel
15 .Solid fuel
20 R SUBSIDIARY
20 A ..Subsidiary-heater firebox
20 B ..Subsidiary-heater offtake flue
29 ANNULAR FIREBOX
30 MAGAZINE
INDIRECTLY HEATED
.Separate fluid
32 ..Surface
33 ...Furnace
34 ...Separator
31.1 INDIRECTLY HEATED SEPARATE INJECTED FLUID
31.2 .Submerged flame
35 ACCUMULATOR
36 AUXILIARY STEAM HEATER
37 COMPARTMENT
.Auxiliary
38 ..Draft regulator
39 FILM
40 FLASHER
41 .Fluid fuel
42 FIRE AND WATER TUBE
43 .Fluid fuel
44.1 FIRE TUBE
44.2 .With baffle in flue
49 .Horizontal and vertical
.Horizontal or inclined
..Water firebox
50 ...Flue
51 .Horizontal
52 ..Plural
53 ...Water tube
..Central firebox
54 ...Double outlet
55 ..Cylinder
..Depending fire tube
56 ...Rear of bridge wall
..Double water firebox
57 ...Alternate smoke return
58 R ..Drop water firebox
58 FB ....Fire box construction
59 ...Circulation conduit
...Double
60 ....Alternate smoke return
61 ...Drop water baffle
62 ...Front and rear water baffle
63 ...Front water baffle
64 ...Interposed combustion chamber
65 ...Rear water baffle
66 ...Water coking chamber
...Water grate
67 ....Intermediate draft
68 ...Water tube
....Feed heater
69 .....Check-valved
70 ....Feeding air
71 ....Solid baffle
72 ..Projecting into firebox
73 ...Drop water firebox
..Return and reverse
74 ...Drop water firebox
75 ..Return fire tube
76 ...Drop water firebox
77 ....Internal water tube
...Water firebox
78 ....Flue
79 ..Subjacent water arch
80 ..Subjacent flue
81 ..Subjacent transverse fire tube
..Superjacent feed heater
82 ...In communication
83 ..Transverse diaphragm
..Two diameters
84 ...Great diameter over firebox
85 ...Small diameter over firebox
86 ....Water firebox
87 ..U-coupling
88 ..Upper drum
..Water arch
89 ...Rear of fire tube
90 ..Water firebox
...Firebox water heater
91 ....Trapped circuit
92 ...Magazine
93 ...Offset
94.1 ....Water tube type
95.1 ...Plural with common combustion chamber
95.2 ....Multiboilers
96 ...Superposed
...Water grate
97 ....Downdraft
98 ....Updraft
...Water tube
99 ....Straddle
...Water tube type
100 ....Interposed flue
101 ..Water smoke box
..Water tube
...Horizontal
102 ....Over bridge wall
103 ...Rear of fire tube
...Rearwardly declined
104 ....Over bridge wall
...Rearwardly inclined
105 ....Over bridge wall
106 ..Water wall
107 ...Drop water firebox
108 ...Subjacent water tube
109 .Inclined
.Transverse
110 ..Horizontal boiler
111 ..Vertical boiler
112 ...Water firebox

FIRE TUBE
.Transverse
113 ..Water tube
114 .Vertical
116 ..Central fire dome
117 ..Central magazine
..Circulation tube
118 ...Internal
119 ..Cylinder
120 ..Offset firebox
121 ..Return fire tube
122 ...Water firebox
123 ..Separate compartment
124 ..Side magazine
125 ..Top water chamber
126 ..Water firebox
127 ...Annular
128 ...Central magazine
..Water grate
129 ...Downdraft
130 ..Water tube
131 ...Internal
132 ...Radial loop
133 ...Spur
115 ..Fluid fuel
134 .Volute
46 .Magazine
.Flue
47 ..Horizontal
48 ..Vertical
45 .Fluid fuel
135.1 FLUE
135.2 .Alternative stack
135.3 .Sinusoidal flue
136 R .Horizontal
136 C ...Horizontal-corrugated or finned
137 ..Plural
138 ...Water tube
139 ..Drop water firebox
140.1 ..Internal water tube
140.2 ...Having water tube in flue
...Longitudinal
141 ....Drop water firebox
142 ...Return fire tube
143 ...Spur
144 ...Subjacent firebox
145 ...Transverse
146 ....Drop water firebox
147 ....Return fire tube
148 ...Water firebox
149 ..Return fire tube
150 ...Rear water tube
...Water smoke box
151 ....Separate
152 ..Water grate in flue
153 ..Water tube
154 ...Over bridge wall
155.1 .Vertical
155.2 ..With flue baffle
155.3 ..Having exterior heating flue
155.4 ..Having corrugated flue
155.5 ..Having undulating flue
157 ..Central magazine
158 ...Water jacket
..Circulation tube
159 ...Internal
160 ..Concentric shell
161 ...Fluid fuel
162 ...Central magazine
163 ..Exterior drum
165 ..Internal water heater
166.1 ..With internal water tube
166.2 ...Loop-type tube
168 ...Central magazine
169 ...Coil
170 ....Header
171 ...Contracted inlet
172 ...Header
173 ...Horizontal spur
174 ...Internal fire tube
175 ...Offset water firebox
176 ...Transverse
177 ....Fluid fuel
178 ...Vertical aligned fire tube
179 ....Fluid fuel
180 ....Spur water tube
181 ...Vertical spur
167 ...Fluid fuel
182.1 ..With return fire tube
182.2 ...Having symmetrical arrangement of tubes
182.3 ...Having tubes offset from firebox
..Spiral water conduit
183 ...Fluid fuel
..Standpipe
...Water tube
184 ....Annular firebox
185 ....Loop
186 ....Spur
187 ..Transverse fire tube
164 ..Insulated outlet flue
156 ..Fluid fuel
HORIZONTAL CYLINDER
188 .Drop water baffle
.Offset subjacent firebox
189 ..Water roof
190 ..Water tube
.Subjacent fire tube
191 ..Beyond bridge wall
192 .Water bridge wall
193 .Water firebox
194 ..Water tube type
195 .Water tube
..Feed heater
196 ...Check-valved
197 ..Lateral-longitudinal
198 ..Lateral-vertical
199 ...Firebox
200 ..Over fuel grate
201 ..Subjacent internal fire tube
202 ..Trapped circuit
..Water grate
203 ...Downdraft
204 ...Intermediate draft
205 ...Multiple series
206 ...Solid and water bar
207 ...Updraft
PLATE
.Zigzag conduit
208 ..Fluid fuel
209.1 SECTIONAL
209.2 .Feeding air
213 .Plural firebox
.Horizontal sections
214 ..Superimposed
215 ...Central connection
216 ....Fluid fuel
217 ....Water firebox
218 ...Water firebox
219 ....Central magazine
...Water tube
....Internal fire tube
220 .....Water firebox
.Vertical sections
221 ..Annularly positioned
222 ...Central magazine
223 ..Longitudinally positioned
224 ...Casing
225 R ..Transversely positioned
225 A ....Water heater in flue
225 B ....Water heater in boiler
225 F ....Feeding air
226 ...Casing
227 ....Divided section
228 ...Divided section
229 ...Water grate

	SECTIONAL
	.Vertical sections
230	..Two-section
212.1	.With magazine
212.2	..With return or alternate flue
211	.Fluid or solid fuel
210	.Fluid fuel
232	.Water grate
231	.Accessories
	TANK
233	.Horizontal
234	.Vertical
235.11	WATER TUBE
235.12	.Wall structure
235.13	.With fuel burners having posts and tuyeres
235.14	.Tube structure
235.15	.Headers and connections
235.16	.For plural fluids
235.17	.Having baffles
235.18	.Having seals
235.19	.D-type tube
235.21	..Multiple D-type tubes
235.22	.Wall loop
235.23	.Having specific tube patterns
235.24	.Screens
235.25	..Floor screens
235.26	.Having slag and ash disposal
235.27	.Locomotive-type
235.28	.Having rotary flame
235.29	.Having forced circulation system
235.31	.Having specific intenal drum and head structure
235.32	.With combustion
235.33	.With convection zone regulation
235.34	.With parallel multiple fireboxes
235.35	.With serial multiple fireboxes
238	.Offset firebox
239	.Superimposed firebox
240.1	.Having plural fireboxes
240.2	..Series connected
240.3	..Parallel connected
241	.Firebox in drum
242	.Capillary
243	..Fluid fuel
	.Coil or loop
244	..Central standpipe
245	...Fluid fuel
246	...Annular firebox
247	.Coil
	..Horizontal
248	...Fluid fuel
249	..Vertical
250 R	...Fluid fuel
250 S	.....Standpipe
251	...Central magazine
252	...Water firebox
253	.Cross
254	..Over bridge wall
	..Over firebox
	...Longitudinal
	....Header
255	.....Drum
	...Transverse
	....Header
256	.....Drum
	..Transverse
	...Header
257	....Drum
258	.Downflow
259	.Drum type
260	.Flat
261	..Volute
262	.Horizontal
263	..Over bridge wall
264	..Over firebox
265	.Inclined
266	.Internal fire tube
267	..Horizontal
268	..Inclined
269	..Plural fire tube
270	..Straddle
271	..Vertical
272	...Central magazine
273	.Longitudinal upper drum
274	..Fluid fuel
275	.Loop
276	..Firebox enclosing
277	..Over bridge wall
	..Over firebox
278	...Cross
279	...Horizontal
	...Rear of bridge wall
280	....Bridge wall header
281	...Standpipe
282	...Vertical
283	....Fluid fuel
	.Over bridge wall
284	..Headers at right angles
285	..Transverse water baffle
	..Water grate
286	...Downdraft
287	...Intermediate draft
	.Over firebox
288	..Headers at right angles
	..Water grate
289	...Updraft
	.Rearwardly declined
	..Over bridge wall
290	...Front and rear header
291	....Horizontal-longitudinal drum
292	.....Firebox tube
293	.....Longitudinal water baffle
294	.....Water wall
295	....Internal water tube
296	....Longitudinal-declined drum
297	....Transverse drum
	..Over firebox
	...Front and rear header
298	....Horizontal-longitudinal drum
299	....Transverse drum
300	....Tubes beyond side wall
	..Plural upper transverse drum
301	...Plural lower transverse drum
302	...Single lower transverse drum
	.Rearwardly inclined
	..Over firebox
	...Front and rear header
303	....Transverse drum
	.Separate banks
304	..Opposite fireboxes
305	.Spur
306	..Bridge wall header
307	..Central standpipe
308	...Fluid fuel
309	...Annular firebox
310	...Central magazine
311	..Cross
312	..Horizontal-longitudinal drum
313	..Over bridge wall
	..Over firebox
314	...Central header
315	...Declined
316	...Horizontal
317	..Straddle
318	..Vertical
319	...Fluid fuel
320	...Central magazine
321	.Standpipe
322	..Fluid fuel
323	..Annular firebox
324	.Straddle
	..Plural upper drum
325	...Plural lower drum
326	....Cross
	..Single upper drum

	WATER TUBE
	.Straddle
	..Single upper drum
327	...Plural lower drum
328	....Fluid fuel
329	....Cross
330	....Plural firebox
331	.Transverse horizontal drum
332	.Vertical
333	..Fluid fuel
334	..Side magazine
335	..Annular firebox
336	..Offset firebox
337	...Elevated
	..Annular lower drum
338	...Annular upper drum
339	....Central magazine
340	....Tubes over firebox
341	...Fire tube upper drum
342	...Spur tube upper drum
343	...Upper drum
344	....Central magazine
345	..Beyond bridge wall
346	...Gas return
	...Longitudinal upper drum
347	....Longitudinal lower drum
	..Internal fire tube
348	...Fluid fuel
349	..Over firebox
350	...Gas return
	..Plural upper longitudinal drum
351	...Plural lower longitudinal drum
	..Plural upper transverse drum
	...Plural lower transverse drum
352	....Offset firebox
353	.Water grate
354	..Downdraft
355	.Zigzag
356	..Fluid fuel
	..Over bridge wall
357	...Longitudinal drum
358	...Transverse drum
359	..Over firebox
237	.Magazine
236	.Fluid fuel
	.Headers
360	..Closures and couplings
361	...Cleaning
362	...Concentric tube
363	...Drum
364	...Tube closures
365	.Drums and couplings
366	WICK
367.1	HEAT TRANSMITTER
367.2	.Double immersed heat transmitters
367.3	.Corrugated and finned heat transmitters
367.4	.Pebble furnaces
368	WATER FIREBOX
369	.Mud ring
370	.Plural
371	WATER GRATE
	.Plural firebox
	..Superimposed
	...Water grate
372	....Updraft
373	.Cage
374	.Grate structure
375	..Solid and water bar
376	.Progressive feed
	.Water firebox
	..Solid and water bar
377	...Updraft
378	..Updraft
21	CHEMICAL
22	FLUID AND SOLID FUEL
23	FLUID FUEL
24	.Explosion
	.Plural burner
25	..Superimposed
26	FRICTION GENERATOR
	NONCOMBUSTIBLE HEATER
27	.Surface
28	.Water in contact
379	CLEANING
380	.Agitating circulator
	.Blow off
381	..Bottom and surface
382	..Bottom
383	...Internal conduit
384	....Ejector
385	....Mud ring
386	....Pan
387	....Scraper
388	....Valved
389	..Surface exit
390	.Fluid jet
391	..Horizontal fire tube boiler
392	..Water tube boiler
393	.Mud drum
394	.Pans
395	.Sandblast
396	.Systems
397	.Trapped circuit
398	..Feeding water
399	..Surface and bottom exit
400	..Surface exit
401	...Chemical feeder
402	...Circulating pump
403	...Feed heater
404	...Steam injector
405	.Wash-out nozzle
406.1	CIRCULATION
406.2	.Having anticavitation devices
406.3	.Having restrictors and orifices
406.4	.Once through
406.5	.With start-up operations
407	.Injector
408.1	.Having internal conduit
408.2	..With internal geyser tube
409	..Horizontal flue boiler
410	...Return fire tube
	.Mechanical
411	..Internal
412	FEED HEATERS
413	.Ash pan
	.Boiler circuit
414	..Feed-injected
	.Circulatioon
	..Surface exit
	...Mechanical pump
415	....Feed-injected
417	.Drip plate in boiler
	.Fire-engine boiler
	..Auxiliary
418	...Attached
419	...Detachable
420	.Furnace gases
421	.Offtake flue
422	.Furnace gases and steam
	.Horizontal fire tube boiler
423	..Smoke box
424	...Exhaust pipe
425	...Furnace gases and steam
426	...Water tube
427	..Smoke chamber
428	.Internal conduit
429	..Automatic sediment valve
430	..Blow-off delivery
431	..Filter in boiler
432	..Furnace gases
433	..Trap outside boiler
434	.Locomotive tender
435	.Pan in steam space
436	..Spray
437	.Safety valve
438	.Spray to steam space

	FEED HEATERS
439	.Stack
441	.Steam
442	..Injected
	...Superposed
443	....Open to steam space
444	.Water tube boiler
	REGULATION
	.Fuel and water
446	..Fluid fuel
447	...Cutoff
	..Automatic control
449	...Solid fuel
450	.Suspended boiler
448.1	AUTOMATIC CONTROL OF FLUID FUEL AND WATER
448.2	.Having fuel or feed bypass
448.3	.Multiple boiler regulation
448.4	.Once through
451 R	FEEDERS
451 S	..Once through
	.Automatic
451.1	..Thermally controlled
451.2	...Pressure-operated valve
452	.Boiler pressure
	.Gravity
456	..Automatic
457	...Heater
458	..Heater
459	STEAM TREATMENT
460	.Boilers with superheaters
	.Fire tube boiler
	..horizontal
461	...Superheater
	....In fire tube
462	.....From smoke box
	....Interior steam space
463	.....Internal fire tube
	....Smoke box
464	.....Fire tube
465	.....Steam tube
466	..Superheater and feed heater
	..Vertical
467	...Superheater
	.Flue boiler
	..Vertical
	...Internal water tube
468	....Superheater
	.Horizontal boiler
	..Superheater
469	...Rear of firebox
470	...Waste-heat flue
	.Water tube boiler
	..Declined over bridge wall
	...Front and rear header
	....Declined drum
471	.....Superheater
	....Longitudinal drum
472	.....Superheater
	..Longitudinal drum
473	...Superheater
	..Over bridge wall
474	...Superheater
	..Standpipe
	...Spur tube
475	....Superheater
	..Transverse drum
478	...Superheater
477	..Superheater and feed heater
476	..Superheater
	.Superheater
480	..Damper-controlled
481	..Firebox
482	..Fire tube in steam space
483	..Indirectly heated
484	..Separate charges
485	..Separate furnace
486	..Steam dome
487	..Water-injected
479.1	.Automatic heat regulation of superheater
479.2	..Having gas recirculation
479.3	..Having flame positioning
479.4	..With variable firing
479.5	..Having dampers
479.6	..Plural furnaces
479.7	..Once through
	SEPARATORS
488	.Boiler circulation
489	.Boiler return
490	.For tilting boilers
491	.Interior of boilers
492	.Steam dome
493	BRACES AND STAYS
494	CASINGS
495	CROWN SHEETS PROTECTING
496	CROWN SHEETS AND STAYS
497	FRONTS
498	.Doors
499	.Mouths
500	..Water firebox
501	FLUID-DISPLACER
502	.Fluid fuel
503	FUEL BAFFLES
504	SAFETY DEVICES
504.1	.Fusible control
504.2	.Alarms or indicators
	.Fire extinguishers
504.3	..Fusible control
505	..Float-controlled
506	..Pressure-controlled
507	.Self-closing valve
508	STEAM DOMES
509	SUBMERGED STEAM CHAMBER
510	SUPPORTS
511	TUBES AND CONNECTIONS
512	TUBE SHEETS

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DIGESTS

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DIG 1	Air heater
DIG 2	Air heater - indirectly heated
DIG 3	Gas flow baffles
DIG 4	Once through boilers
DIG 5	Critical pressure
DIG 6	Damper-directed radiation
DIG 7	Feeding air
DIG 10	Portable units
DIG 11	Removable steam-heating elements
DIG 13	Tubes - composition and protection
DIG 14	Tube replacement
DIG 15	Valves
DIG 16	Welding

CLASS 123 INTERNAL-COMBUSTION ENGINES

1 R	MISCELLANEOUS
1 A	..Fuels, lubricants and additives
2	COMBINED DEVICES
3	.Generating plants
200	ROTARY
201	.Reversible
202	.With means to control degree of compression
203	.With combusted gas treatment or handling
204	.With compression volume means in uninterrupted communication with expansion volume means
205	.With fuel injection means
206	..And pump or control means
207	..Into intake port
208	..Into intake chamber
209	..Into prechamber
210	.With ignition means
211	..Plural
212	.With plural compression volume means
213	..In series
214	.With plural expansion volume means
215	..In series
216	.With charge treatment means
217	..Exhaust gas recirculation
218	..Rotor shape
219	..Stratification
220	..Preheating
221	.With transfer means intermediate single compression volume means and single expansion volume means
222	..Isolated charge in movable transfer element
223	..Reciprocating or oscillating compression volume means
224	...Radially spaced from expansion volume means
225	....Abutment acts as compression means
226	....Compression means disposed in rotor
227	.....Vane acts as compression means
228	..Compression volume means circumferentially disposed relative to expansion volume means
229	...Transfer means in rotor
230	...Compression volume is also expansion volume
231	...Vane
232	...Interengaging rotors
233	....Nonparallel axes
234	..Compression volume means axially disposed relative to expansion volume means
235	...Transfer means in rotor
236	...Vane
237	...Abutment
238	...Interengaging rotors
239	..Compression volume means radially disposed relative to expansion volume means
240	...Concentric
241	.With compression, combustion, and expansion in a single variable volume
242	..Planetating rotor
243	..Vane
244	..Abutment
245	..Alternately approaching and receding elements
246	...Eccentric interengaging rotors
247	.Only combustion and expansion of charge in engine
248	..Abutment
249	..Interengaging rotors
18 R	OSCILLATING PISTON
18 A	..Toroidal cylinder
19	LIQUID PISTON
21	CONVERTIBLE CYCLE
22	INTERNAL COMBUSTION AND AIR
23	SOLID FUEL
24 R	GUNPOWDER
24 A	..Single shot gun powder motors
25 R	WATER AND HYDROCARBON
25 A	..Water in charge
25 B	..Water plus heat into charge
25 C	..Water into cylinder
25 D	..Water plus heat into charge
25 E	..Water introduced by mixing with other materials
25 F	..Water plus heat by mixing with other materials
25 G	..Washers and cleaners
25 H	..Washers and cleaners with heat
25 J	..Automatic water control
25 K	..Automatic water control; thermostatic
25 L	..Automatic water control; suction
25 M	..Automatic water control; speed
25 N	..Automatic water control interconnected with throttle
25 P	..Steam injection
25 Q	..Cooling regulation
26	ADDITIONAL AIR SUPPLY
250	ENGINE MEANS HAVING INTERNAL VAPORIZING IN PRECHAMBER WITH ALL COMBUSTION IN MAIN CHAMBER
251	.Whirling in prechamber
252	.Vaporizing by a hot surface of prechamber
253	PRE AND MAIN COMBUSTION CHAMBERS IN SERIES
254	.Chamber temperature control means
255	.Vaporizing in prechamber
256	.Plural prechambers
257	.Two-cycle
258	.Pre and main inlet valves timed relatively (e.g., one valve opens or closes before the other)
259	.Having volumetric relation between pre and main combustion chambers
260	.With ignition means particularly positioned relative to pre and main combustion chambers
261	.With injection means particularly positioned relative to pre and main combustion chambers
262	.Having fluid whirling means
263	..Whirling in prechamber only
264	.Prechamber is carried by a valve
265	.Pre and main chambers form an "L" head
266	.Prechamber assembly inserted in spark plug hole
267	..Separate fuel or combustible mixture added to prechamber
268	.Valveless prechamber
269	.Piston shape complements prechamber discharge
270	.Prechamber liner or coating
271	..With liner mounting means
272	..Including combustion catalyst liner or coating means
273	.Prechamber mounting means
274	.Having combustible mixture forming means
275	..By fuel injection into pre or main combustion chamber
276	...Fuel injected into prechamber formed in piston
277	...By fuel injection into prechamber with carbureted main chamber
278	...By fuel injection into main chamber with carbureted prechamber
279	.Piston carried prechamber
280	.Atomizer, deflector, or shield in prechamber
281	.Prechamber shape is a figure of revolution

	PRE AND MAIN COMBUSTION CHAMBERS IN SERIES
	.Prechamber shape is a figure of revolution
282	..Figure of revolution is multishaped to form a prechamber
283	..Cylindrical
284	..Spherical
285	.Prechamber having a specific shape
286	.Having specific connecting passage means between pre and main combustion chambers
287	..With ignition means in connecting passage
288	..Having fuel, a combustible mixture or air added in the connecting passage
289	..Fluid flow through passage controlled by working piston
290	...With whirling
291	...Multiple connecting passages
292	..With valve means or variable orifice means in the passage
293	..Having multiple passages
294	COMBUSTION CHAMBER MEANS HAVING FUEL INJECTION ONLY
295	.Combustible mixture stratification means
296	.Injector is an integral part of engine valve
297	.Combination igniting means and injector
298	.Injection of fuel onto igniter, deflector, heater or atomizer
299	.Using multiple injectors or injections
300	..Alternating multiple injectors (e.g., series injection)
301	.Injected fuel spraying into whirling fluid
302	.Air entering combustion chamber through plural inlets
303	..Having inlet uncovered by working piston
304	.Injecting diverse fuels or different states of same fuel
305	.Having a particular relationship between injection and ignition characteristics (e.g., nozzle location, spray pattern, timing relative to igniter location, timing)
27 R	BURNING BY HIGHLY COMPRESSED AIR
27 GE	..Gas engines (diesel type) convertible from liquid to gas or operable with liquid and gas
27 A	..Oil engine air preheated
	OIL ENGINES
	.Pump supply to air inlet
37	MULTIPLE EXPLOSION
38	ATMOSPHERIC
39	NONCOMPRESSION
41 R	REVERSIBLE
41 E	..Electrical
41.01	COOLING
41.02	.Automatic coolant flow control
41.03	..Float control
41.04	..Shutters, air valves, dampers or adjustable cowls
41.05	...Temperature and engine operation responsive
41.06	...Servomotor-operated type
41.07	...Interrelated shutter and throttle control
41.08	..Valves for fluid coolant
41.09	...Coolant source bypass
41.1	....Radiator or condenser source
41.11	..Air impeller
41.12	...Temperature-responsive
41.13	.Interrelated coolant flow and throttle control
41.14	.System drained and/or heat-storing
41.15	.Indicators and safety devices
41.16	.Coolant sealed in cylinder valve or piston
41.17	.Coolant released into cylinder or valve passages
41.18	.Convertible
41.19	.Refrigerating cycle
41.2	.With vapor generation and/or condensing
41.21	..Coolant circulation with condensing
41.22	...Intake or carburetor connection
41.23	...Entrained in secondary circuit
41.24	...From top of jacket to bottom of radiator
41.25	...Water bypasses condenser
41.26	...Vapor only circulated
41.27	...Overflow vent to condenser
41.28	.Multiple cylinders with equalized cooling
41.29	.Parallel flow
41.3	.Mixed air and liquid
41.31	.With cooling of additional parts or materials
41.32	..With spark plug heat exchange
41.33	..With lubricant heat exchange
41.34	.Internal cooling of moving parts, e.g., hollow valves, pistons and movable cylinder
41.35	..Piston
41.36	...Telescoping piston and stationary conduits
41.37	...Hollow piston rod
41.38	....Wrist pin type, e.g., nonrigidly connected
41.39	...Side wall opening
41.4	..Rotary valves
41.41	..Poppet-type valves
41.42	.Liquid coolants other than water and water treatment
41.43	.Movably mounted tank or radiator
41.44	.With liquid coolant circulating means
41.45	..Jet pumps
41.46	..Common drive for pump and fan
41.47	..Engine shaft driven
41.48	.Devices for cooling liquid by air flow
41.49	..Fan type
41.5	.Yielding or resilient walls
41.51	.Plural radiators and/or tanks in series
41.52	.Engine or cylinder-mounted heat dissipators
41.53	..Hopper type
41.54	.With vent
41.55	.Combined
41.56	.Air-cooled
41.57	..With liquid cooling
41.58	..Flow-regulating means
41.59	...Adjustable discharge
41.6	..Steam dividing vanes, baffles, conduits or the like for multiple cylinders
41.61	...Individual deflecting cylinder baffles
41.62	...Air duct with discharge ports or conduits
41.63	..With impelling means
41.64	...Jet type
41.65	...Fan type
41.66	....Suction
41.67	..Jacketed cylinder
41.68	...Spiral passages
41.69	..Finned cylinder and/or head
41.7	..Engine encasing air duct, e.g., cowling
41.71	.Plural materials
41.72	.With jacketed head and/or cylinder
41.73	..Jet or spray within jacket
41.74	..Multiple cylinder
41.75	..Reentrant head
41.76	..With cooled valve seats or guides

	COOLING
	.With jacketed head and/or cylinder
	..With cooled valve seats or guides
41.77	...Poppet-type valves
41.78	...Cylinder side-wall valves
41.79	..With passages, baffles, etc.
41.8	...Spiral passages
41.81	..Cylinder jacket supported solely by cylinder
41.82 R	..With head-cooling arrangements
41.82 A	....Composite head
41.83	..Cylinder detachable
41.84	...Flanged cylinder or liner
41.85	.Valve seats or guides
41.86	CRANKCASE VENTILATION
42	OSCILLATING CYLINDER
43 R	ROTATING CYLINDER
43 A	..Parallel to shaft
43 AA	...Parallel to shaft cam track
43 B	..Toroidal cylinders
43 C	..Cam transmission
44 R	.Radial
44 A	...Wheel
44 B	...Combustion chamber is center of star
44 C	...Two-cycle
44 D	...Valve casing-cylinders have no valves but have ports which register with ports in casing
44 E	...Cam transmission
45 R	ROTARY RECIPROCATING PISTON
45 A	..Piston and crankshaft coaxial
46 R	FREE PISTON
46 A	..Two chambers; one piston
46 B	..Phasing means between two or more units
46 SC	..Single chamber; one piston
46 E	..Electric generating means
46 H	..Hammer
47 R	VALVED PISTON
47 A	..Charge passes from crankcase through valve in piston
47 AA	..Lost motion connection actuates valve
47 AB	..Inlet and exhaust valve in piston
48 R	ADJUSTABLE COMBUSTION CHAMBER
48 A	..Piston in head adjusted manually or mechanically
48 AA	..Piston in head adjusted
48 B	..Piston varied by means in crankshaft, connecting rod or piston
48 C	..Cylinder or sleeve-moved
48 D	..Auxiliary chamber
50 R	RECIPROCATING CYLINDER
50 A	..Four-cycle
50 B	..Two-cycle
51 R	MULTIPLE PISTON
51 A	..Four-cycle
51 AA	...Four-cycle separate crankshaft for piston
51 AC	...Two or more combustion chambers between the piston
51 B	..Two-cycle
51 BA	...Two-cycle separate crankshaft for piston
51 BB	...Piston offset from crankshaft
51 BC	...Plural combustion chamber and plural piston
51 BD	...Inlet or exhaust ports in two or more planes
52 R	MULTIPLE CYLINDER
52 A	..Two or more crankshafts
52 B	..Annular piston
52 M	..Manifolds
52 Mb	..Balancing tubes
52 ML	..Manifold has return loop to inlet
52 MV	..Manifold for V-type engines
52 MF	..Back flow-prevention valve
52 MC	..Manifold and block construction
53 R	.Simultaneous expansion
53 A	...Four-stroke cycle
53 AA	....Four-stroke cycle, two crankshafts
53 B	...Two-stroke cycle
53 BA	....Two-stroke cycle, two crankshafts
53 BP	...Single piston divides cylinder into two chambers
53 C	...Three or more crankshafts
54 R	.Cylinders offset
54 A	...Crankshaft between parallel cylinders
54 B	...Crankshaft at one side of opposed cylinders
55 R	.Cylinders radiating
55 A	...Star
55 AA	....Radial cylinder cam transmission
55 AB	....Shields, cowls and manifolds
55 AC	....Star-type valve gear
55 VF	...Four cylinder "V" type
55 VS	...Six cylinder "V" type
55 VE	...Eight cylinder "V" type
55 V	...More than eight cylinder "V" type
55 SR	...Semiradial
56 R	.Cylinders opposite
56 A	...Four-cycle
56 AA	....Cylinder opposite and offset
56 AB	....Cylinder opposite and crankshaft offset
56 AC	....Cylinder opposite and aligned
56 B	...Two-cycle
56 BA	....Cylinder opposite and offset
56 BB	....Cylinder opposite and crankshaft offset
56 BC	....Cylinder opposite and aligned
56 C	...Cam transmission
57 R	.Cylinders tandem
57 A	...Four-cycle
57 B	...Two-cycle
58 R	.Cylinders parallel
58 A	...Cam plate type
58 AA	....Single bank of cylinders
58 AB	....Motion converting means between two banks
58 AM	....Multiple cam drive
58 B	...Swash plate type
58 BA	....Single bank of cylinders
58 BB	....Motion converting means between two banks of cylinders
58 BC	....Multiple swash plate drive
58 C	...Shaft rotates through piston
59 R	.Cylinders longitudinal
59 A	...Four-cycle
59 B	...Two-cycle
59 BA	...Lengthwise scavenging
59 BS	...Step piston (see sub. 65S)
59 BL	...Lengthwise scavenging of cylinders
59 AB	...Long reciprocating valve
59 BM	...Exhaust gases of pressure pulse for charging cylinders
59 EC	...Exhaust to next cylinder ready to fire
59 AL	...Long rotary valve
59 AT	....Tapered
59 AC	...Sleeve valve
59 AD	...Disc valve
59 NB	...Inclined base
59 PC	...Plural carburetors
60	..Cranks coincident
	DOUBLE-ACTING
61 R	.Two-cycle
61 V	...Lengthwise scavenging of cylinders from cylinder head to piston
62	..Combined pump and motor cylinder
63	.Four-cycle
64	SIX-CYCLE
65 R	TWO-CYCLE
65 PE	..Exhaust ports
65 A	..Inlet and exhaust ports in two or more planes
65 B	..Pumps

	TWO-CYCLE
65 BA	..Blowers
65 PD	..Port deflectors
65 E	..Scavenging by inertia of exhaust gas and charging by use of pressure waves
65 S	..Step piston (see sub. 59 BS)
65 V	..Valves
65 VA	...Sleeve valve
65 VS	...Sleeve driven by auxiliary crankshafts
65 VB	..Lengthwise scavenging list above
65 VC	..Lengthwise scavenging exhaust above
65 VD	..Intake and exhaust valve in top of cylinder
65 W	..Whirl through piston-controlled ports
65 WA	...Whirl in top of cylinders and lengthwise scavenging
65 WV	..Vacuum intake
65 SP	..Single port for inlet and exhaust
65 EM	..Exhaust manifolds
65 P	..Ports
66	.Combined pump and motor cylinder
67	.Divided pump discharge
68	.Pump compression
69 R	.Separate air and gas pumps
69 V	...Lengthwise scavenging of cylinder by gas from cylinder head to piston
70 R	.Pump and cylinder adjacent
70 V	...Lengthwise scavenging of power cylinder
71 R	.Pump and cylinder coaxial
71 V	...Lengthwise scavenging of cylinder from head to piston
71 VA	...Sleeve valve
72	.Pump and cylinder inclined
	.Rear compression
73 R	..Crankcase
73 A	....Fuel to crankcase
73 AA	....Ported piston
73 AV	.....Valved
73 AB	....Inlet valve in head
73 AC	....Varies compression space
73 AD	....Lubricant oil and fuel mixing devices
73 AE	....Auxiliary piston moves synthronously with piston to enlarge volume of crankcase or incoming charge
73 AF	....Crankcase compression with auxiliary pump means
73 B	....Fuel to bypass
73 BA	.....Lengthwise scavenging of cylinders from head
73 C	....Fuel to cylinder
73 CA	.....Lengthwise scavenging of cylinders from head
73 CB	.....With liquid pump to separate inlet
73 CC	.....With gas or vapor pump to separate
73 D	....Disc valves
73 DA	.....Charge to crankcase through crankshaft
73 E	....Reentrant cylinder head
73 F	....Stepped piston
73 FA	.....Ported
73 S	....Supercharging of crankcase
73 V	....Valves for crankcase
73 SC	....Returns charge to crankcase or rejects to exhaust
73 PP	....Distinct passages from crankcase to cylinder
73 SP	....Slow-speed operation
74 R	..Cylinder
74 A	....Fuel to rear of piston
74 AA	.....Lengthwise scavenging from head
74 AP	....Reduced portion of piston acts as guide
74 AC	....Cross head between piston and crank
74 AE	....Enclosed crankcase
74 B	....Lengthwise bypass
74 C	....Lengthwise cylinder combustion space
74 D	....Slide valve between chamber of pump and crankcase
306	MEANS TO WHIRL FLUID BEFORE, UPON OR AFTER ENTRY INTO COMBUSTION CHAMBER
307	.Structural projection on working piston causes whirling
308	.Having multiple oxidant inlet means
309	.Specific spark plug location
310	COMBUSTION CHAMBER HAVING MULTIPLE SPARK GAPS
311	FOUR-CYCLE
312	.Engine cylinder having a reciprocating sleeve valve
313	..Having a junk ring seal
314	..Having sleeve valve lubrication means
315	.Multiple exhaust
316	.Having subcharger associated with the cylinder
317	.Crankcase compression of air or combustible mixture to be subsequently pumped into the working cylinder
318	.Rear compression of air or combustible mixture to be subsequently pumped into the working cylinder
76	.Scavenging
77	.Single revolution
78 R	.Variable clearance
78 A	...Piston in head adjusted mechanically
78 AA	....Piston in head adjusted by fluid means
78 B	...Varying means is in the piston
78 BA	....Varying means is in the piston connection
78 C	...Cylinder or sleeve moved
78 D	...Auxiliary chamber
78 E	...Varying means is in the connecting rod
78 F	...Varying means is in the crankshaft
79 R	.Single poppet valve
79 A	...Rotary valve and poppet which extends through rotary valve
79 C	...Concentric valves; relatively movable
80 R	.Rotating valve
80 BA	...Rotary valve is perpendicular to cylinder
80 BB	...Rotary valve is parallel to cylinder
80 C	...Sleeve valve
80 D	...Disc valve
80 DA	...Rotary plug
81 R	.Oscillating valve
81 B	...Oscillating valve - not sleeve or disc
81 C	...Sleeve valve
81 D	...Disc valve
82	.Rotating side shaft
83	.Rotating transverse shaft
84	.Adjacent supply and exhaust valves
85	.Aligned supply and exhaust valves
86	.Opposite supply and exhaust valves
87	.Longitudinal valve and lever
88	.Transverse valve and lever
89	.Transverse valve and bell crank
319	ENGINE SPEED REGULATOR
320	.Responsive to deceleration mode (e.g., engine acting as a brake)
321	..Valve timing altering means (e.g., axially sliding cam shaft)
322	...Electrical means adapted to alter valve timing
323	..Exhaust throttling or blocking
324	..Part of the air or combustible mixture to the engine cylinder omitted
325	..Deceleration responsive cutoff of fuel to engine (e.g., pollution control)

ENGINE SPEED REGULATOR
.Responsive to deceleration mode (e.g., engine acting as a brake)
..Deceleration responsive cutoff of fuel to engine (e.g., pollution control)
326 ...Rich resupply of fuel at end of deceleration
327 ..Auxiliary air fed to the engine
328 ..Idle jet bypassed by a slight opening of the throttle
329 ..Having means to retard spark (e.g., ignition timing)
330 .Engine speed reduction by overriching the combustible mixture (e.g., choking engine)
331 ..By electric means
332 .Engine speed reduction by fuel cutoff
333 ..By electric means
334 .Engine speed reduction by partial or complete omission of the ignition
335 ..By electric means
336 .Having plural throttle valve structure
337 .Specific throttle valve structure
338 .Fuel injection pump bypass control
339 .Idle speed control
340 .Regulation responsive to a plurality of sensed engine conditions
341 ..Vacuum sensing
342 .Regulator changes length of accelerator linkage
343 .Regulator accessory (e.g., cleaner, adjusting tool, etc.)
344 .Charge proportion varying (e.g., the fuel-air ratio is varied)
345 .By changing valve lift
346 ..Intake valve lift altered
347 .By changing valve timing
348 ..Intake valve timing altered
349 .Having condition responsive means with engine being part of a closed feedback system (e.g., cruise control)
350 ..Electrical sensing or regulating
351 ...Engine overspeed sensing with an indicator, or alarm, and speed regulation
352 ...Engine speed sensing having an error signal producing circuit
353 ....Having variable duty cycle multivibrator (e.g., length of "time on" in each cycle)
354 ....Having variable frequency multivibrator (e.g., number of "time ons" per unit of time)
355 ....Having phase difference detector
356 ....Circuit resonates (e.g., tuned) at governed speed
357 ....Electric fuel injection pump governor
358 .....Max-min governor (i.e., no control in between)
359 .....Fail-safe feature (e.g., cuts off fuel pump)
360 ....Circuit controls a fluid throttle operator (e.g., vacuum)
361 ....Circuit controls an electric throttle operator
362 ...Cold engine control
363 ..Mechanical sensor or regulator
364 ...Fuel injection pump governor (e.g., diesel)
365 ....Governor override
366 .....Engine starting or warm-up control
367 .....Variable throttle or control rod stop
368 .....Idle control after starting (e.g., warm engine)
369 ....Three-dimensional cam control
370 ....Acceleration responsive
371 ....Deceleration responsive
372 ....Biased axial link (e.g., sliding rod with spring return)
373 ....Pivoted link connected to pump rack
374 .....Movable fulcrum (e.g., slot and pin)
375 ...Fuel injection pressure governor
376 ...Throttle positioning
377 ....Safety override of dangerous manual position
378 ..Fluidic sensor or regulator
379 ...Fuel injection pump governor
380 ....Barometric sensor
381 ....Fuel viscosity sensor (e.g., temperature sensing)
382 ....Manifold pressure sensor
383 .....Supercharger
384 ....Floating piston-type governor (e.g., Bessiere)
385 ....Liquid fluid governor
386 .....Lubrication pressure sensor
387 .....Fuel pressure sensor
388 .....Override for basic mechanical governor
389 ...Intake manifold vacuum responsive
390 ...Fuel injection pressure governor
391 ...Responsive to intake airflow
392 ...Responsive to cooling fan airflow
393 ...Responsive to exhaust gas
394 ..By combustion air or air-fuel mixture cutoff
395 .Open loop condition responsive
396 ..Resistance or override acts on input connection to regulator
397 ...Shutdown safety device
398 ...Throttle position lock
399 ..Having an electrical device between input and speed regulator
400 ..Mechanical connection between input and speed regulator
401 ..Fluidic device between input and regulator
402 .Charge volume varying (e.g., total amount of mixture fed to engine is varied; relative amounts of air and fuel are fixed)
403 ..Throttling (e.g., volume varying using throttle valve)
404 ..Suction operated supply valve lift regulating
405 ..By engine operated valve
406 SPARK IGNITION TIMING CONTROL
407 .Vacuum timing control
408 ..Multiple diaphragms
409 ..Fluid delay in fluid path line from vacuum source
410 ..Including sensor responsive to barometric pressure to alter vacuum level
411 ..Increasing vacuum retards the spark
412 .Barometric pressure responsive controller
413 .By mechanical or hydraulic link to throttle valve or accelerator
414 .Having engine shaft position sensor
415 .Analog electronic control
416 .Digital electronic control
417 ..Having microprocessor
418 .Speed responsive
419 ..Responsive to instantaneous changes in engine speed (e.g., roughness)
420 ..Centrifugal timing mechanism
421 .Ambient or engine temperature responsive
422 .Acceleration responsive
423 .Deceleration responsive

SPARK IGNITION TIMING CONTROL
424 .Starting or cold running condition responsive
425 .Cylinder pressure or cylinder temperature responsive
426 .Feedback correction
427 .Timing control derived from ignition capacitor
428 .Having circuit that alters response of an oscillatory engine shaft position sensing circuit
429 COMBUSTION CHAMBER MEANS COMBINED WITH AIR-FUEL MIXTURE FORMING MEANS
430 .Stratification in combustion chamber
431 .Having a single combustible mixture inlet combined with means for injecting additional fuel into the combustion chamber
432 .Air or combustible mixture entering the combustion chamber through plural inlets
433 ..One inlet is uncovered by piston travel
434 CHARGE FORMING DEVICE (E.G., POLLUTION CONTROL)
435 .Including cylinder pressure or temperature responsive means
436 .Including means responsive to instantaneous change in engine speed
437 .Auxiliary control of carburetor fuel metering
438 ..By electrical or electronic control system
439 ...Variable venturi carburetor
440 ...Exhaust gas condition responsive
441 ..By mechanical speed sensor
442 .Injection or carburetion system having a series of throttle valves
443 .Alternate or simultaneous lean-rich
444 .Having fluidic logic control means
445 .Fuel injection system
446 ..Fuel pump flow regulation
447 ...With accumulator
448 ...Sequential distributor
449 ....Rotary and reciprocating distributor
450 ....Rotary distributor
451 ....Reciprocating distributor
452 ...Nonsequential distributor
453 ....Enrichment of the combustible mixture for cold starting or cold running
454 ....Equal pressure valve type
455 ....Distributor and metering unit are in common housing
456 ....Common rail system
457 ...Regulating means adjust fuel pressure
458 ....Electric regulator
459 ....Bleed off valve
460 ....Series regulator
461 ....Having vapor returned to tank or pump inlet
462 ....By throttle control
463 ....Manifold pressure responsive
464 ....Temperature responsive
465 ....Barometric responsive
466 ....Having an antitampering device
467 ..Drip prevention means at injector nozzle
468 ..Having a specific shape, material, or location of fuel line
469 ...Specific fuel line mounting means
470 ..Injection nozzle mounting means
471 ...Nozzle isolated from manifold vacuum effect
472 ..Electrically actuated injector
473 ...Mechanically actuated switching
474 ....Ignition distributor used as switch
475 ...Actuated by ignition pulse
476 ...Magnetically actuated switching
477 ...Radiation actuated switching
478 ...Actuator circuit (e.g., engine condition responsive electronic circuit actuates injector valve)
479 ....Backup systems, fail-safe, failure indicator
480 ....Having microprocessor
481 ....Engine cylinder cutout
482 ....Circuit activates valve for continuous fuel flow
483 ....Having plural multivibrators
484 ....Having single multivibrator
485 ....Having ramp generator
486 ....Having a digital memory addressed by an engine parameter
487 ....Having an up or up-down counter in circuit
488 ....Subcircuit operates on a parameter sensor output before input to main fuel control (e.g., function generator)
489 ....Exhaust gas sensing
490 ....Injector solenoid drive
491 ....Starting condition responsive
492 ....Acceleration or full load condition responsive
493 ....Deceleration condition responsive
494 ....Having specific transducer
495 .With fuel pump
496 ..Variable rate of injection stroke
497 ..Electric fuel pump
498 ...Piezoelectric drive
499 ...Solenoid drive
500 ..Variable beginning and ending of pumping stroke
501 ..Variable beginning of pumping stroke
502 ...Fluid pressure control
503 ..Variable ending of pumping stroke
504 ..Variable stroke
505 ..Fuel pump and intake air controls interconnected
506 ..Having pressure relief valve
507 ..Pumping member driven by a piston or valve of the internal combustion engine
508 ..Pumping member driven by the internal combustion engine valve operating mechanism
509 ..Specific location or mounting of pump
510 .Fuel flow regulation between the pump and the charge forming device
511 ..Regulator means adjusts fuel pressure
512 ...Engine parameter responsive
513 ...Environmental condition responsive
514 ..Excess fuel returned to tank
515 ..Regulator controls flow of a plurality of fuels
516 ..Air or fuel vapor purging system
517 ..Carburetor float bowl drain
518 .Having fuel vapor recovery and storage system
519 ..Having an adsorbent canister
520 ...Purge valve controlled by engine parameter
521 ....Responsive to secondary air pressure
522 .Liquid fuel evaporating by submerged air supply
523 .Liquid fuel evaporating by extended fuel film
524 ..Screen or mat
525 .Combined liquid and gaseous fuel
526 ..Diesel engine convertible from liquid to gas
527 .Gaseous fuel and air mixer
528 ..Supercharged engine
529 ..Safety device (e.g., cutoff)
530 .Constant flow fuel supply

CHARGE FORMING DEVICE (E.G., POLLUTION CONTROL)
531 .Auxiliary air or gas used to inject fuel
532 ..Air is bled from the cylinder on the compression stroke in that cylinder
533 ..Having a separate pump for the air or gas
534 ..Air is bled from another engine cylinder
535 ..Constant fuel level
536 .Combustible mixture ionization, ozonation, or electrolysis
537 ..Before intake valve (e.g., in manifold)
538 ..Fuel only
539 ..Air only
540 .Cooling of combustible mixture
541 ..Fuel only
542 ..Air only
543 .Heating of combustible mixture
544 ..Lighter fuel is used during starting
545 ..Heating meduim surrounds combustible mixture
546 ..Combustible mixture surrounds heating medium
547 ..Combustible mixture and heating meduim adjoin one another
548 ..Trap for liquid particle vaporization
549 ..Electric heater
550 ..Combustion heater
551 ...Part of combustible mixture is burned
552 ..Automatic control
553 ..Intermediate fluid used for heating
554 ..Combustible mixture, air, and fuel are heated separately
555 ..Air and fuel heated separately
556 ..Air only
557 ..Fuel only
558 ...Fuel is heated to ignition temperature
559.1 .Supercharger
559.2 ..Pressure exchange with exhaust gas
559.3 ..With clutch
560 ..Two-cycle compressor feeds a four-cycle engine
561 ..Variable ratio compressor driven supercharger
562 ..Multiple superchargers
563 ..Intercooler
564 ..Boost control
565 ..Supercharger is driven independently of the engine
566 ..Funnel type supercharger (e.g., ram-air)
567 .Oxidant is solely oxygen
568 .Exhaust gas used with the combustible mixture (e.g., emission control e.g.r. valve)
569 ..Diesel engine
570 ..Exhaust gas cooled before recirculation
571 ..Electrical control of e.g.r. valve (e.g., between exhaust gas and intake manifold)
572 .Crankcase vapor used with combustible mixture
573 ..Vapor treated before mixing with combustible mixture (e.g., cooling)
574 ..Specific control valve (e.g., PCV valve)
575 .Diverse fuel supply
576 ..Fuel switched in response to engine starting condition
577 ..Fuel switched, condition responsive to load
578 ..Fuel switched in response to engine temperature
579 .Multiple carburetors
580 ..Each carburetor feeds a cylinder or group of cylinders (e.g., split engine)
581 ..Separate carburetor for starting
582 ..Separate carburetor for high load
583 ..With linkage between carburetor throttle valves
584 ...Staged opening of carburetor throttle valves
585 .Auxiliary air or oxygen added to combustible mixture
586 ..Oxidant controlled by throttle
587 ..Oxidant controlled by intake manifold vacuum
588 ..Oxidant controlled by engine temperature
589 ..Oxidant controlled by exhaust gas content
590 .Charge mixing device intake (e.g., device which insures the atomization of the combustible mixture)
591 ..Having liquid fuel collector
592 ..By fan means
593 ..By screen means
594 HIGH TENSION IGNITION SYSTEM
595 .Retrofit conversion ignition unit
596 .Using capacitive storage and discharge for spark energy
597 ..Regulating sensed ignition capacitor voltage
598 ..Having an oscillator
599 ..Having a magneto
600 ...Triggering voltage obtained from capacitor charging winding
601 ...Specific design of charge or trigger winding core
602 ...Having controllable timing means
603 ...Antireverse protection
604 ..Inductive capacitive discharge system
605 ..Having a specific capacitor, ignition coil means, or switching element circuit path
606 .High frequency ignition system
607 ..Free running oscillator supplies coil primary
608 ..Having a specific spark plug
609 .Having dwell control
610 ..Using a monostable multivibrator
611 ..Dwell maintained at constant value
612 .Having engine component position sensor
613 ..Optical sensing
614 ..Including a zero crossing detector
615 ..Includng an oscillator
616 ..Piezoelectric sensor
617 ..Inductive or magnetic sensor
618 .Having specific trigger circuitry
619 ..Oscillatory trigger circuit
620 .Additional spark energy supply
621 .Having an ignition coil with multiple primary or secondary windings
622 ..Separate circuit for each winding
623 .Having supply voltage regulation
624 .Having ballast resistor cut out or control
625 .Responsive to engine or environmental condition
626 ..Oscillator or trigger circuit responsive to engine condition
627 .Having auxiliary spark gap in series or parallel with the coil
628 .Having a continuous high voltage output to the high voltage distributor
629 .Monostable multivibrator controls timing of coil primary current
630 .Safety device
631 ..Reverse engine rotation protection

	HIGH TENSION IGNITION SYSTEM
	.Safety device
632	..Ignition switch opened when engine stops
633	.Radio interference protection
634	.Having a specific ignition coil
635	.Specific coil location
636	.Multiple spark ignition system
637	..System fires single spark plug per cylinder
638	..System fires multiple spark plugs per cylinder
639	..System using vibrator for multiple sparks upon starting
640	.Dual systems
641	..One for starting
642	.Piezoelectric voltage generator
643	.Electronic cylinder sequencing
644	.Current or voltage sensing in coil primary
645	.Maverick spark suppressor
646	..Point bounce or arc suppression system
647	.Having a specific mounting of system component
648	.Having SCR triggered by lowering cathode voltage below ground
649	.Multiple primary current interrupters
650	.Power supply, ignition coil primary and interrupter element all in series
651	..Interrupter is multiple transistor circuit
652	..Interrupter is single transistor
653	..Additional capacitor other than breaker point capacitor is in series with coil primary or secondary
654	..Additional capacitor other than breaker point capacitor is in parallel with coil primary or secondary
655	..Diode is in series with coil primary or secondary
656	..Diode is in parallel with coil primary or secondary
90.1	POPPET VALVE OPERATING MECHANISM
90.11	.Electrical system
90.12	.Hydraulic system
90.13	..With manifold and distributor
90.14	.Pneumatic system
90.15	.With means for varying timing
90.16	..Cam-to-valve relationship
90.17	..Camshaft or cam characteristics
90.18	...Axially shiftable camshaft
90.19	.With temperature compensation
90.2	.With compound movement of cam follower
90.21	.Follower displaced axially of camshaft
90.22	.Plural valve trains, single actuator
90.23	..Intake and exhaust
90.24	.Valve driven closed
90.25	..By valve-opening rocker
90.26	..By cam-actuated unitary follower
90.27	.Overhead camshaft
90.28	.With nonvalving movement (e.g., about valve stem)
90.29	..Oscillating movement converted internally
90.3	..Positive rotation provided by internal means
90.31	.Camshaft drive means
90.32	.With alternate interruption of drive train
90.33	.Lubrication
90.34	..Camshaft
90.35	..Tappet as conduit
90.36	..Rocker fulcrum as conduit
90.37	..Seals and shields
90.38	..Housings
90.39	.Rocker
90.4	..Plural valves
90.41	..Individually fulcrumed
90.42	...Rotation prevention
90.43	...Lash adjustment at fulcrum
90.44	..Cam engaged
90.45	..Lash adjustment
90.46	...Hydraulic
90.47	..Yieldable engagement
90.48	.Tappet
90.49	..Cushion and silencer
90.5	..Rotation prevention
90.51	..Composition, surface treatment manufacture
90.52	..Lash adjustment
90.53	...Self-operating
90.54	....Screw
90.55	....Hydraulic
90.56	.....Pressure flow upwardly into pressure chamber
90.57	.....Vent or bleed means for pressure chamber
90.58	.....Self-contained
90.59	.....With provision for horizontal positioning
90.6	.Cam
90.61	.Rod
90.62	..Self-adjusting
90.63	...Hydraulic
90.64	..Pull type
90.65	.Spring
90.66	..Attenuated
90.67	..Seat and retainer
143 R	IGNITERS
143 A	..High compression igniters
143 B	..Special charge igniters
143 C	..Insulated casing enclosing wires leading to plugs, distributor, etc.
144	.Flame
145 R	.Incandescent
145 A	...Electric (incandescent ignitors using electricity as a source of heat)
146	..Valve controlled
146.5 R	.Sparkers
146.5 A	...Timers
146.5 B	...Ignition locks
146.5 C	...Fluid level or pressure-actuated ignition switches
146.5 D	...Devices for opening the ignition circuit when engine stops in order to save battery
147	..Low tension
149 R	..Dynamos
149 A	....Inductor type
149 B	....Impulse starters
149 C	....Timing means
149 D	....Flywheel type
149 E	....Oscillating armature type
149 F	....Special waveforms
149 FA	.....Double current generators
149 G	....Movable pole shoes and bell-magnets
149 H	....Reciprocating
150	..Combined adjusting and exhaust regulating
151	..Combined sparker and valve
152	..Combined valve and sparker operating
169 R	..Plugs
169 CL	....Cleaners automatic
169 CM	.....Cleaners manual
169 CA	....Compound insulation
169 CB	....Core retaining
169 DW	....Disk wrappings type
169 EL	....Electrodes
169 EA	....Adjustable gap
169 EB	....Replaceable electrode
169 EC	....Adjustable and replaceable
169 C	....Cool
169 E	....Insulated electrodes
169 G	....Intensity in gap only
169 P	....Insulating protecting

	IGNITERS
	.Sparkers
	..Plugs
	....Insulating protecting
169 PA	.....Tubes and attachments
169 PB	.....Heaters
169 PH	.....Hoods and shields
169 MG	....Multiple firing gap
169 TC	....Transparent combustion chamber
169 V	....Valved
153	..Make and break
154	...Electromagnetic
155	...Pneumatic
162	...Piston-operated
156	...Reciprocating electrode
157	...Rocking-electrode hammer action
158	...Rocking and rigid electrodes
159	...Rocking and yielding electrodes
160	...Oscillating electrodes
161	...Rotary electrodes
163	...Stationary-electrode structure
164	...Adjusting mechanism
192 R	COMPENSATING DEVICES
192 B	..Balancing arrangements
197 R	TRANSMISSION MECHANISM
197 A	..Piston
197 AB	..Connecting rod
197 AC	..Crankshaft and connecting rod
197 C	..Transmission with clutches
179 R	STARTING DEVICES
179 A	..Starting plus some engine function
179 B	...Function is electrical
179 BG	....Electrical function is ignition
179 C	..Manual control
179 D	..Generators and auxiliary
179 E	..Auxiliary engine
179 F	..Fluid-starting motors
179 G	..Starting and fuel control
179 H	..Charge and cylinder heating
179 J	..Inertia starters
179 K	..Interlock between the starter and transmission
179 L	..Fuel injection
179 M	..Electric motor structure
179 N	..Auxiliary magneto
179 SE	..Small engine starters (lawn mowers)
179 CC	..Centrifugal clutch
179 P	..Combined power and manual starters (work together or alternately)
179 AS	..Airplane starters (for fluid-operated see 123/179 F) (for hand-operated see 123/185 D)
179 S	..Potential motor starters - spring motors
179 T	...Spring is wound by the wheels of the vehicle
180 R	.Combustible-mixture supply
180 A	...Taking out fuel, carborating same, and reinjecting
180 AC	...Acetylene or alcohol used as the starting fuel
180 E	...Electrical attachments
180 EH	...Exhaust heating
180 P	...Pumps
180 T	...Thermostats
187.5 R	.Primers
187.5 P	...Priming cups
183	.Gunpowder
182	.Compression relieving
185 R	.Mechanical
185 A	...Cable or rope
185 B	...Wound on a pulley - with spring provided to keep cable or rope taut
185 BA	....Spring is helical wound
185 BB	....Lever connected to the rope or cable
185 C	....Lever or slide
185 CA	....Lever or slide actuates a gear segment
185 D	...Means to be started is an airplane or toy airplane
185 F	...Connection between the main shaft of the engine and the operating means is a friction means
185 G	...Connection between the main shaft of the engine and the operating means is a threaded member
185 N	...Connection between the main shaft of the engine and the operating member is a worm gear
185 P	...Operating member is a crank
185 S	....Means provided to prevent counter rotation of crank
186	..Spark delaying
184	.Igniters
142.5 R	WITH HEATING MEANS
142.5 E	..Electric heaters for heating cooling system
657	COMBUSTION CHAMBER
658	.L- or T-shaped
659	.Having groove to aid combustion
660	.An acoustic cavity used to attenuate detonation shock waves (e.g., Bodine)
661	.having squish area
662	.Multiple annular combustion chambers
663	.Annular combustion chamber
664	.Combustion chamber shape is a figure of revolution
665	..Spherical
666	..Hemispherical
667	.Asymmetric combustion chamber
668	.Having coating or liner
669	..With means for mounting coating or liner
670	.Having catalytic cambustion aid
671	.Cylinder head shape conforms to piston shape
193 R	CYLINDER AND PISTON CONSTRUCTION
193 C	..Novelty in cylinder
193 CH	..Novelty in cylinder and/or head
193 CP	..Novelty in cylinder and/or piston
193 H	..Head
193 P	..Piston
188 R	VALVES
188 A	..Poppet valves (some sodium filled and some hollow)
188 AA	..Poppet valve materials, structures, etc.
188 B	..Reciprocating valves - not poppet or sleeve
188 C	..Sleeve
188 P	..Packing
188 VA	..Valve accessories
188 S	..Seat valve relation
188 GC	..Guides and/or lubricant and/or cooling
188 AF	..Auxiliary function
188 SA	...Spring and wear compensation
188 SB	...Spring seats
188 M	..Intake manifold shape to valve
188 N	..Shepherd-type engine
188 AP	..Pivoted poppet
188 SC	..Springs concentric with valve stems
189	.Detachable
190 R	.Rotary
190 A	...Single function, i.e., exhaust and intake by separate tube
190 AA	...Rotary valve-controlled crankcase
190 B	...Double function
190 BA	....Double-function valve between two or more cylinders
190 BB	....Long rotary double-function valve
190 BC	.....Tapered
190 BD	....Single double-function valve in horizontal plane above cylinder
190 BE	.....Tapered

	VALVES
	.Rotary
	...Double function
190 BF	....Single double-function valve in horizontal plane on the side of the cylinder
190 C	...Sleeve
190 CA	....Sleeve valve lubrication
190 D	...Disc, cone, sphere valves
190 DA	....Valve controls plural cylinders
190 DL	...Lubricants
190 E	...Seals
195 R	FRAME CONSTRUCTION
195 A	..Auxiliaries, brackets
195 C	..All covers
195 E	..Electrical
195 P	..Outboard motor frames
195 S	..Sheet metal frames
195 AC	..Inclined cylinder
195 H	..Horizontal stress members
195 HC	..Horizontal cylinder
196 R	LUBRICATORS
196 A	..Filtering
196 CP	..Crankcase, pressure control
196 AB	..Heating and cooling
196 M	..Upper cylinder lubricants
196 S	..Safety devices
196 V	..Sleeve valve lubrication
196 W	..Vertical shaft
198 R	ACCESSORIES
198 A	..Decarbonizers and antiknocks
198 B	..Antitheft valves and locks
198 C	..Pumps
198 D	..Safety devices
198 DA	..Bearing wear, cylinder, oil drain, auto ignition
198 DB	..Fuel cut-off
198 DC	..Ignition cut-off control
198 E	..Covers, trays, vibrators, corrosion inhibitors, air filters
198 F	..Cylinder cut out
198 P	..Pressurizing - crankcase, clutch housing, transmission housing

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DIGESTS

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DIG 1	Interchangeable
DIG 2	Accumulated fuel return to tank or engine-induction system
DIG 3	Model
DIG 4	Stratification
DIG 5	Crankcase pressure-operated pumps
DIG 6	Detachable
DIG 7	Convertible
DIG 8	Multiple engine units
DIG 9	Flame ignition
DIG 10	Fluidic amplifier fuel control
DIG 11	Antidieseling (stopping)
DIG 12	Hydrogen
DIG 13	Gas

CLASS 124 MECHANICAL GUNS AND PROJECTORS

DECEMBER 1990

2	COMBINED WITH CAP EXPLODER
3	ELECTROMAGNETIC
54	ELECTRICALLY ACTUATED PROJECTILE STRIKER
4	CENTRIFUGAL
5	.Hand
6	.Mechanical
7	..Spring
8	...Rotating about vertical axis
9	....Automatically varied throwing angle
10	PINCH
55	PROJECTOR FOR IMPELLING PUFF OF GAS ONLY
56	FLUID PRESSURE
57	.Self-contained in projectile or projectile-carrying cartridge
58	.Adapter for coverting projector force or projectile
59	.Having common supply to plural projector barrels
60	.Provided by surge of pressure into evacuated projector barrel
61	.Applied to intermediate projectile-engaging member
62	.Provided by user's mouth or lungs
63	.Provided by movement of user-actuated, projector-mounted pressure member
64	..To create surge of pressure
65	...By plunger moving within cylinder
66	....By spring-driven plunger
67	.....Within cylinder having diameter larger than projector barrel
68	......With recoil-absorbing mechanism
69	..To store pressure in valved container
70	.With check valve permitting recharge, and control valve for discharge, of fluid pressure
71	.With control for discharge of fluid pressure
72	..For continual projection of successive projectiles (e.g., for "rapid fire", etc.)
73	..By valve means
74	...For discharge of pressure from removably mounted cartridge
75	...Opened by fluid pressure-actuated means
76	...Opened by spring-actuated means
77	...Opened by electrically actuated means
16	SPRING
17	.Elastic band
18	..Self-projected band
19	...Repeating
20.1	..Having handle (e.g., crotch type slingshot)
20.2	...Magazine handle
20.3	...Arrow or dart projector
21	..Guided projectile
22	...Dart or arrow projector
23.1	.Bow
24.1	..Having projectile guide
25	...Crossbow
25.5	...Having projectile supply
25.6	..Compound bow
25.7	..Having projectile supply
26	.Guided projectile
27	..Gun type
28	...Converted firearm
29	...Mounted
78	PROJECTILE IMPELLED BY COACTING WHEELS
79	PROJECTILE IMPELLED BY USER-PROVIDED FORCE
80	ELEMENT
31	.Trigger or releasing mechanism
32	..Electrical
33	..Chance operated
34	..Remote
35.1	..Cord or band
35.2	...Bow lock or archery trigger for compound or long bow string
36	..Swinging arm release
37	..Plunger release
38	...Variable force
39	...Continuous firing
40	..Safety lock
41.1	.Projectile holder or carrier
42	..Disk
43	...Disk target clip or carrier
44	..Boomerang
44.5	..For longbow or compound bow
44.6	..Magnetic restraint
44.7	..Fluid overcomes restraining force
45	.Magazine
46	..Disk target
47	...Gravity fed
48	..Rotary
49	..Gravity fed
50	...Having cut-off
51.1	..Mechanical projectile feed
52	...Spring
53	....Having cut-off
53.5	...Fluid projectile feed
81	.Means for producing projectile spin or deflection
82	.Means for feeding projectile or ejecting cartridge
83	.Projector barrel
84	..On convertible or adjustable projector
85	..With surrounding cylinder
86	.For archery projector
87	..Bow sight
88	..Bow handle or attachment thereto
89	...For stabilization thereof
90	..Bow string or attachment thereto
91	...Nock-point locator
92	...Silencer
1	MISCELLANEOUS
	*******************************
	CROSS-REFERENCE ART COLLECTION
	*******************************
900	LIMB TIP ROTATABLE ELEMENT STRUCTURE

CLASS 125 STONE WORKING

1	MISCELLANEOUS
2	DRESSING
3	.Rotary cutter
4	..Cutter-support feed
5	..Rotary tools
6	.Pick-action cutter
7	..Cutter-support feed
8	.Arm-supported tool
9	PLANING
10	TURNING
11.01	.Grinding-wheel dressing
11.02	..Indexing of tool point
11.03	..Rotary or crush dressing
11.04	..Contouring of grinding wheel face
11.05	...Cam controlled
11.06	...Templet- or pattern-controlled
11.07	....Hydraulically actuated
11.08	....Pantograph
11.09	....Fulcrum bar
11.1	...Tangent bar forms arcuate surface
11.11	...Forming arcs and tangents thereto
11.12	...Generation of arc or bevel by two or more tools
11.13	...With compound motion of tool
11.14	...Arc forming by swinging tool
11.15	...Forming bevel
11.16	....By swinging tool
11.17	..Transverse swinging motion to form planer surface
11.18	..Peripheral grinding face
11.19	..Radial grinding face
11.2	..Hydraulic tool traversing means
11.21	..Rectilinearly reciprocating tool
11.22	..Coolant supply
11.23	..With compensator for tool wear
12	SAWING
13.01	.Rotary
13.02	..Having internal cutting edge
13.03	..With pivoted frame
14	..Saw-support feed
15	..Saw blades
16.01	.Reciprocating
16.02	..Having saw with supply and take-up means
16.03	..Lever-operated saw
16.04	..Angular cutting saws
17	..Saw racks
18	..Saw blades
19	.Oscillating
20	.Disk cutting
21	.Endless
22	.Saw teeth
23.01	SPLITTING, SHEARING, AND PUNCHING
23.02	.Roller-type cutter
24	.Mica splitting
25	SLATE SURFACING
26	BRICK CLEANING
27	MILLSTONE DRESSING
28	.Rotary cutter
29	.Pick-action cutter
30.01	PRECIOUS STONE WORKING
30.02	.Wire drawing die making
35	WORK SUPPORTS
36	TOOLS
37	.Traction rotated
38	.Surface traversing
39	..Diamond
40	.Impact
41	..Bush hammers and chisels
42	..Millstone picks
43	..Miners' picks
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	CROSS-REFERENCE ART COLLECTION
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901	FORMING PIEZOELECTRIC CRYSTALS

CLASS 126 STOVES AND FURNACES

DECEMBER 1990

415	POOL OR POND HAVING SOLAR HEAT UNIT
416	.Remotely located unit
417	SOLAR HEAT COLLECTOR
418	.With means to protect collector against damage by external force
419	.Condition responsive means controls working fluid or solar radiation shading means
420	..To prevent freezing of working fluid
421	..Secondary working fluid controlled in response to condition of primary fluid
422	..Responsive to collector temperature
423	..Responsive to working fluid level
424	.With tracking means
425	..Controlled by timer or sun position sensing means
426	.Rollable or foldable collector unit of nonrigid material
427	.With auxiliary heat source for working or heated fluid
428	.With means to utilize heated fluid from a collector to heat the interior of a building
429	..With means to circulate air from room of building through collector
430	..With heat storage mass
431	..With heated fluid passage in floor or wall of room to heat same
432	.Having means conveying working fluid through collector
433	..Having evaporator and condenser sections (e.g., heat pipe)
434	..Fluid filled close loop having thermosiphonic circulation
435	..With means to exchange heat between plural fluids
436	..With heat storage mass
437	..With storage tank for heated fluid
438	..With concentrating reflector
439	...Spaced, opposed interacting reflecting surfaces
440	..With concentrating lens
441	..With radiation trap
442	..Tubular
443	...Surrounded by transparent enclosure
444	...Spaced parallel sheets form tube
445	....Having internal partition means
446	...Having heat absorbing fin or plate
447	....Plural tubes connected to common absorber plate
448	...Laterally spaced fluid conduit sections
449	..Absorber having extended surface, e.g., protrusions, permeable mass, corrugation
450	..Collector housing
451	.Energy concentrator with support for article heated (e.g., solar oven)
452	PROCESS OF HEATING BY USE OF SOLAR HEAT
204	BODY WARMERS
205	.Bed heaters
207	.Heated block
206	.Composition fuel
208	.Liquid or gaseous fuel
209	..Combined heater and lantern
210	..Water heater
401	TOOL HAVING FLUID FUEL BURNER
402	.Branding iron
403	..Gas
404	..Hydrocarbon reservoir
405	.Burning tool
406	..Gas
407	..Hydrocarbon reservoir
408	.Curling iron
409	..Hydrocarbon reservoir
410	.Roll heating type
411	.Sadiron
412	..Hydrocarbon reservoir
413	.Soldering iron
414	..Hydrocarbon reservoir
226	TOOL HEATERS
236	.Soldering iron
237	..Gas heaters
238	...Tool-controlled valve
239	..Liquid fuel
240	...Combined heater and solder pot
241	...Lamp
229	.Liquid or gaseous fuel
231	..Gas burner attachments
232	...Combined lighting and heating
233	...Jet mixer
234	...Tool-controlled valve
235	..Lamp attachments
230	..Flatiron
227	.Flatiron
228	..Attachments
284	GLUE POTS
281	DOUGH RAISERS
282	.Lamp type
343.5 R	MELTING FURNACES
343.5 A	..Other than snow (asphalt, etc.)
19.5	COMBUSTION ENGINE-HEATED COOKING STOVES, OVEN OR HEATING VESSELS
500	FIREPLACES OR ACCESSORIES
501	.Hopper feed of solid fuel
502	.Condition responsive control
503	..Of fluid fuel feed
504	..Of flue damper
505	.With article warming shelf on grate
506	.With food cooker
507	.With filter
508	.With room humidifier
509	.For heating plural rooms
510	..Fireplace in dividing wall
511	...Rotatable fire chamber
512	.Fluid fuel
513	.With liquid heater
514	..And means conducting liquid to room heater
515	.Inlet air supply from outside fireplace room
516	..With air pump
517	...And air flow regulator
518	..With air flow regulator
519	.Circular viewability of flame
520	.Insertable into existing window
521	.With air pump
522	..Tubular heat exchanger
523	.With heat exchanger for room heating air
524	..Tubular
525	...Secondary outlet leads air to flame
526	...With air flow regulator
527	..Secondary outlet leads air to flame
528	..Air flow path between exterior surface of heat exchanger and facing building surface
529	...And additional flow path through hollow walled heat exchanger
530	...With air flow regulator
531	..Hollow side walls in heat exchanger
532	..With means facilitating ash removal
533	..With air flow regulator
534	...And adjustable flue damper
535	..And adjustable flue damper
536	.Adjustable flue damper
537	..Screw operator
538	..Variable predetermined positions
539	..From exterior of front face of fireplace
540	.Grate structure
541	..Relatively movable parts
542	...Including means facilitating ash removal
543	....With removable ash pan

	FIREPLACES OR ACCESSORIES
544	.Front barrier or guard
545	..With particular seal
546	..Vertically adjustable
547	..Solid front cover
548	...And perforated screen
549	...And auxilliary air flow adjuster
550	..Smoke collecting hood
551	..Screen slidable on track
552	.Heat reflecting structure
553	..Adjustable
554	.With means facilitating ash removal
555	..Removable ash pan
344	WATER HEATERS
345	.Kettle furnace
346	..Canning
348	..Steam generators and cookers
349	..Tilting
347	..Horizontal combustion chamber
369	.Steaming apparatus
369.1	..With additional heating fluid
369.2	..Plural steam chambers
369.3	...Selective supply
361	.Stand boilers
362	..Circulation
363	..Supports
364	.Stovepipe
365	..Circulation
	.Submerged
367	..Portable
366	..Closed systems pipes
368	..Stationary
373	.Vessels
374	..With automatic control
375	..With heat accumulator
376	..Fluid-heated
377	...Steam- or water-heated
378	....Closed chamber or coil
379	....Jet
380	..With liquid supply
381	..With condenser
382	...Condensing liquid
383	..Overflow directors or receptors
384	...In vessel closure
385	...Annular receptor
386	....With return
387	..With heat-type agitator or circulator
388	..With signal or indicator
389	..With vent passage
390	..Heating-surface construction and arrangement
391	...Fire tube type
392	...Water tube type
350 R	.Liquid and gaseous fuel
350 A	...Automobile radiator heater
350 B	...Vaporizers and humidifiers
350 C	...Washing machines
350 D	...Shower bath
351	..Automatic
355	..Drip plate
357	..Hinged or separable
358	..Lamp type
359	..Overflow
360 R	..Submerged
360 A	....Submerged flame
	HEATERS
263	.Chemical
246	.Dish
269	.Powder
261	.Lunch
268	..Wagon
265	..Liquid or gaseous fuel
266	...Dinner buckets
267	....Combined bucket and lantern
262	..Combined can and heater
271.1	.Surface
271.2 R	..Fluid fuel
271.2 A	....Pavement heaters
271.2 B	....Switch heaters
271.2 C	....Machine open burners
271.3	..Solid fuel
247	.Frictional
	.Liquid or gaseous fuel
	..Attachments
248	...Drum
249	...Gas jet
254	....Combined
252	....Article support
253	.....Jet mixer
250	....Air
251	.....Jet mixer
255	...Lamp
	....Chimney heaters
258	.....Article support
257	.....Air
	....Stands
260	.....Article support
259 R	.....Air heaters
259 M	.......Drums, mufflers and heat exchangers
256	....Article support
	TRASH BURNERS
222	.Cooking stoves
223	..Feeding attachments
225	.Heating stoves
224	.Domestic-refuse burners
134	.Air-moistening attachments
99 R	HOT-AIR FURNACES
99 P	..Pipeless
99 A	..Tubular heater
99 C	..Helical passages
99 D	..Air baffles
100	.Combined with cooking stove
101	.Combined with boiler
110 R	.Compressed air
110 A	...Blower and air damper
110 AA	...Downflow of air being heated
110 B	...Unit heaters
110 C	...Gas and air mixing
110 D	...Unitary fan and heater
110 E	...Thermally actuated air-propelling means
111	.Double fire pot
116 R	.Liquid or gaseous fuel
116 A	...Automatic control
116 B	...Floor and wall furnaces
116 C	...Electric auxiliary
117	.Preliminary air heater
106	.Internal air chamber
108	.Secondary heating chamber horizontally arranged
109	.Tubular air heater
107	.Magazine
104 R	.Horizontal combustion chamber
104 A	...Blowers
102	.Circular radiating drum
103	.Downdraft
112	.Feeding air
113	.Air moisteners
114	.Casings
115	.Dust flue
105 R	.Hot-air equalizers
105 A	...Fan in casing top
118	.Radiating flanges
119	.Joints
	STOVES
1 R	.Cooking
1 A	...Side oven
1 AA	...Wall in common
1 AB	...Wall separate
1 AC	...Wall laterally spaced
1 AD	...Wall lateral air feed
1 AE	...Wall lateral gas passage
1 B	...Side and superimposed oven
1 C	...Side and underlying oven
1 D	...Superimposed oven

	STOVES
	.Cooking
1 E	...Underlying oven
1 F	...Insulation
24	..Ship's galley
25 R	..Summer
25 A	....Variable distance from heat source
25 AA	....Rotating and elevating
25 B	....Igniting
25 C	....Extinguishing
29	...Field
30	....Supporting frame
27	...Stove top-supported
28	....Stove flue-connected
26	...Detachable fire pot
9 R	..Knockdown or separable
9 A	....Disposable units
9 B	....Knockdown elements
4	..Combined cooking and heating stove
5	...Steam or water generators
6	...Air-heating
7	...Magazine
8	..Brick set
23	..Reversible
2	..Double fire pot
3	...Cooking and heating
10	..Magazine
11	...Portable
33	..Tables, steam-heated
55	..Combined base and hot closet
	..Liquid or gaseous fuel
38	...Folding or nesting kit
37 R	...Cabinet
37 A	.....Top cover plate
37 B	.....Slidable, fold, or swingable
36	...Combined coal and gas
52	...Valve mechanism, article-controlled
53	...Water backs
54	....Combined burner and water back
39 R	...Gas
39 A	.....Heating kitchen
39 B	.....Frame structure
39 BA	.....Electric features
39 C	.....Miscellaneous ovens
39 D	.....Indirectly heated
39 E	.....Burners and lighters
39 F	.....Fireless cookers
39 G	.....Thermostatic control
39 H	.....Hot plates
39 N	.....Hot plates, front plates, valve and manifold
39 J	.....Hot plates with radiants
39 K	.....Hot plates, air feed, and flame shields
39 L	.....Rotating stove
39 M	.....Removable liner
41 R	....Broilers
41 A	......Rotary-vertical axis
41 B	......Rotary-horizontal axis
41 C	......Endless chain
41 D	......Drawer
41 E	......Drawer-elevating
40	.....Burner stands
42	....Safety attachments
	...Liquid
43	....Alcohol
44	....Vapor
45	....Wick
46	.....Extension top
47	.....Lamp type
48	......Combined top, chimney and burner
49	.....Reservoir supporting top and burner
51	....Drip pan or receptacle
50	...Supporting frame
15 R	..Feeding air
15 A	....Forced air
16	..Flue cleaners
	..Elevated ovens

17	...Smoke pipe-heated
18	...Top plate-supported
19 R	..Ovens
19 M	....Movable ovens
20	...Steam or hot water
20.1	....Plural
20.2	.....Selective supply
21 R	...Ventilated
21 A	.....Forced circulation
22	...Protector plate
34	..Water backs
35	...Safety devices
	..Water-heating
31	...Flue extension
12	..Hearths
13	...Fire pot
14	..Broiling attachments
32	..Spittoon attachments
56	.Car
57	..Protective casings
58	.Heating
59	..Camp
59.5	..Orchard
60	..Horizontal body
61	...Hot air
64	..Panel
65	..Sheet metal
66	...Hot air
79	..Smoke and gas returning
	..Liquid or gaseous fuel
84	...Combined heating and ventilating
85 R	...Gas
85 A	.....Brooder stoves
85 B	.....Connected to outside
91 R	....Radiator type
91 A	......Elongated radiant tube
86	....Open front
87	.....Asbestos fireback
88	......Hot air
89	.....Hot air
90 R	....Hot air
90 A	......Electric heater
92 R	.....Incandescent fire grate
92 AC	......Radiant
92 A	......Electric radiant
92 B	......Radiant with reflector
92 C	......Radiant enclosed by furnace shell
93	...Liquid
94	....Flue-connected
95	....Vapor
96	....Wick
97	.....Heating and illuminating
67	..Hot air
68	...Magazine
69	...Revertible draft, base-heating
72	...Tubular air heaters
70	...Internal air chamber
71	...Central air tube
73	..Magazine
74	...Revertible draft, base-hating
75	..Revertible draft, base-heating
76	..Downdraft
77	..Feeding air
78	..Feeding steam
80	..Ventilating attachments
81	..Stove plates
82	..Adjustable pipe collar
83	..Deflector plate
98	..Joints
	OVENS
273 R	.Domestic
273 A	...Wall-mounted
273.5	..With heat accumulator, e.g., fireless
274	..Dutch
275 R	..Portable
275 E	....Electric
276	.Wagon
144	FIRE POTS AND LININGS

	FIRE POTS AND LININGS
	.Rotary
149	..Horizontal axis
150	..Vertical axis
145	.Adjustable
146	.Feeding air
147	.Divided
151	.Sectional
148	.Fire plate
242	ASH DISCHARGE AND COLLECTING
245	.Combined stove and ash pan
243	.Ash pans
244	..Sifting
211	STOVE LIDS AND TOPS
217	.Heating stove
218	..Cooking attachments
219	..Ornaments and urns
213	.Illuminating
214 R	.Liquid or gaseous fuel
214 A	...Units mounted in counter top
214 B	...Buck panel structure
214 C	...Top grid
214 D	...Shields and deflectors
215	..Elevating support
216	..Extension top
212	.Centers or cross pieces
220	.Lids
221	.Stove mats
400	HEAT ACCUMULATOR STRUCTURES
190	STOVE DOORS AND WINDOWS
198	.Oven doors, ventilating
193	.Feeding air
191	.Balanced
	.Latches
197	..Combined latch and operator
192	.Door-operator
194	.Hinges
200	.Transparent panel
332	STOVE SHELVES
337 R	.Oven shelf or rack
337 A	...Shelf-adjusting
338	..Rotary
339	..Sliding
340	...Door-operated
334	.Drop
335	..Door-operated
333	.Brackets or stands
285 R	DAMPERS
285 A	..Slide
285 B	..Electric
285.5	.Timer-controlled
286	.Distance operating devices
287	..Door-operated
287.5	.Fusible release
289	.Stove
290	..Draft
291	..Repair
292	.Stovepipe
293	..Combined damper and ventilator
295	..Lock and indicator
296	..Multiple
297	..Sinuous passage
294	..Cone
152 R	GRATES
152 A	..Reinforcements
152 B	..Special features
163 R	.Feeding air
163 A	...Auxiliary grate
153	.Adjustable
154	..Vertically
160	.Closures
166	.Fuel cut-off
161	.Cut-off
	.Rotary
181	..Horizontal axis
182	..Vertical axis
	.OSCILLATORY
170	..Vertical axis
171	...Dumping section
172	...Sliding section
176 R	.Rocking bar
176 A	...Detachable shaker arms
177	..Dumping
178	..Duplex
179	..Grate bar
180	...Removing fuel support
174	.Reciprocating
175	..Alternate bar
155	.Agitating
159	..Pocket
158	..Dumping
156	..Alternate ends
157	..Alternate bar
162	.Dumping
167	.Grate bar
168	..Removable fuel support
169	.Operating mechanism
173	.Raking attachments
299 R	STOVE HOODS
299 C	..Splatter shields
299 D	..Stove surface ventilation only
299 E	...Including liquid contact
299 F	..Smoke eliminators and flue deflectors
300	.Stove discharge
301	.Stovepipe discharge
302	..Stove casing
303	..Top plate casing
307 R	STOVEPIPES
307 A	..Back draft diverter
312	.Ventilation
313	.Air-moistening attachments
314	STOVEPIPE THIMBLES
316	.Combined thimble and ventilator
315	.Adjustable flue collar
318	.Stovepipe anchor or lock
319	.Flue stoppers
317	.Floor or ceiling plates
280	SOOT CATCHERS
201	FENDERS
298	FIRE DOGS
277	PLATFORMS
278	.Stove boards
279	.Ventilating
304 R	STOVE LEGS
304 A	..Adjustable legs
305	.Base supports
306	.Sheet metal
283	FUEL BOXES
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	WORKING FLUID COMPOSITIONS
901	ABSORBER COATING
	******************************
	DIGESTS
	******************************
DIG 1	Manually adjustable shading means for absorber
DIG 2	Collector includes overlapping roof shingles or tiles

CLASS 127 SUGAR, STARCH AND CARBOHYDRATES

DECEMBER 1990

	APPARATUS
1	.Hydrolyzing
2	.Treating sacchariferous material
3	..Leaching or diffusion
4	...Combined disintegrator
5	...Advancing solid material
6	....Multiple stage
7	....Tubular cell
8	...Diffusion batteries
9	..Treating sacchariferous solutions
10	...Dialyzers
11	...Defecating apparatus
12	....Gas and liquid contact
13	....Separating tanks
14	....Mixing tanks
15	..Forming crystals
16	...Concentrating and crystallizing
17	..Treating crystals
18	...Purging and molding
19	....Centrifugal
20	...Purging
21	...Granulating and mixing
22	...Melting or dissolving
23	.Treating amylaceous material
24	..Separating and purifying
25	...Screens or washers
26	...Tables
27	...Decanters or settling tanks
28	..Cookers
	PRODUCTS
29	.Miscellaneous
30	.Sugars only
31	..Lactose
32	.Modified starches
33	..Added chemical
	PROCESSES
34	.Carbohydrate manufacture and refining
36	..Hydrolysis of carbohydrates
37	...Cellulose material
38	...Amylaceous material
39	....With preliminary purification of starch
40	....With purification of product
41	...Inversion of sucrose
42	..Sugar manufacture and refining
43	...Extracting from solid material
44	....Chemical treatment
45	....Counterflow
46.1	...Treatment of sacchariferous solutions
46.2	....Involving ion manipulation, e.g., ion exchange, etc.
46.3	.....For ion exclusion
47	....Chemical precipitation of sucrose
48	....Chemical precipitation of impurities
49	.....Impregnated absorbent
50	.....Alkaline reagent followed by precipitant
51	.....Acid reagent followed by precipitant
52	.....Gassing
53	....Physical separation of impurities
54	.....Dialysis
55	.....Filtering or sorption
56	.....Centrifuging
57	.....Settling or flotation
58	....Crystallizing or solidifying
59	.....Molding
60	.....Seeding
61	.....Evaporating to crystallization
62	......Return of intermediate products
63	...Treating solid sugar or crystals
64	....Purging or bleaching
65	..Starch manufacture and refining
66	...Tubers
67	...Treatment of starch-bearing material
68	....Steeping
69	....Treatment of amylaceous liquids
70	.....Chemical
71	...Treating starch
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	DIGEST
	******************************
DIG 1	Caramel

1.6	SURGICALLY IMPLANTED VIBRATORY HEARING AID
630	DIAGNOSTIC TESTING
631	.Endoradiosonde
632	.Measuring or detecting nonradioactive constituent of body liquid by means placed against or in body throughout test
633	..Infrared, visible light, or ultraviolet radiation directed on or through body or constituent released therefrom
634	...Light-conducting fiber inserted in body
635	..Electroanalysis
636	..Holder for color indicator
637	.Measuring physical characteristic of blood by means placed against or in body
638	.Bleeding detection
639	.Structure of body-contacting electrode or its positioning means
640	..Electrode adhesively mounted on body
641	...Lead attached to electrode by head and socket-type connection
642	..Electrode in body
643	..Electrode held on body by suction
644	..Electrode or its positioning means extends circumferentially of body portion
645	.Testing aqueous humor pressure or related condition
646	..Measuring impedance to flow of aqueous humor (tonography)
647	..Measuring acoustic impedance of eye
648	..Fluid jet directed against eye
649	..Eye vibrated
650	..Pressure indicator includes liquid column
651	..Pressure indicator includes pointer swingable over scale and mechanically driven by eye contacting means
652	..Measuring force required to produce standard or measured eye flattening (applanation)
653 R	.Detecting nuclear, electromagetic, or ultrasonic radiation
653 A	...Magnetic resonance imaging or analysis
653 AF	....Of fluid flow
653 CA	....Using detectable material placed in the body (e.g., contrast agent, etc.)
653 SC	...Magnetic resonance system component
654	..Detectable material placed in body
655	...Piston-type ram forces material into body
656	...Using flexible catheter
657	....Catheter guide means
658	....Catheter structure
659	..Nuclear radiation
660.01	..Ultrasonic
660.02	...Used as indicator of another parameter (e.g., temperature, pressure, viscosity)
660.03	...With therapeutic device
660.04	...Plural display mode systems
660.05	....Having B-scan and doppler
660.06	...Tissue attenuation or impedance measurement or compensation
660.07	...Anatomic image produced by reflective scanning
660.08	....With mechanical and electronic scanning
660.09	....Mechanical scanning
660.1	.....Hand-held unit
661.01	....Electronic array scanning
661.02	...Through-transmission (e.g., time-Of-flight) imaging
661.03	...One dimensional anatomic display or measurement
661.04	....Cardiographic
661.05	....Echoencephalography
661.06	....Opthalmic
661.07	...Doppler effect (e.g., foetal HR monitoring)
661.08	....Blood flow studies
661.09	.....Pulse doppler
661.1	......With volumetric measurement
662.01	.....CW doppler
662.02	...Contrast enhancement
662.03	...Structure of transducer or probe assembly
662.04	....Doppler effect (e.g., foetal HR monitor probe)
662.05	....Associated with puncturing instrument
662.06	....With portion of probe inserted into blood vessel (e.g., catheter) or body orifice (e.g., endoscope-mounted)
663.01	....With beam directing or shaping means in the wave path (e.g., lens, reflector)
664	..Infrared radiation
665	..Visible light radiation
666	...Cardiovascular testing
667	....Pressure in blood vessel
668	.Cardiovascular
669	..Measuring resistance of capillary blood vessels to hemorrhage
670	..Simultaneously detecting cardiovascular condition and diverse body condition
671	...Detecting respiratory condition
672	..Measuring pressure in heart or blood vessel
673	...Testing means inserted in body
674	....Pressure indicator includes liquid column
675	....Pressure transducer structure
676	...Ophthalmodynamometer
677	...Force applied against skin to close blood vessel
678	....Hand-supported occluder
679	....Tester having two occluders, or single occluder and separate pressurized pulse sensing cuff or cushion
680	....Electric signal generated by sensing means responsive to pulse or Korotkoff sounds
681	.....Pulse-induced pressure fluctuation in occluder generates electric signal
682	.....Pressure in inflatable occluder automatically raised above systolic pressure
683	......Repeating pressurization cycle
684	....Pressure indicator includes liquid column
685	....Valve structure
686	....Occluder structure
687	..Detecting blood vessel pulsation
688	...Waveform graph-type pulse recorder
689	...Pulse indicator
690	....Entire testing assembly supported on wrist
691	..Measuring blood flow in body portion other than heart
692	...Sensing means inserted in blood vessel
693	...By detecting electrical impedance of body portion
694	...By detecting volume of body portion

DIAGNOSTIC TESTING
.Cardiovascular
695 ..Heart
696 ...Detecting heartbeat electric signal
697 ....Testing artificially regulated or assisted heart
698 ....Fetal heartbeat
699 ....Orthogonal heartbeat electric signals combined to form vector signal
700 ....Detecting heartbeat electric signal and diverse cardiovascular characteristic
701 ....Sound generated by successive heartbeat electric signals to represent heart action
702 ....Detecting arrhythmia
703 .....Variation in duration of segment of PQRST signal waveform (e.g., QRS complex, etc.) detected
704 .....Vertical variation of segment of PQRST signl waveform (e.g., amplitude of QRS complex, etc.) detected
705 .....Tachycardia or fibrillation detected
706 ....Detecting signal repetition rate
707 .....Detecting means associated with exercise machine
708 ....Detecting R portion of signal waveform
709 ....Switching means for activating different monitoring systems, signal displays, or signal recorders
710 ....Signal display or recording
711 .....Magnetic recording
712 .....Cathode-ray tube used for display or included in recording means
713 ...Blood output per beat or time interval
714 ...Detecting heartbeat by sensing movement of oscillatable body-supporting means
715 ...Detecting heart sound
716 .Respiratory
717 ..Halitosis detection
718 ..Measuring metabolic rate by breath test
719 ..Qualitative or quantitative analysis of breath component
720 ..Measuring respiratory flow impedance or lung elasticity
721 ..Detecting body movement attending breathing
722 ...Capacitor-type transducer
723 ...Detector responsive to movement induced variation in impedance of body to electric current
724 ..Thermistor-type transducer generating electric signal in response to breath flow
725 ..Measuring breath flow or lung capacity
726 ...Element rotated by breath flow
727 ...Breath exhaled into or inhaled from expansible chamber
728 ....Bellows or expansible bag
729 ....Liquid surface forms portion of chamber boundary
730 ..Breath collection
731 .Detecting brain electric signal
732 ..With feedback of signal to patient
733 .Detecting muscle electric signal
734 .Measuring electrical impedance or conductance of body portion
735 ..Locating acupuncture points
736 .Temperature detection
737 .Detecting foreign object or calculus by probing
738 .Monitoring fertility cycle
739 .Sensitivity to vibration
740 .Sensitivity to impact
741 .Sensitivity to electric stimulus
742 .Sensitivity to thermal stimulus
743 .Sensitivity of skin to allergens or radiation
744 .Touch or pain response of skin
745 .Eye or testing by visual stimulus
746 .Ear or testing by auditory stimulus
747 .Injecting gas into body canal or cavity
748 .Measuring fluid pressure in body
749 .Sampling non-liquid body material (e.g., bone, muscle tissue, epithelial cells, etc.)
750 ..Irrigation
751 ..Cutting
752 ...Applying suction to sample
753 ....Body pierced by tubular cutter or rod-type punch
754 ...Body pierced by tubular cutter or rod-type punch
755 ...Motorized
756 ..Brushing
757 ..Scraping with edged instrument
758 ...Applying suction to sample
759 ..Wiping or dabbing
760 .Liquid collection
761 ..Means specifically structured for collecting urine of human female
762 ..Plural collection means (e.g., plural reservoirs or plural absorbent pads, etc.)
763 ..Hand-supported collector with rigid intake tube (e.g., a hollow needle, etc.)
764 ...Penetrable seal in liquid flow path to collection reservoir
765 ...Mechanical means for drawing liquid into collection reservoir
766 ...Means for controlling liquid flow
767 ..Wall of collection reservoir formed of flexible material
768 ..Flexible collection tube inserted in body
769 ..Collection receptacle bodily placed within body
770 ..Collector combined with lancet
771 ..Indicator
772 .Flexible catheter guide
773 .Detecting sound generated within body
774 .Measuring anatomical characteristic or force applied to or exerted by body
775 ..Associated with birth
776 ..Gum
777 ..Mouth, tongue, or jaw
778 ..Vagina or uterus
779 ..Foot
780 ..Esophagus, stomach, or lower alimentary canal
781 ..Spine
782 ..Body movement (e.g., head or hand tremor, motility of limb, etc.)
3 .Specula
4 ..Endoscopes
5 ...Fenestrated
6 ...Illuminating
7 ....Cystoscopes and urethoscopes
8 ....Gastroscopes
9 ....Otoscopes
10 ..Pharyngoscopes
11 ...Illuminating
12 ..Non-pivoted gags
13 ...Illuminating
14 ...Veterinary
15 ..Tongue depressors

	DIAGNOSTIC TESTING
	.Specula
	..Tongue depressors
16	...Illuminating
17	..Pivoted
18	...Illuminating
19	...Veterinary
20	..Retractors
21	.Reflectors
22	..Illuminating
23	.Lamps
24 R	KINESITHERAPY
24 EL	..Extracorporeal shock wave lithotripsy external to the body only
24 AA	..Ultrasonic
24 A	..Ultrasonic
24.1	.With light, thermal and electrical application
24.2	..Appliances with applicators having specific movement
24.3	...Rolling
24.4	....Electrical application
24.5	...Electrical application
25 R	.Exercising appliances
25 A	...Eye exercisers
25 B	...Foot exercisers
26	..Hand and finger
28	..Artificial respiration
30	...Produced by vacuum and compression
30.2	....Conforms to shape of torso portion
31	..Obstetric
32	.Vibrators
33	..Couch, chair or other support
34	..Unbalanced weight
35	...Motor operated
36	....Electric motor
37	....Fluid motor
38	..Fluctuating fluid column
39	...Diaphragm actuated
40	...Pressure interrupted
41	..Vibrant armature
42	..Reciprocating weight
43	..Vibrant slide
44	.Appliances with applicators having specific movement
45	..Gyratory, motor operated
46	...Electric motor
47	...Fluid motor
48	..Oscillatory, motor operated
49	...Electric motor
50	...Fluid motor
51	..Reciprocatory, motor operated
52	...Electric motor
53	...Fluid motor
54	..Percussing
55	...Motor operated
56	..Rotary
57	..Rolling
58	...Belt supported
59	..Pinching
60	..Kneading
61	..Manipulating
62 R	..Frictioning
62 A	....Gum massagers
63	...Belt
64	..Vibrant membrane
65	..Lavative
66	...Fluid current
67	.Applicators
68	ORTHOPEDICS
68.1	.With light, thermal and electrical application
69	.Osteal adjusters
70	..Couches
71	...Extension
72	...Gap intermediated the ends
73	....Pivoted to pedestal
74	...Pivoted intermediate the ends
75	.Extension appliances
76 R	.Head
76 B	...Wrinkle eradicators
76 C	...Nose shapers
76 D	...Horn benders
76.5	..Eye
77	.Arm and hand
78	.Body
79	.Genital
80 R	.Leg and foot
80 A	...Abduction braces
80 B	...Bowed limb braces
80 C	...Knee braces
80 D	...Arch supports
80 DB	...Equipment for testing foot
80 E	...Drop-foot braces
80 F	...Pivotable leg braces
80 G	...Muscle assist systems
80 H	...Ankle braces
80 J	...Club-foot braces
581	..Boots, shoes and inserts
582	...With means to massage foot
583	...With means to turn foot about long axis of leg
584	....With means to turn foot about its long axis
585	...With means to turn foot about its long axis
586	...Arch support
587	....With suction retaining means
588	....With ventilating means
589	....Comprising outside shank stiffener
590	.....Shank integral with heel or sole
591	.....Adjustable
592	.....Including metal spring means
593	.....Metal plate only
594	....Comprising fluid cushion
595	....Comprising moldable composition, e.g., "plastic"
596	....Adjustable position or shape
597	.....By screw means
598	......With multiple screws
599	.....By spring placement
600	.....By shims
601	.....With plural selective positioning means
602	......Comprising alternatively usable fastening elements on insert
603	.......Comprising prongs
604	.......Comprising snap fasteners
605	......Comprising multiple alternately usable pockets
606	.....With pockets
607	....For the longitudinal arch
608	.....Single rigid metal plate only
609	.....Including metal spring means
610	.....Built into a boot or shoe
611	......Sling type
612	......Including arch-contacting metal plate
613	......Wedge on sole only
614	.....With heel support
615	......And metatarsal support
616	.......With metal reinforcing means
617	.......Integral
618	........Metal plate only
619	.......Comprising multiple layers
620	.......Including metal spring means
621	.....With metatarsal support
622	.....Comprising multiple layers
623	....Metatarsal support integral with shank stiffener
81 R	..Toe
81 A	....Toenail appliances
82	BANDAGING
82.1	.With light, thermal and electrical application
83	.Fracture apparatus

	BANDAGING
	.Fracture apparatus
83.5	..With walking devices
84 R	..Extension appliances
84 A	....Bowed leg splint
84 B	....Fracture reducing frames
84 C	....Portable traction applicators
85	...Splints
86	....Box
87 R	..Splints
87 A	....Finger splints
87 B	....Cervical traction splint
87 C	....Abduction splint
88	...Hinged
89 R	...Shaped and shapable
89 A	.....Shaped head splint
90	....Plastic
91 R	......Plaster of paris
91 A	.......Cast cutters and removers
93	...Box
94	..Slings
95.1	.Truss
96.1	..Abdominal
97.1	..Head
98.1	..Perineal
99.1	..Support
100.1	...Belt wholly flexible
101.1	....Elastic in part
102.1	...Belt and frame
103.1	...Frame hinged
104.1	...Frame wholly metallic
105.1	...Frame with auxiliary straps
106.1	...Pad carrier
107.1	....Detachable
108.1	....Pivoted
109.1	.....Resilient
110.1	.....Clamped
111.1	....Resilient
112.1	..Pad
113.1	...Composition
114.1	...Medicating
115.1	...Rigid
116.1	...Adjustable center
117.1	...Resilient
118.1	....Inflated
119.1	....Spring
120.1	....Stuffed
121.1	..Connections
122.1	...Ball and socket
123.1	...Hinged
124.1	...Clamped
125.1	...Resilient
126.1	....Spring only
830	.FEMALE REPRODUCTORY TRACT SHIELDS, SUPPORTS, OR BIRTH CONTROL DEVICES (e.g., pessaries, contraceptive devices)
831	..Fallopian occluders
832	..With contraceptive, spermacidal or antifertility agent
833	...Intrauterine
834	..Pessaries
835	...External supporters
836	...Inflatable
837	...Diaphragm
838	....Inserters and removers
839	...Intrauterine
840	....Inserters and removers
841	....With cervical cap
842	.MALE REPRODUCTORY TRACT SHIELDS OR BIRTH CONTROL DEVICES (e.g., prophylactics, vas deferens valves, etc.)
843	..Vas occluders (implants, etc.)
844	..Condoms
845	.BODY RESTS, SUPPORTS OR POSITIONERS FOR THERAPEUTIC PURPOSES (e.g., sexual, postural, head, etc.)

846	.BODY PROTECTING OR RESTRAINING DEVICES FOR PATIENTS OR INFANTS (e.g., shields, immobilizers)
847	..With fluid supply
848	..Antisnoring devices
849	..Drapes
850	...Incision or cavity inserted
851	...With handle or applicator means
852	...With surgical implement retaining means
853	...Fenestrated
854	....With cover (flap)
855	...Folded or stacked
856	...Tubular
857	..Head or face protector (e.g., lips, ears, etc.)
858	...Eye or nose protectors
859	...Oral cavity protectors
860	....Tongue
861	....Teeth protectors (e.g., mouthpieces)
862	.....Thermoplastic or thermosetting type
863	...Breath or contaminated air deflectors
864	...Aural protectors (e.g., ear)
865	....Inflatable or expandable
866	....External ear or head mounting means
867	....With noise or pressure attenuating means (e.g., dampening, filtering, etc.)
868	.....Valve means (e.g., diaphragm)
869	..Restrainers and immobilizers (e.g., strait jackets, etc.)
870	...Body type (e.g., backboards)
871	....Antisupination
872	....Crib blankets, sheets and covers
873	....Garment type (e.g., sleeping bags)
874	.....Vest or shirt type for upper torso
875	......Harness
876	....Belt or strap
877	...Intravenous limb restrainers/supports (e.g., armboards, etc.)
878	...Arm or hand
879	....Hand
880	.....Thumb/finger (e.g., anti-thumb sucking, etc.)
881	....Elbow
882	...Leg or foot
883	...Sexual restraints
884	....Intravaginal (e.g., antirape devices)
885	...Incontinent type
886	....With detector or alarm
887	..Nonabsorbent body opening occluders, seals or supporters (e.g., surgical or natural orifice occluders)
888	..Wound shields (e.g., vaccination)
889	..Chafing shields (e.g., decubitus pads, etc.)
890	...Nipple
891	...Crotch or thigh
892	...Joint or limb (e.g., foot, elbow, heel, knee, etc.)
893	....Foot/toe (e.g., corn, bunion, etc.)
894	.....Padded or cushioned
155	.Bandages
156	..Material and making
157	..Member inclosing
158	...Suspensory
159	....Garment attached
160	....Compressive
161	....Separable sack
162	....Sacks
163	..Head and face
164	...Chin supporter
165	..Arm and leg
166	...Ankle
166.5	...Arch
168	..Perineal support
169	..Bands

	BANDAGING
	.Bandages
	..Bands
170	...Roller
171	..Retainers
200.11	MEANS FOR PASSING RESPIRATORY GAS THROUGH BODY OF LIQUID BEFORE INHALATION
200.12	.Pocket type
200.13	.Plural orifice means passing gas into liquid
200.14	LIQUID MEDICAMENT ATOMIZER OR SPRAYER
200.15	.With tongue depressor
200.16	.Ultrasonic
200.17	.Rotating
200.18	.Spray impinged against baffle in or adjacent flow conduit
200.19	.Means for selectively dispensing different fluids
200.21	.Gas stream aspirating medicament from reservoir
200.22	..Gas flow induced by expansion chamber device (e.g., piston/cylinder ram, squeeze bulb, etc.)
200.23	.Pre-pressurized container holding medicament
200.24	RESPIRATORY METHOD OR DEVICE
200.25	.Artificial gill, or means for separating entrained air from liquid stream
200.26	.Means placed in body opening to facilitate insertion of breathing tube
200.27	.Gas stream directed away from face mask to penetrate contaminated atmosphere
200.28	.Body or head supported means, other than face mask or hood, with gas stream to screen face or penetrate contaminated atmosphere
200.29	.Underwater exhalation dispersing means
201.11	.Draw-type snorkel
201.12	.Corrective or magnifying lens combined with face mask having eyepiece or transparent viewing portion
201.13	.Inhaled gas heated or humidified by exhaled gas
201.14	.Viewing strip slidable relative to mask
201.15	.Means for keeping viewing member (e.g., eyeglass, transparent face shield, etc.) clear
201.16	..Wiper
201.17	..Mask with porous lower filtering portion and impervious upper portion shielding user's eyeglasses from exhaled breath
201.18	.Means for preventing nasal inhalation
201.19	.Means for transmitting, or facilitating, voice communication from face mask, hood, or helmet
201.21	.Using liquified oxygen
201.22	.Including body or head supported means covering user's scalp
201.23	..And nose and mouth also covered
201.24	...Face mask, visor, or like face-covering means hinged to scalp covering means
201.25	...Means for removing substance from respiratory gas
201.26	...Including means inserted in mouth
201.27	...Diving or swimming apparatus
201.28	...Having valve, or valve control, structure
201.29	...Garment associated with head cover
202.11	....Flight suit
202.12	.Hypobaric body chamber
202.13	.Combined with or convertible to a nonrespiratory device, or having nonrespiratory function other than hyperbaric treatment
202.14	..Having buoyancy chamber
202.15	..Having means for facilitating ingestion of food or drink
202.16	..Means effecting nonrespiratory medical treatment
202.17	...Device usable either as inhaler or means for rubbing medicament on body surface
202.18	..Pillow or other support exclusively for head
202.19	..Garment
202.21	.Smoking device simulator
202.22	.Means for indicating improper condition of apparatus
202.23	.Means for preventing electric shock or arcing
202.24	.Means for protecting user from pressure wave or flame resulting from gas ignition
202.25	.Ozone or ion generation
202.26	.Gas produced by electrolysis or chemical reaction
202.27	.Means for quickly connecting or disconnecting apparatus components
202.28	.Means using rescuer's breath for supplying respiratory gas to another person
202.29	..Movable wall separating breath of rescuer and victim
203.11	..Valved
203.12	.Means for mixing treating agent with respiratory gas
203.13	..Means for supplying anesthetic under patient's control
203.14	..Control means responsive to condition other than user's airway pressure
203.15	..Particulate treating agent carried by breathed gas
203.16	..Means for mixing respiratory gas with water vapor and another treating agent
203.17	...Electrically heated means producing water vapor
203.18	..Means for mixing treating agent with oral exhalation and directing mixture into nasal passage
203.19	..Means for controlling gravity flow of treating agent from holder
203.21	..Means broken or pierced to supply treating agent
203.22	..Means for supplying, or permitting inhalation of, separate streams of treating agent/respiratory gas mixture through nasal passages
203.23	..Pocket-type draw tube having discharge aperture for air/treating agent mixture at end thereof
203.24	...With gas flow control means other than pivotal or removable closure
203.25	..Means for varying treating agent/respiratory gas ratio
203.26	..Means for heating treating agent, respiratory gas, or mixture thereof
203.27	...Electric
203.28	..Including expandable bag, bellows, or squeeze bulb
203.29	..Including face mask covering nose and mouth
204.11	..Treating agent holder solely supported by head
204.12	...Holder solely supported by nose
204.13	..Treating agent evaporated from extended surface absorbent (e.g., sponge, fibrous wick, screen, etc.)

RESPIRATORY METHOD OR DEVICE
.Means for mixing treating agent with respiratory gas
204.14 ..Respiratory gas passed over surface of liquid treating agent in reservoir
204.15 .Means for cooling respiratory gas or respiration device
204.16 ..Substance removed from respiratory gas by cooling
204.17 .Means for heating respiratory gas or respiration device
204.18 .Means for supplying respiratory gas under positive pressure
204.19 ..Permanent magnet included in gas flow control means
204.21 ..Electric control means
204.22 ...Means for sensing partial pressure, or amount, of component in gas mixture
204.23 ...Means for sensing condition of user's body
204.24 ..Fluidic control device utilizing Coanda effect or jet impingement to alter fluid flow
204.25 ..Gas stream passed through jet nozzle or venturi passage
204.26 ..Gas supply means responsive to breathing
204.27 ...Snap action toggle included in control mechanism
204.28 ...Bag or bellows included in control mechanism
204.29 ..Control means responsive to variation in ambient pressure
205.11 ..Means for varying air/oxygen ratio
205.12 ..Means for removing substance from respiratory gas
205.13 ..Respiratory gas supplied from expandable bag, bellows, or squeeze bulb
205.14 ...Means for adjusting gas volume delivered to user from bag, bellows, or bulb during inflation-deflation cycle
205.15 ...Held in pressurizable housing
205.16 ...Biased to contracted or expanded position by mechanical means (e.g., weight, spring, etc.)
205.17 ...Rebreathing bag or bellows
205.18 ..Gas supplied by piston pump
205.19 ..Suction means for assisting exhalation
205.21 ..Means broken or pierced to supply gas
205.22 ..Gas container supported on body
205.23 ..Indicator structure
205.24 ..Valve, or valve control, structure
205.25 ..Face mask covering a breathing passage
205.26 ..Atmosphere enclosure (e.g., oxygen tent, hyperbaric chamber for pressurizing whole body, etc.)
205.27 .Means for removing substance from respiratory gas
205.28 ..Carbon dioxide
205.29 ..Particulate filtering
206.11 ...Including means inserted in nasal passage
206.12 ...Face mask covering a breathing passage
206.13 ....Mask attached to ear
206.14 ....Mask adhesively attached to face
206.15 ....With gas flow control valve
206.16 ....With frame, shaping means, reinforcement, or filter formed of wire
206.17 ....With separate filter encircling element, or housing, securing filter on mask
206.18 ....Covering nose only
206.19 ....Body of mask, other than viewing means, formed of porous filter material (e.g., surgical mask formed entirely of cloth, etc.)
206.21 .Face mask covering a breathing passage
206.22 ..Means for handling liquid (e.g., saliva, breath condensation, etc.) accumulated in mask
206.23 ..Mask/eyepiece sealing structure
206.24 ..Mask/face sealing structure
206.25 ...Adhesive
206.26 ...Closed air-filled passage adjacent mask edge (e.g., tubular bead, etc.)
206.27 ..Means holding mask readily accessible for use
206.28 ..Covering nose and mouth
206.29 ...Including means inserted in mouth
207.11 ...Structure of means securing mask to head
207.12 ...Valve for controlling gas flow
207.13 ..Covering nose only
207.14 .Respiratory gas supply means enters mouth or tracheotomy incision
207.15 ..Breathing passage occluder
207.16 ..Valve for controlling gas flow
207.17 ..Holding strap extending curcumferentially of head or neck
207.29 DEVICE FOR CREATING A TRACHEOTOMY INCISION
207.18 .Respiratory gas supply means enters nasal passage

****
Former subclasses 207.19 to.
274 (MEDICATORS) of Class...
128, Surgery have been......
reclassified in Class 604,..
Surgery. Class 604, Surgery.
is considered an integral...
part of Class 128, Surgery..
and follows the schedule....
hierarchy of Class 128. ....
In addition, Class 604......
retains all definitions and.
class lines established in..
and for Class 128. ....
****

****
Former subclasses 275 to....
302 (RECEPTORS) of Class....
128, Surgery have been......
reclassified in Class 604,..
Surgery. All statements in..
the preceeding paragraph....
in respect to hierarchy.....
and definition relationship.
between Class 128 and 604...
*apply to this area as well. *
****

****
Class 606 is an integral....
part of Class 128, Surgery..
as shown by the position of.
this box. This class........
provides for the application
of light, cryogenics, and...
electrical applicators to...
the body, orthopedic........
instrumentation including...
internal and external.......
fixators, orthopedic cutting
devices and surgical........
instrumentation. ....
****

362 LIGHT, THERMAL AND ELECTRICAL APPLICATION
363 .Exercising
364 ..Push and pull

	LIGHT, THERMAL AND ELECTRICAL APPLICATION
365	.Bathing apparatus
366	..Shower baths
367	..Vapor baths
368	...For body member
369	..Tubs
370	...For body member
371	.Cabinets
372	..Solar
373	..Recumbent
374	..Erect with head outside
375	..For body member
376	.Couches, beds, chairs, and seats
377	..Chairs and seats
378	...With current generator
379	.Body wear
380	..Head, face and neck
381	..Hand
382	..Foot
383	...Insoles
384	..Bands and belts
385	...With attachments
386	....Genital
387	...With current regulator
388	...With adjustable electrode
389	...With galvanic electrode
390	..Plasters
391	..Battery elements
392	...Link type
393	.Brushes and combs
394	.Canes and sticks
395	.Light applicators
396	..Lamp and casing
397	...With transparent rod
398	..Transparent rods
399	.Thermal applicators
400	..With fluid supply
401	..Internal application
402	..Body member inclosing
403	..Thermal material receptacles
419 R	.Electrical systems
419 N	...Enviromental condition systems
419 E	...Bladder stimulators
419 F	...Bone growth stimulators
419 G	...Respiration stimulators
419 P	...Pacemakers
419 PG	....Pulse generating circuits
419 PS	....Power supply and battery charging circuits
419 PT	....Component or characteristic testing circuits
419 D	...Defibrillators
419 S	...Shock therapy
419 B	...Biological power supply
419 C	...Carotid sinus nerve stimulators
420 R	..Combined circuits
420 A	....Interferential current stimulators
420.5	..Direct electrical body stimulation by audio signal (e.g., nerve stimulating)
420.6	...Surgically implanted
421	..Pulsating and alternating
422	...Oscillation circuits
423 R	...Circuit interruption
423 W	.....Leg muscle stimulators
424	....Magnetic vibrators
783	.Electrical energy applicator
784	..Placed in body
785	...Anchored
786	...Catheter type
787	...Mouth
788	...Rectum, vagina, or uterus
789	...External auditory canal
790	..Rotated while contacting body
791	..Head-supported
792	...Mounted on, or consisting of, mask covering nose and chin
793	...Overlying eye
794	..Applying current to male genital organ
795	..Applying current to foot
796	..Applying current to hand
797	...Writing instrument
798	..Flexible sheet or resilient pad
799	..Currents simultaneously applied along plural paths in body
800	..Hand-held
801	...Battery-holding grip
802	..Means for holding applicator against body
803	..Means for wetting contact point between applicator and body
804	..High frequency radiation
897	.MISCELLANEOUS
898	..Methods
899	..Devices placed entirely within body and means used therewith (e.g., magnetic implant locator)

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CROSS-REFERENCE ART COLLECTIONS

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900	BLOOD PRESSURE RECORDER
901	SUPPRESSION OF NOISE IN ELECTRIC SIGNAL
902	BIOLOGICAL SIGNAL AMPLIFIER
903	RADIO TELEMETRY
904	TELEPHONE TELEMETRY
905	FEEDBACK TO PATIENT OF BIOLOGICAL SIGNAL OTHER THAN BRAIN ELECTRIC SIGNAL
906	MULTIPHASIC DIAGNOSTIC CLINIC
907	ACUPUNCTURE
908	PATIENT PROTECTION FROM ELECTRIC SHOCK
909	BREATHING APPARATUS WITH MEANS FOR PREVENTING PATIENT CROSS-CONTAMINATION
910	ANESTHESIA GAS SCAVENGING SYSTEM
911	UNILIMB INHALATION-EXHALATION BREATHING TUBES
912	CONNECTIONS AND CLOSURES FOR TUBES DELIVERING FLUIDS TO OR FROM THE BODY
913	BREATHABLE LIQUIDS
914	REBREATHING APPARATUS FOR INCREASING CARBON DIOXIDE CONTENT IN INHALED GAS
915	ULTRASOUND MAMMOGRAPHY
916	ULTRASOUND 3-D IMAGING
917	BODY FLUID, DEVICES FOR PROTECTION THEREFROM (E.G., AIDS, HEPATITUS, ETC.)
918	.Condoms and shields
919	.Syringe, means to protect user

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DIGESTS

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DIG 1	Motorized syringe
DIG 3	Heart-lung
DIG 6	Intravenous injection support
DIG 7	Servo-systems
DIG 8	Collagen
DIG 10	Fluid amplifiers
DIG 12	Pressure infusion
DIG 13	Infusion monitoring
DIG 14	Teflon
DIG 15	Velcro
DIG 18	Heat shrinkable film
DIG 19	Clavicle splint
DIG 20	Inflatable splint
DIG 21	Silicone
DIG 22	Blood coagulation
DIG 23	Cervical collars
DIG 24	Medical-surgical bags
DIG 25	Artificial sphincters and devices for controlling urinary incontinence
DIG 26	Cannula supporters
DIG 27	Cryogenic

270	ANTISMOKING PRODUCT OR DEVICE, I.E., DETERENT
271	.No smoke to user
272	.Smoke to air ratio controlled
273	.Smoking simulator
274	PRODUCT OR DEVICE HAVING IDENTIFIABLE CONSTITUENT TO FLAVOR OR ENHANCE FLAVOR
275	.Naturally occurring or synthetic duplicate
276	.Organic compound
277	..Heterocyclic
278	...Containing nitrogen as hetro atom
279	..Containing a sulphor atom
280	CIGAR OR CIGARETTE MAKING
281	.Including perforating
282	.Including arranging, collecting, or delivering
283	..And packing
284	.With coating or printing
285	.Including fingerlike member which alternately engages and releases product
286	.With cleaning away unwanted product component, e.g., gum or adhesive
287	..By pneumatic means
288	..By liquid means
289	..By scraping, wiping, etc.
27.1	.Including cooperating surfaces to induce rolling
28	..Combined
29	...With tip or mouthpiece applier or former
30	....With stationary smoother
31	...With tobacco treatment
32	...With subsequent wrapping or forming operations
33	...With wrapper cutter
34	....Continuous wrapper
35	....With adhesive supply or applier
36	...With pre-cut wrapper feed and/or holder or smoother
37	...With adhesive supply or applier
38	...With filler tobacco or bunch feeder
39	....With plural feed
40	....With bunch separator
41	.....With bunch pre-compressor
42	......Ribbon feed
43	......Table mold
44	.....With hopper discharger
45	...With bunch pre-compressor
46	...With end trimmer or completed article cutter
47	..Apron type
48	...With moving table
49	....Rotating or oscillating table
50	...With stationary table
51	....With movable roll type member
52	.....Swinging roll support
53	......Vertical axis
54	...Aprons
55	..Belt type
56	..Roller type
57	..Roller
57.5	..Drum and concave surfaces
58	.Wrapping devices
59	..Spirally wound continuous wrapper
60	..Longitudinally fed continuous wrapper
61.1	...With tip or mouthpiece applier or former
62	...With tobacco treatment
63	....With completed article cutter
64.1	.....With tobacco rod preshaper
64.2	......With transverse or longitudinal compression
65	...With completed article cutter
66.1	...With tobacco rod preshaper
66.2	....With transverse or longitudinal compression
67	...With wrapper sealing
68	....With heating means
69	....With adhesive supply or applier
70	..Tube filling type
71	...With tip or mouthpiece applier or former
72	....Plug inserting
73	...With tube making
74	...With hopper feed of tubes
75	...Mold with encircling wrapper tube
76	..With tip or mouthpiece applier or former
77	.Molding or forming
78	..Combined
79	...With tobacco treatment
80	...With plural molding or forming
81.1	...With tobacco or bunch feed
82	...With bunch remover and/or transfer
83.1	...With trimmer, perforator or slitter
84.1	..Continuous rod or ribbon former
84.2	...With transverse compression
84.3	...With pneumatic assist for tobacco movement
84.4	...With trimmer for rod or ribbon
85	..Molds
86	...Plural
87	....Rotary or endless carrier
88	.Tip or mouthpiece applying or forming
89	..End tucker, folder, crimper, smoother
90	...With adhesive supply or applier
91	...With cutter or trimmer
92	...With heater and/or end punch
93	...Rotating type
94	..Plug attaching or inserting
95	..Sheet material tip
96	.Recovery of tobacco from cigarettes and cigars
105	.Wrappers holders and carriers
106	.Cigar tagging or labeling
107	.Bundling
108	.Tobacco feeding
109.1	..With brushing, carding, or picking means
109.2	...With separator for tobacco dust, stems or foreign material
109.3	...With vibrating tamper or rake
110	..With separator or suction device
111	PLUG OR COMPRESSED SHAPE MAKING
112	.Packing or bundling
113	..Tagging or labeling
114	...With tag or label making
115	.Turret type
116	.Continuous sheet type
117	..With cutting
118	.With cutting
119	.Molds
290	TOBACCO TREATMENT
291	.Puffing
292	..Including freeze drying
293	..By chemical reaction
294	..By radiant energy
295	..By high frequency field
296	..By contact with hot gaseous medium
297	.Extraction of component, other than moisture, by contact with diverse medium
298	..By organic solvent
299	.With electrical or radiant energy
300	.With fluid or fluent material
301	..Including means to create a vacuum
302	..Including means to circulate fluid
303	...And temperature or humidity control of fluid
304	...Including means to convey tobacco
305	..Within rotary drum-type apparatus
306	..Including means to convey tobacco

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	TOBACCO TREATMENT
	.With fluid or fluent material
	..Including means to convey tobacco
307	...Including expressing rolls
308	..Containing enzymes to cause fermentation
309	..Other than water, steam, or air
310	...Organic
311	.Including leaf disintegration
312	..And separation of fibers of different character
313	.Leaf stemming
314	..With stem cleaning
315	..And straightening, smoothing, flattening, or cleaning
316	...Booking
317	....Stemmed by rotary or endless cutter
318	..By fluid current
319	..By tearing
320	...Including transverse stem cutting
321	...Card clothing type
322	..By cutting
323	...Stem die type
324	.Leaf straightening, brushing, smoothing, rolling, corrugating, or flattening with or without stem crushing
325	..And cleaning
326	..Booking
327	.Leaf associating or disassociating
328	MAKING OR USING TOBACCO USERS' APPLIANCE
329	TOBACCO USERS' APPLIANCE
330	.Device used for smoking
173	..Smoke washing type
174	..Wind or ash guarding or ash receiving
175	...Cigar or cigarette holders
176	...Pipe covers
177	....With tamper or tamper type
178	..Combined or convertible
179	...Plural smoking devices
180	...With storage means, feeder, and/or plural bowl
181	....Follower
182	...With ejector
183	....Tobacco support type
184.1	...With cleaner, stirrer, or tamper
184.2	....Pipe bowl type
184.3	....With cleaner extending or operable through external passage
185	...With igniter and/or match scratcher
186	...With support
187	..Cigar and cigarette holders
188	...With piercing device
189	....Smoke conducting
190	...With movable gripper or holder
191	..Tubes
192	..Foldable or collapsible
193	..Base burner type
194	..Heat exchanging and/or insulating
195	...Cooling air passages
196	...Spaced inner bowl
197	....Plural reversely extending passages
198.1	..Supplemental or substitute air inlet
198.2	...Adjustable air inlet type
199	..Longitudinally divided
200	..Smoke treating
201	...Material separator and trap
202	....Filter and/or absorber
203	.....Absorber only (no filtering)
204	......Lined or coated bowls or stems
205	.....Tobacco supports
206	......With valve or external passage closure
207	.....Absorbent or particulate
209	....Spiral passage
210	....Serial checks or baffles
211	....Chamber enclosed tubes or nipples
212.1	.....Smoke direction changing
212.2	......Concentric ducts
213	....Plural reversely extending passages
214	....Bowl detachable from neck cup
215.1	....With valve in smoke path or removable, external passage closure
215.2	.....With filter
215.3	.....Valve
216	..Special smoke passages
217	...Spiral passage
218	...Plural reversely extending
219	..Lined or coated
220	...Bowl
221	..Reversible bowl
222	..Bowl detachable from neck cup
223	..With valve or external passage closure
224	..Tobacco supports
225	..Joints and connections
226	..Bowls
227	..Stems, bits or tips
228	...With sleeve or cap
229	...Outlet end shapes and orifices
230	..Materials and compositions
231	.With ash receiver
232	..Smoking device cleaner
233	..Tip cutter, perforator or slitter
234	..Igniter or scratching surface
235.1	..Extinguisher
236	...Liquid type
237	...Movable extinguishing member
237.5	...Split tube type
238	..And devices for other use
239	...Match holder
240.1	..Cigar, cigarette, or smoking device rest or holder
241	...With special receiver support
242	...With closure or covered compartment
242.5	...With cigar or cigarette ejector, dumper, or advancer
242.6	...With grid or grille
	.Smoking device cleaners
243	..Combined or compound
244	..Fluid type
245	..Stem
246	..Bowl
247	.Pipe tampers
248	.Cigar and cigarette end cutters, combined
249	..With igniter or scratching surface
250	..With receptacle or holder
250.1	...Dispensing type
251	...Match receptacle
252	..With perforator or slitter
253	.Cigar tip perforators or slitters
254	..Pin or drill
255	..Punch
256	.Cigar or cigarette extinquishers
257	.Supports
258	..Finger ring type
259	..Staff type
260	..Smoking device
331	SMOKE SEPARATOR OR TREATER
332	.Having a polymer
333	.By electric, magnetic, or radioactive action
334	.By chemical reaction, e.g., ion-exchange, chelating, catalytic, etc.
335	.By adding constituent to smoke stream
336	..Air
337	..Having destructible, fusible, soluble, or deformable container for treatment material
338	.Having means to vary smoke flow rate
339	.Interior surface causes particular flow characteristic
340	..By use of specific filter mass
341	.Plural diverse elements

	SMOKE SEPARATOR OR TREATER
	.Plural diverse elements
342	..Including particulate material
343	..Plasticizer or adhesive coating
344	..Occupying plural, separate, distinct zones
345	.Including a cellulose ester or ether
346	.With indicator or inspection means
347	TOBACCO OR TOBACCO SUBSTITUTE PRODUCT OR COMPONENT PART THEREOF
348	.Pipe cartridges
349	.With ash retainer or means to prevent or retard burning
350	.With means to pierce or protect cigar end structure
351	.With means to facilitate ignition
352	.Compositions, e.g., smoking or chewing mixture or medium
353	..Reconstituted tobacco
354	...Material coated with tobacco dust or particle
355	...Tobacco particles bonded by nontobacco adhesive
356	...Having tobacco extracts or tobacco paste
357	...Tobacco sheet formed from wet ground or wet beaten tobacco
358	...Wrapper
359	..Tobacco substitute, i.e., nontobacco
360	.Cigar or cigarette
361	..End structure
362	...Coated or impregnated
363	...Filler penetrating
364	..Blank or filler
365	..Wrapper or binder
366	.Plug tobacco
367	..Having specific shape
368	..With indentification, marking, label, or tag
369	METHOD OR APPARATUS FOR MAKING TOBACCO SUBSTITUTE
370	METHOD OR APPARATUS FOR MAKING RECONSTITUTED TOBACCO
371	.Dust impingement
372	.Slurry
373	.Impregnation of web
374	.Paper process
375	.Extrusion

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CROSS-REFERENCE ART COLLECTIONS

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900	LIQUIFIED GAS EMPLOYED IN PUFFING TOBACCO
901	ORGANIC LIQUID EMPLOYED IN PUFFING TOBACCO
902	INORGANIC CHEMICAL AGENTS EMPLOYED IN PUFFING TOBACCO
903	FIXING THE PRODUCT AFTER PUFFING
904	PNEUMATIC MEANS FOR SENSING CONDITION OR CHARACTERISTIC
905	RADIATION SOURCE FOR SENSING CONDITION OR CHARACTERISTIC
906	SENSING CONDITION OR CHARACTERISTIC OF CONTINUOUS TOBACCO ROD
907	EJECTION OR REJECTION OF FINISHED ARTICLE DUE TO DETECTED OR SENSED CONDITION
908	SENSING UNIQUE CHARACTERISTIC OR SPECIFIC CONDITION OF FINISHED PRODUCT
909	SENSING CONDITION IN FEED HOPPER FOR CIGAR OR CIGARETTE MAKING
910	SENSING OR DETECTING MALFUNCTION IN CIGAR OR CIGARETTE MAKER

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DIGEST

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DIG 1	Pipe literature

200 METHODS
201 .Artifcial hair structure making or attaching
202 .Hair treatment by application of specific chemical composition
203 ..For deformation, setting or holding (e.g., curling or waving)
204 ...Relaxing or reducing agent followed by fixing or neutralizing agent (e.g., "permanent")
205 ....Including specified treatment interval
206 ...And application of heat
207 ...And use of specific device
208 ..Dyeing or bleaching
209 ..Plural separately applied or supplied named compositions
210 .Hair deformation or set (e.g., curling, waving)
211 ..And application of heat
57.1 HAT FASTENING DEVICE
58 .Chin or back head strap or band
59 .Head clamping
60 .Hair carried
61 .Cord or loop with hairpin
62 .Rotary hooks or spirals
63.1 .Includes pivotally mounted hair engaging element
64.1 ..And similar opposed element linked therewith
65.1 .Includes slidably guided hair engaging element
66.1 ..And similar opposed or skewed element linked therewith
68.1 ..Having pointed tip (e.g., attached pin)
69.1 ...And tip holding or protecting means
71.1 ...And position holding means for element
72.1 .Includes holding or protecting means for tip of hair engaging element
212 HAIR DEVICE
213 .Dressing or cutting guide or gauge
213.1 ..Including comb or means to mount comb
214 ..Trim gauge or guide
215 .Mustache
216 .Eyelash or eyebrow
217 ..Crimper or curler
218 ..Including cosmetic applicator (e.g., mascara applier)
219 .Comb
101 ..Hat anchoring
102 ..With mirror
103 ...On teeth guard or sheath
104 ..With manicure device
105 ..With false hair attached
106 ..With back mounted foundation frame
107 ..With annular row of teeth
108 ..With hair contacting absorbent web, cord, or pad
109 ...In contact with tooth
110 ....At juncture with back
111 .....In aperture through tooth
112 ..With orifice for applying fluent material
113 ...In tubular tooth
114 ....At tooth tip
115 .....Flow restrictor through orifice
116 ...Between teeth
117 ..With removable heat storing means
118 ..With heater
119 ..With teeth cleaner
119.1 ..Motor driven
120 ..With brush or bristles
121 ...Teeth sheathed in brush back or handle
122 ..With winding mandrel
123 ...Comb retractable into mandrel
124 ..With hair smoothing bar or pin
125 ..With deposit or collection groove
126 ..Plural combs or spaced tooth rows
127 ...With intermediate retainer tongue
128 ...Spaced spring or strand connectors
129 ...Swingably or slidably connected
130 ....On head receiving band
131 ....By parallel links
132 ....Pivoted end on end
133 .....Opposite ends interlock
134 .....Pivoted axis parallel to teeth
135 ....Longitudinal pivot
136 ....Back sliding along back
137 ...Transversely staggered teeth
138 ...Intermeshing teeth
139 ...Oppositely directed rows
140 ...Offset or twisted back
141 ...Longitudinally spaced rows
142 ...Side by side or parallel rows
143 ..With teeth guard or sheath
144 ..With hair engaging retainer member
145 ...Pivoted on comb
146 ..With attaching clasp or loop
147 ..With storage cavity in back
148 ..Combined
149 ..With finger hole or recess
150 ..With projecting handle
151 ..Rotatable or pivoted teeth
152 ..Separably mounted teeth
153 ...On tie rod through stack
154 ...In back apertures
155 ..Channel encased back
156 ..With teeth spreadable by flexing back
157 ..Constriction in kerf
158 ..Back beveled or rounded between teeth
159 ..Rounded teeth tips
160 ..Bent or slanted teeth
161 ..With long and short teeth
162 ..Layered or coated
163 ..Compositions and materials
220 .Having heat generating composition
221 .Having hair treating composition
222 .Flexible wrap for curl
223 .Having hair shaping surface or form (e.g., crimper or curler)
224 ..Having cooperating crimping jaws
225 ...Including plural grooved jaw
226 ..Having winding form or mandrel (e.g., curler)
227 ...With heater, fluid supply, or surrounding fluid housing
228 ....Including fluid supply or inlet for introducing fluid (e.g., steam) into surrounding housing
229 ....Electrical heater
230 .....Having end outlet for hair
231 .....Separable squeeze-open clip
232 .....And transversely pivoted jaw for clamping hair to mandrel (e.g., curling iron)
233 ....Including heat storage means heated prior to application
234 .....And pivoted hair fastening jaw or clip
235 ....Having end outlet for hair
236 ....Including hair clamp spaced laterally from mandrel (e.g., scalp protector)
237 ...Rotatable form or mandrel
238 ....Including motor or mechanical rotating means
239 ....Including clutch or ratchet
240 .....And spaced scalp protector
241 ....And laterally spaced clamp or pad (e.g., scalp protector)
242 ....Including means to accomodate separable curl retainer (e.g., bobby pin)

	HAIR DEVICE
	.Having hair shaping surface or form (e.g., crimper or curler)
	..Having winding form or mandrel (e.g., curler)
243	...Having scalp protector
244	....Laterally spaced clamp having pivoted jaws
245	...Hair retained
246	....Including bendable wire fastener, form, or mandrel
247	....Pliant form or mandrel having connectable ends
248	....Including string or elastic band fastener
249	.....And discrete clasp or pivoted mandrel portions
250	.....Cylindrical or hollow form or mandrel
251	....And separable fastener
252	.....Circumferential clamp
253	....Including pliant fastener or connection to mandrel
254	....Including relatively movable hair fastener attached to form or mandrel
255	.....Pivoted to form or mandrel
256	......Plural pivoted fasteners or fastener sections
257	.......Including pivoted bail
258	......Pivoted bail
259	......Including retaining clasp
260	.....Including retaining clasp
261	....Plural forms or mandrels
262	....Having peripheral projections
263	...Having pivoted hair clamping jaw or plural pivoted mandrels
264	...Having means to accomodate separable curl retainer (e.g., bobby pin)
265	...Having movable or collapsible handle or mandrel sections
266	...Including relatively movable hair contacting element (e.g., curl ejector winder)
267	...Including end plate
268	...Including grooved form or mandrel surface (e.g., spiral rib)
269	..Having electrical heater
270	.Including means to isolate or part a tress of hair for chemical treatment (e.g., frosting cap or purse)
271	.Electrical appliance or attachment (e.g., hair styler or attachment)
272	..Including liquid or vapor reservoir or outlet
273	.Hair fastener
274	..Hairnet or cage
275	..Ornament holding (e.g., bow or ribbon)
276	..Clip or hairpin
277	...Squeeze-open clip
278	...Including retaining clasp (e.g., barrette)
279	....Pivoted arms
280	...Hairpin having plural prongs (e.g., bobby pin)
281	....And third prong, discrete retainer, or opener
282	.....Pivoted or sliding
283	....Crossed prongs
284	....Contacting prongs
53	.Hair structures
54	..Foundation frames
55	...Rolls or rats
56	..Making
73	NAIL DEVICE (E.G., MANICURING IMPLEMENT)
73.5	.Combined
73.6	..With motor
74.5	..With fluent material feed

75	..With storage cavity
75.3	.Compound tools
75.4	..With cutter
75.5	...Plural cooperating blade
75.6	..With abrader, file or buffer
75.8	.Driven type
76.2	.Folding, retractable or sheathed tool
76.4	.Abrader, file or buffer
76.5	..With separable holder
285	.Template or mask
286	TOILET KIT
287	.Having sliding drawer
288	.Illuminated
289	.Shaving
290	..Having brush and soap receptacle or receiver
291	..Having mirror
292	..Having blade conditioning means
293	.Powder box and applicator (e.g., compact)
294	..Combined, or having plural cosmetic or applicator compartments or receivers
295	...Pivoted compartments or receivers
296	....And mirror pivoted between covers
297	...Including compartment or receiver for stick applicator (e.g., lipstick)
298	..Having powder dispenser
299	...Including discharge assistant
300	..Having plural closures
301	..Having mirror
302	...And wiper for mirror
303	...And cake holding, mounting, or ejecting means
304	...Particular mirror mounting
305	....Circular powder box
306	...And powder sifter
307	..Having powder sifter
308	.Including toothbrush
309	..And pick, scraper, floss, or mirror
310	..Plural toothbrushes or receivers therefor
311	..Having receptacle in toothbrush handle
312	.Having flexible carrying case
313	.Including brush
314	.Having plural compartments or receviers
315	..In case having hinged or pivoted closure
316	.Including mirror
317	.Including cosmetic applicator
318	..Stick applicator
319	TEMPLATE OR MASK
320	SHAPED COSMETIC APPLIER
321	TOOTHPICK
322	.And motor driven mechanism or fluid applicator
323	.Having thread holder (e.g., flossing implement)
324	..And container or support for thread supply
325	...Including rotatably mounted thread spool
326	...Including relatively movable thread clamping surfaces
327	..Including relatively movable thread clamping surfaces
328	.Folded or housed in tool handle
329	.Having specified shape
330	SPREADER OR MANIPULATOR FOR HAIR FASTENER (e.g., bobby pin opener)
331	.Body worn
332	.Including dispenser or ejector
333	MISCELLANEOUS
	*******************************
	CROSS-REFERENCE ART COLLECTIONS
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901	COMB TOOTH SHAPE
902	LIQUID TREATING FORMS AND MANDRELS

PROCESSES
1 .Including application of electrical radiant or wave energy to work
2 .For metallic, siliceous, or calcareous basework, including chemical bleaching, oxidation or reduction
3 ..Including acidic agent
4 .Including forming a solidified or hardened coating for cleaning
5 .Including melting
6 .Using solid work treating agents
7 ..In particulate or comminuted form
8 ..Hollow work, internal surface treatment
9 ..Longitudinally traveling work, of bar, strip, strand, sheet or web form
10 .Including regeneration, purification, recovery or separation of agent used
11 ..Gas or vapor form agent condensed or absorbed on work
12 ..By distilling, or liquefying vapors of, used agent
13 ..By crystallizing, precipitating, or eliminating dissolved solids from used agent
14 .Work in coiled form during treating agent application
15 .Longitudinally traveling work of bar, strip, strand, sheet or web form
16 .Including distortion or deformation of work
17 ..Produced by temperature change, centrifugal force, or fluid pressure shock
18 .Combined (e.g., automatic control)
19 .Including work heating or contact with combustion products
20 ..Carbon removal (e.g., from engines)
21 .Including use of vacuum, suction, or inert atmosphere
22.1 .Hollow work, internal surface treatment
22.11 ..Pipe, tubing, hose, or conduit
22.12 ...With pressurized fluid or fluid manipulation
22.13 ...With inorganic alkaline material treating agent
22.14 ...With organic treating agent (e.g., solvent, surfactant, or reactant yielding soluble product, etc.)
22.15 ...With steam utilization
22.16 ..With inorganic salt treating agent
22.17 ..With inorganic alkaline material treating agent
22.18 ..With pressurized fluid or fluid manipulation
22.19 ..With organic treating agent (e.g., solvent, surfactant, or reactant yielding soluble product, etc.)
23 ..Work or work parts movable during treatment
24 ..Movable fluid applying nozzle and/or with plugging or sealing of work passage or opening
25.1 .Work handled in bulk or groups
25.2 ..Kitchen or tableware
25.3 ..Food
25.4 ..Manufactured articles
25.5 ..Work stationary or moved countercurrently
26 .Using sequentially applied treating agents
27 ..One a neutralizer for another
28 ..One an acid or an acid salt
29 ..One a soap or an alkaline agent
30 ..Including steam, gaseous agent or temperature feature
31 .Gas or vapor condensation or absorption oowork
32 .With work or work parts movable during treatment
33 ..Centrifugal force and/or rotated work body
34 .With treating fluid motion
35 ..Caused by heating
36 ..Plural, separately fed, and either simultaneously applied or admixed, treating fluids
37 ..Gas or vapor blasts or currents
38 .Paints, varnishes, lacquers, or enamels, removal
39 .Carbon removal
40 .Oils, grease, tar, or wax removal, by dissolving
41 .Metal base work, acid treating
42 .Miscellaneous
APPARATUS
43 .With relatively movable finder and orienter of apertures or passages in work
44 .Operating or controlling device engaged and moved by work or separate work holder
45 ..For vehicle or wheel-form work
46 ..Devices other than valves (e.g., automatic work counters)
47 ...Pumps
48 ..Endless belt or rotary work carriers
49 ..Through-way work carriers or guides
50 ..Plural means to supply or apply plural different fluids separately or admixed
51 ..With means for moving work or work-holder by fluid impact thereagainst
52 ..Engaging element having rotary swinging, rocking or pivoted motion
53 ...External and internal fluid applying means
54 ..External and internal fluid applying means
55 ...External applying jet means
56 R .Automatic controls
56 D ...Dishwashing machine
57 R ..With electric control
57 D ....Dishwashing machine
57 DL .....With door latch control feature
58 R .Electrically controlled
58 D ...Dishwashing machine
58 DL ....With door latch control feature
59 .With work assembling or disassembling means
60 .With interstation fluid flow means
61 .Sequential work treating receptacles or stations with means to transfer work or fluid-applying devices
62 ..With initial work emptying, inverting, orienting or puncturing means
63 ..With means for treating work other than with fluids, draining or heating
64 R ..For sheet, web, strand or bar form work, longitudinally traveling
64 P ....Photographic
65 ..With screw work conveyor
66 ..With work transfer from one movable carrier to another
67 ...Including endless belt type
68 ....With splash, spray or jet applying means
69 ...Between plural rotary carriers on same axis
70 ..With endless belt work transfer means
71 ...Horizontal axes
72 ....With splash, spray or jet applying means
73 .....With work immersing means

APPARATUS
.Sequential work treating receptacles or stations with means to transfer work or fluid-applying devices
..With endless belt work transfer means
...Horizontal axes
....With splash, spray or jet applying means
.....With work immersing means
74 ......With separate movable means to cause fluid motion
75 ....Sequential endless-carrier immersing means
76 ..Traversing hoist-type work transfer means
77 ...Curved or non-rectilinear traverse work-path
78 ..With rotary or swinging work transfer means
79 ...Axially rotary
80 ....Turntable type
81 .....With synchronized or coordinate valve
82 ..With guide rails, rods or beams for work or work holders
83 ...Vertical, inclined, curved or movable or with rollers or work immersion means
84 .Plural, separate, work treating or holding receptacles or stations; manual transfer type
85 ..With movably mounted work holder or receptacle
86 ...For motion during fluid application
87 ....Plural, mutually counterbalancing work supports
88 ..With fluid supplying or movable applying means
89 ...With movable means to cause fluid motion
90 ...With heater or heat exchanger
91 ..With valved liquid drain from one or more stations
92 ..With detachable work holder or receptacle
93 .With solid agent dissolving or supplying means
94 .With plural means for supplying and/or applying plural different fluids respectively
95 ..With ordered sequential fluids applying means
96 ..With coordinated outlet non-impelling control and other device or plural way drain or liquid outlet (e.g., reversing valve)
97 ..With coordinated inlet non-impelling control and non-inlet-control
98 ..With coordinated or multiple valves therefor
99 ..With plural-fluids applying conduits
100 ...With fluids premixing or contacting means
101 ....With means for recirculating or reversing fluid flow through conduits
102 ....With steam, air or gas applying conduits
103 ..With means for recirculating or reversing fluid flow through conduits
104.1 .Having self cleaning means
104.2 .With means for collecting escaping material
104.3 ..Cleaned material
104.4 ..Foreign material separated from liquid
105 .With heating, cooling or heat exchange means
106 ..With heat-generatable liquid-flow pressure means
107 ..Heat-exchange means external to work-treating chamber, vat or zone
108 ..Recirculation of treating liquid through conduit means
109 .With treating fluid purifying or separating means
110 ..By filter or strainer only (except work-spraying head)
111 ...With liquid-moving recirculation, or flow reversing, and straining means
112 .With brake or clutch
113 .With alarm, signal, indicating, testing, inspecting, illuminating or display means
114 .With liquid seal
115 R .Combined or convertible
115 G ...With garbage grinder
116 .With means to operate movably interconnected parts of work
117 .Movably mounted fluid-holding receptacles
118 ..Rocking or rolling, bottom supported or shifting axis
119 ..Rotary or swinging motion
120 ...Horizontal axis only
121 ...Vertical axis only
122 R .For sheet, web, strand or bar form work, longitudinally traveling
122 P ...Photographic
123 .For vehicle or wheel form work
124 .With endless belt work conveyer
125 ..With guide rails for work or work holder (not for belt)
126 ..With non-endless-belt work conveyer or manipulator
127 ..With plural endless belts
128 ..With means to release work held on belt
129 ..With movably mounted spray or jet applying conduits or nozzle and/or interconnected conveyer and valve
130 ..With separate movable means to cause fluid motion (e.g., pump, splasher, agitator)
131 ..With spray or jet applying conduits or nozzles
132 .Spiral work path and/or spiral work conveyer (e.g., screw)
133 .With work feeding and/or discharging means
134 ..Rotary, swinging or pivoted, work support feeding or discharging conveyers (except mere gates or stops)
135 .With means to hold work holder in draining position above treating liquid
136 .Work holder in form of valved plunger
137 .With means to movably mount or movably support the work or work support
138 ..Movably mounted work holder operable by fluid contact
139 ...With separate movable splasher or pump
140 ..Motor operated apparatus
141 ...Fluid motor or turbine
142 ..Movable support having plural work holders movably mounted thereon (e.g., ferris-wheel type)
143 ..Interconnected tank closure and other movable element
144 ..With movably mounted spray or jet applying conduits or nozzles
145 ...Immovably mounted on movable work support

	APPARATUS
	.With means to movably mount or movably support the work or work support
146	..Interconnected movable work support and valve
147	..With movable work support and separate movable means to cause fluid motion (e.g., pump, splasher, agitator)
148	...And spray or jet applying conduit or nozzle
149	..Axially rotary chuck, mandrel, rod or axle type holder
150	..Work of container-form constituting sole liquid holder
151	..With spray or jet applying conduits or nozzles
152	...For work having hollows or passages
153	...Rotary, pivoted or swinging work holder
154	..With non-impelling fluid deflector or baffle
155	..With means to drain from or supply liquid to the tank
156	..Work support having a float and/or swing drive or bias
157	..Rotary, revolving, swinging or oscillating motion work holder or carrier
158	...With plural work receiving chambers or holders and/or with cover carried by work receiving chamber
159	....Horizontal axis
160	...Carried by pivotally mounted links or levers or by strands
161	...Compound motion
162	...Actuating means extending through or carried by tank cover
163	...With liquid impeller mounted on work support
164	..Work support reciprocated by pivoted links or lever or by strands
165	..Rail or rod form guides for work or work holder
166 R	.For work having hollows or passages
166 C	...Conduit cleaner
167 R	..With movably or flexibly mounted spray or jet applying conduits or nozzles
167 C	....Conduit cleaner
168 R	...With movable means to cause fluid motion (e.g., pumps)
168 C	.....Conduit cleaner
169 R	..With movable means to cause fluid motion (e.g., pumps, followers)
169 A	....Automotive parts cleaner
169 C	....Conduit cleaner
170	..With means to apply fluids both internally and externally
171	..With plural fluid-supplying pipes
172	.With movably or flexibly mounted spray or jet applying conduits or nozzles
173	..As pump or element thereof
174	..With separate pump, splasher or agitator
175	...Conduit or nozzle attached to or operatively interconnected with treating chamber closure
176	...With fluid discharge reaction nozzle
177	..Attached to or operatively interconnected with treating chamber closure
178	..Coordinated with valve therefor
179	..Fluid discharge reaction nozzle
180	..With guiding means to restrict motion to rotation, to swinging, or to an annular closed or to a curved path
181	...With motor therefor
182	.With non-impelling fluid deflector or baffle other than conduits or nozzles
183	..Movably mounted, adjustable or removable
184	.With movable means to cause fluid motion (e.g., pump, splasher, agitator)
185	..Compound motion
186	..With means to drain from and/or supply liquid to tank
187	..Pivoted (e.g., rotary swinging or oscillating)
188	...Motor operated
189	...Movable in annular path that surrounds work-space
190	...Delivering fluids to work-space through annular, work-space-surrounding conduit
191	...Delivering to conduits or nozzles
192	...Actuating means extending through or carried by tank cover
193	...Plural fluid-moving means (excludes single with plural vanes)
194	...About horizontal axis
195	..Through or one-way fluid flow pumps
196	..Vertically reciprocable (e.g., dashers)
197	...Actuating means carried by or extending through tank cover
198	.With spray or jet supplying and/or applying means
199	..Work circumposable or opposed fluid-applying jets or plural pipes
200	..With closable work-treating chambers
201	.Miscellaneous
	********************************
	CROSS-REFERENCE ART COLLECTIONS
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900	PAINT ROLLER
901	CONTACT LENS
902	SEMICONDUCTOR WAFFER

87	PORTABLE SHELTER, I.E., TENT OR CANOPY
88	.Shelter supported by vehicle
89	..Travel trailer awning or canopy
90	.Shelter suspended from diverse support means
91	.With heating, lighting or ventilating
92	..Heating
93	..Ventilating
94	...Of shelter-roof
95	.Convertible, i.e., from shelter to diverse object or from one type shelter to another type of shelter
96	.Combined
97	.Plural shelters, shelter having plural compartments or plural sectional covering
98	.Umbrella-type
99	.Center-pole suporting-type
100	.Cone-shaped type, e.g., tepee
101	.Framework
102	..Arch-shaped or dome-type
103	...Expansible, e.g., extensible
104	...Flexible
105	..External-type frame
106	..Collapsible, e.g., breakdown-type
107	...Telescoping and foldable
108	...Telescoping
109	...Foldable
110	....Lazy-tong type
111	....Parallelogram-type
112	....Vertical supporting member having pivot means therein
113	....Floor or base member having pivot means therein
114	.Shelter pole
115	.Cover for shelter
116	.Floor or base structure
117	.Closure, viewing window, awning or sunshade
118	.Stake
119	.Cover fastening
120	.Accessory or adjunct
16	UMBRELLAS COMBINED
17	.Umbrellas and canes
18	.Imitation cane case
19	.Independent stick
19.5	EMERGENCY (QUICK ASSEMBLY) UMBRELLAS
20 R	UMBRELLAS
20 A	..Axially offset
20 B	..Inflated
20 M	..Mechanically operated
20 TH	.Cover received in tubular handle
21	.Suspended
22	.Self-opening and closing
23	..Tensioned rib and stretcher
24	..Handle release
25 R	.Folding
25 A	...With brace joint
26	..Sliding rib
27	.Auxiliary frame brace
28	.Runners and notches
29	.Rib and stretcher joints
30	..T-head and socket
31	.Ribs and stretchers
32	.Geats
33 R	.Covers, linings and cases
33 C	...Cases
34	..Covers and linings, detachable
35 R	..Sight openings and ventilators
35 S	....Sight openings
35 V	....Ventilators
36 R	.Rib tips, top protectors, and fasteners
36 F	...Cover fasteners
36 RT	...Rib tips
36 TP	...Protectors for cover-to-notch joint
37	.Retainers
38	..Runner
39	...Sliding
40	...Spring
41	....Modified runner
42	...Stick hinge locked
43	...Turning
44	..Tip
48	.Drip cups
65	CANES, STICKS, CRUTCHES AND WALKING AIDS
66	.Combined and convertible
67	.Walker type
68	.Crutches
69	..Extensible
70	..Remote control ground exchangeable tips
71	..Arm engaging
72	..Handholds
73	..Armrests
74	.Folding
75	.Telescopic
76	.Separable handle
77	.Tips
78	..Exchangeable, e.g., conventional to spiked
79	...Reversible
80	...Relatively movable spiked and conventional elements
81	....Spiked element housed within conventional elements
82	..Shock absorbing
83	...Fluid
84	..Pivoting, rocking or swivelling
85	..Roller
86	..Yieldable material
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	CROSS-REFERENCE ART COLLECTIONS
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900	WORKER OR SPECTATOR SHELTER
901	HUNTING BLIND OR ICE-FISHING SHELTER
902	DRESSING SHELTER, E.G., BEACH OR BATHING
903	ROLLER-OPERATED CANVAS
904	SEPARATE STORAGE MEASN OR HOUSING FOR SHELTER
905	METHOD OF ERECTING SHELTER
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	DIGESTS
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DIG 1	Arched rafters
DIG 2	Lazy tong umbrellas
DIG 5	Cover stretchers
DIG 8	Super tents and canopies
DIG 9	Fittings (pipes, rods, etc.)
DIG 10	Illuminated canes and umbrellas
DIG 11	Cane for the blind or handicapped

CLASS 136 BATTERIES, THERMOELECTRIC AND PHOTOELECTRIC

200 THERMOELECTRIC
201 .Processes
202 .Nuclear energy type
203 .Peltier effect device
204 ..Including additional heat exchange means
205 .Electric power generator
206 ..Solar energy type
207 ..Including an electric heater
208 ..Plural junction concentrically or annularly arranged around source of temperature differential
209 ...Plural concentrically arranged fluid source conduits
210 ....At least one conduit for liquid coolant
211 ..Plural hot or cold junction arranged in a single line
212 ..Plural hot or cold junctions arranged in a single plane
213 .Radiation pyrometer
214 ..Including a ray concentrator (e.g., lens, mirror, etc.)
215 ...Lens type
216 ..Evacuated
217 .Including a pilot burner
218 ..Having moving fluid (e.g., air, fuel, liquid, etc.) cooling means for cold junction
219 ..Thermocouple extends through fuel supply conduit
220 ..Thermopile-containing
221 .Including means to resiliently press junction element against sensed surface
222 .Including means to standardize nonsensing junction by heating or cooling
223 .Having an evacuated space
224 .Thermopile
225 ..Having strip, film or plate-type thermocouples
226 ..Having wound wire-type thermocouples
227 ..Two or more couples of dissimilar composition
228 .One junction element surrounded by another junction element
229 .Having additional contact means for sensing solid work
230 .Having housing, mounting or support
231 ..Including sample port for sensed material
232 ..Covered and sealed sensor junction
233 ...Contacting covering over junction (e.g., embedded, coated, etc.)
234 ...Molten metal immersion type
235 ..Thermocouple leads having disengageable pressure-type electrical connectors
236.1 .Having particular thermoelectric composition
237 ..Having particular bonding material for junction
238 ..Chalcogenide containing (S, O, Te, Se)
239 ..Group IV element containing (C, Si, Ti, Ge, Zr, Sn, Hf, Pb)
240 ..Group V metal containing (V, As, Nb, Sb, Ta, Bi)
241 ..Group IB metal containing (Cu, Ag, Au)
242 .Adjuncts
243 PHOTOELECTRIC
244 .Panel or array
245 ..Lightweight and collapsible or foldable
246 ..With concentrator, orientator, reflector, or cooling means
247 ...Fluorescent concentrator
248 ...Hybrid conversion system
249 ..Monolithic semiconductor
250 ..Particulate or spherical semiconductor
251 ..Encapsulated or with housing
252 .Cells
253 ..Radioactive, ionic, or thermo photo
254 ..Photoemissive, capacitive, magnetic, or ferroelectric
255 ..Schottky, graded doping, plural junction or special junction geometry
256 ..Contact, coating, or surface geometry
257 ...Luminescent layer or optical filter
258 ..Polycrystalline or amorphous semiconductor
259 ..With concentrator, housing, cooling means, or encapsulated
260 ..Cadmium containing
261 ..Silicon or germanium containing
262 ..Gallium containing
263 ..Organic active material containing
264 ..Selenium or tellurium containing
265 ..Copper, lead, or zinc containing

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CROSS-REFERENCE ART COLLECTIONS

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290 TESTING, CALIBRATING, TREATING (E.G., AGING, ETC.)
291 APPLICATIONS
292 .Space - satellite
293 .Circuits

CLASS 137 FLUID HANDLING

1	PROCESSES
2	.With control of flow by a condition or characteristic of a fluid
3	..Mixing of plural fluids of diverse characteristics or conditions
4	...Controlled by consistency of mixture
5	...Controlled by conductivity of mixture
6	...Controlled by heat of combustion of mixture
7	...Controlled by pressure
8	..For producing uniform flow
9	..For producing proportionate flow
10	..By speed of fluid
11	..For regulating boiler feed water level
12	..By fluid pressure
12.5	.Carbonated beverage handling processes
13	.Affecting flow by the addition of material or energy
14	.Involving pressure control
15	.Cleaning, repairing or assembling
15.1	HIGHSPEED FLUID INTAKE MEANS (E.G., JET ENGINE INTAKE)
15.2	.With condition responsive control means
38	CONTROL BY CHANGE OF POSITION OR INERTIA OF SYSTEM
39	.With second control
40	.Position relative body of water (e.g., marine governors)
41	..Float controlled
42	..Pressure or head controlled
43	.Vent opening or closing on tipping container
44	.By shifting of liquid level
45	.By pendulum or swinging member
46	..With servo connection to valve
47	SPEED RESPONSIVE VALVE CONTROL
48	.Acceleration responsive valve control
49	.With manual valve control
50	.Speed change and excess speed valve control
51	.With other condition responsive valve control
52	..Governor drive failure responsive
53	.Centrifugal mass type (exclusive of liquid)
54	..With multiple valves
55	..Periodically actuated valve
56	..Rotating valve and rotating governor
57	..Excess speed responsive
58	..With fluid servo-motor
59	FREEZE CONDITION RESPONSIVE SAFETY SYSTEMS
60	.With freeze waste
61	.Stop and waste
62	.Low temperature responsive drains
65	COMBUSTION FAILURE RESPONSIVE FUEL SAFETY CUT-OFF FOR BURNERS
66	.Thermo-electric
67	DESTRUCTIBLE OR DEFORMABLE ELEMENT CONTROL
68.1	.Frangible
68.2	..Explosive actuation
69	..With counter biasing element
70	..Frangible element retains pressure responsive valve closed
71	..With pressure responsive valve
72	.Heat destructible or fusible
73	..With second sensing means
74	..In fluid flow path
75	..Safety cut-off
76	...With heater for destructible or fusible element
77	...With external closing means
78.1	AMBIENT CONDITION CHANGE RESPONSIVE
78.2	.For controlling soil irrigation
78.3	..Soil moisture sensing
78.4	.Burner gas cutoff
78.5	.Atmospheric
79	..Temperature
80	...With additional diverse control
81.1	..Pressure
81.2	.Underwater
803	FLOW AFFECTED BY FLUID CONTACT, ENERGY FIELD OR COANDA EFFECT (E.G., PURE FLUID DEVICE OR SYSTEM)
804	.Responsive to condition external of system
805	..And causing change or correction of sensed condition
806	.Utilizing diverse fluids
807	.Utilizing particular fluid
808	.Means to cause rotational flow of fluid (e.g., vortex generator)
809	..Plural vortex generators
810	..Vortex generator as control for system
811	..Vortex generator in interaction chamber of device
812	..By tangential input to axial output (e.g., vortex amplifier)
813	...With means to vary input or output of device
814	.System comprising plural fluidic devices or stages
815	..Plural power inputs (e.g., parallel inputs)
816	...Variable or different-value power inputs
817	....Pulsating power input and continuous-flow power input
818	...With variable or selectable source of control-input signal
819	...To cascaded plural devices
820	....With feedback passage(s) between devices of cascade
821	....With pulsed control-input signal
822	.Plural power inputs to single device
823	..Intersecting at interaction region (e.g., comparator)
824	...Co-lineal, oppositely-directed power inputs (e.g., impact modulator)
825	.Means to regulate or vary operation of device
826	..To vary frequency of pulses or oscillations
827	..By non-fluid energy field affecting input (e.g., transducer)
828	...Acoustical or thermal energy
829	..By movable element
830	...Operating at timed intervals (e.g., to produce pulses)
831	...Electrically-actuated element (e.g., electro-mechanical transducer)
832	...Means (e.g., valve) in control input
833	.Structure of body of device
834	.Device including passages having V over T configuration
835	..And feedback passage(s) or path(s)
836	..With particular characteristics of control input
837	...Multiple control-input passages
838	..And multiple or joined power-outlet passages
839	..And enlarged interaction chamber
840	..And vent passage(s)
841	.Device including passages having V over gamma configuration
842	.Device including linearly-aligned power stream emitter and power stream collector
82	PRESSURE MODULATING RELAYS OR FOLLOWERS
83	.Jet control type
84	.Plural series units
85	.With counter-balancing pressure feedback to the modulating device
86	..With counter-counter balancing pressure feedback

87 SELF-PROPORTIONING OR CORRELATING SYSTEMS
88 .Mixture condition maintaining or sensing
89 ..Dividing and recombining flow
91 ..By specific gravity
92 ..By viscosity or consistency
93 ..By optical or chemical property
94 .Fuel controlled by boiler or water system condition
98 .Self-proportioning flow systems
99 ..Interconnected flow displacement elements
99.5 ...Movable trap chamber
100 ..Flow comparison or differential response
101 ...Flow dividers (e.g., reversely acting controls)
101.11 ...Main line flow displaces or entrains material from reservoir
101.19 ...With electrical controller
101.21 ..Flow displacement element actuates electrical controller
101.25 ..Liquid level response
101.27 ...Float controlled weir or valve
101.29 ...Swinging outlet pipe controller
101.31 ..With measuring type discharge assistant
102 .Supply and exhaust type
103 ..Vacuum or suction pulsator type (e.g., milking machine)
104 ...With trip linkage or snap action
105 ...With pulsation responsive pilot valve
106 ..Reversing or 4-way valve systems
107 ..Waste responsive to flow stoppage
109 .Self-controlled branched flow systems
110 ..Dividing and recombining
111 ..Plural inflows
112 ...Alternate or successive inflows
113 ....Control by depletion of source
114 ...One inflow supplements another
115 ..By-pass or relief controlled by main line condition
116 ...With pressure opening outlet valve
116.3 ...With pressure reducing inlet valve
116.5 ....Relief port through common sensing means
117 ...Responsive to change in rate of main line flow
118 ..Plural outflows
119 ...Alternate or successively substituted outflow
120 ....Control by filling auxiliary gravitating or float operating tank
121 ....Control by filling outlet tank or receiver
122 .....Float controlled
123 SIPHONS
124 .Plural
125 ..Tank truck mounted
126 ..Sequentially discharging in parallel
127 ...From plural tanks
128 ..Main siphon with auxiliary starting, stopping or resetting siphon
129 ...Sinking or bucket-type float operated main siphon, float emptying auxiliary siphon
130 .With discharge-controlling receiver
131 ..With float
132 .Periodic or accumulation responsive discharge
133 ..With manual control
134 ..Control by filling auxiliary tank
135 ..Float-operated inlet to siphon
136 ..Release of trapped air
137 ...Through float-operated vent
138 ...Through liquid trap seal
139 ....Auxiliary liquid trap seal
140 .With strainer, filter, separator or sediment trap
141 .With recorder, register, signal, indicator or inspection window
142 .With flow starting, stopping or maintaining means
143 ..Siphon venting or breaking
144 ..With leakage or entrained air removal
145 ..Pressure applied to liquid in supply chamber
146 ..Plunge or immersion starting
147 ..Pump or liquid displacement device for flow passage
148 ...Piston
149 ....Co-axial within flow passage
150 ...Collapsible bulb
150.5 ..Siphon inlet movable to and from seat
151 ..With valve or closure in-flow passage
152 .With means for mounting and/or positioning relative to siphon chamber
153 .Elements
154 DIVERSE FLUID CONTAINING PRESSURE SYSTEMS
155 .Gas lift valves for wells
156 .Gas pressure discharge of liquids feed traps (e.g., to boiler)
157 ..Gas pressure controlled by amount of liquids in boiler or discharge receiver
158 ...Pressure connection at liquid level in boiler or discharge receiver
159 ..Gas pressure controlled by amount of liquid in trap
160 ...Plural trap chambers
161 ....Gravitating
162 ...Gravitating vessel
163 ....Sinking or bucket type float
164 ....Pivoted vessel with fluid passage through pivot
165 ...Float responsive
166 ....Liquid control valve positively actuated
167 ....Gas condensing type
168 ....Gas inlet and outlet valves unitary
169 ..Gas pressure controlled by manual or cyclic means
170 ...Movable trap chamber
170.1 .Foam control in gas charged liquids
170.2 ..Level or pressure responsive
170.3 ..Separate handling of foam
170.4 ..With conditioning trap or chamber
170.5 ...Recarbonation
170.6 ...With trap or chamber by-pass
171 .Fluid separating traps or vents
172 ..Liquids separated from liquid
173 ..Plural discriminating outlets for diverse fluids
174 ...Common actuator for control valves
175 ...Choke or restricted passage gas bleed
176 ....From above liquid level
177 ..Discriminating outlet for liquid
178 ...With alternately operated inlet and outlet valves
179 ...With non-discriminating gas vent or liquid discharge
180 ....Abnormal pressure responsive liquid blow-off or drain
181 ....Manual control
182 ...With auxiliary inlet or by-pass valve
183 ...With fluid responsive valve
184 ....Successively opened valves
185 ....Gas collecting float (e.g., inverted bucket)
186 .....Downstream from valve
187 ....Level responsive
188 .....Weight or pressure

DIVERSE FLUID CONTAINING PRESSURE SYSTEMS
.Fluid separating traps or vents
..Discriminating outlet for liquid
...With fluid responsive valve
....Level responsive
.....Weight or pressure
189 ......Gravitating vessel
190 ....Sinking or bucket type float
191 ....Servo-control
192 .....Float
193 ......With main line gas outlet from trap chamber
194 ......With outlet extending above liquid in trap
195 ......Servo-control
196 ......With pressure balanced outlet valve
197 ..Discriminating outlet for gas
198 ...With reverse flow stop or pressure regulating valve
199 ...Fluid sensing valve
200 ....With vaporized liquid stop
201 .....With separate return for condensate
202 ....Float responsive
203 ..With liquid emptying means
204 ...Self-emptying
205 .Liquid filling by evacuating container
205.5 .Main line flow displaces additive from shunt reservoir
206 .Gas pressure storage over or displacement of liquid
207 ..Surge suppression
207.5 ..With return of liquid to supply
208 ..Plural units
209 ..With gas maintenance or application
210 ...Gas carried by or evolved from liquid
211 ....Gas injectors
211.5 ...Gas injected by liquid pressure or flow
212 ...Unitary mounting for gas pressure inlet and liquid outlet
213 ..With liquid level responsive gas vent or whistle
214 ...Combined high and low level responsive
215 BACK FLOW PREVENTION BY VACUUM BREAKING (E.G., ANTI-SIPHON DEVICES)
216 .Air vent in liquid flow line
216.1 ..With liquid seal in liquid flow line
216.2 ...Automatic valve in vent line
217 ..Valved
218 ...With co-acting valve in liquid flow path
219 LARNER-JOHNSON TYPE VALVES; I.E., TELESCOPING INTERNAL VALVE IN EXPANDED FLOW LINE SECTION
220 .Line condition change responsive
221 .Internal servo-motor with internal pilot valve
222 ..Pilot controlled passage in nose or needle
223 INFLATABLE ARTICLE (E.G., TIRE FILLING CHUCK AND/OR STEM)
224 .With pressure-responsive pressure-control means
224.5 ..Pulsating
225 ..Diaphragm, bellows or expansible tube
226 ..Co-axial inflation and relief valves
227 .With gauge or indicator
228 ..With deflating means
229 ..Selectively connected
230 .Stem attached relief valve
231 .With coupling means
232 .With cap
233 ..Valve actuating, assembling or locking means on cap
234 ...Valve manually seated
234.5 .Removable valve head and seat unit (valve insides)
234.6 WITH VEHICLE GUIDE OR SUPPORT, E.G., SERVICE STATION
236.1 DISTRIBUTION SYSTEMS INVOLVING GEOGRAPHIC FEATURES
237 WITH CLEANER, LUBRICATION ADDED TO FLUID OR LIQUID SEALING AT VALVE INTERFACE
238 .Cleaning or steam sterilizing
239 ..Reverse fluid flow
240 ..With separate material addition
241 ..Steam sterilizing
242 ..Mechanical cleaning
243 ...Valve grinding motion of valve on seat
243.1 ....Concentric stem
243.2 ....Spring pressed
243.3 ....Lost motion permits grinding
243.4 ....With swivel-preventing means
243.5 ....Nut releasable from body and/or stem
243.6 ....With independent grinding actuator
243.7 .....Separable
244 ...Cleaning member reciprocates in passage
245 ....By-pass cleaning
245.5 ....Independent actuation
246 .Liquid supplied at valve interface
246.11 ..Plural feed
246.12 ..Line pressure feed
246.13 ..Feed by or with actuation
246.14 ..Loss control
246.15 ..Screw feed
246.16 ...With check valve
246.17 ....Excess relief
246.18 ....Jacking
246.19 ...Jacking
246.2 ...Seating
246.21 ..Spring biased piston feed
246.22 ..External pressure
246.23 ..Gravity or capillary feed
247 WITH LIQUID VALVES OR LIQUID TRAP SEALS
247.11 .Liquid seal in liquid flow line; flow liquid forms seal
247.13 ..Valves
247.15 ...Line condition change responsive
247.17 ....Plural valves or valve seats
247.19 ....Pivoted valve
247.21 ....Ball valve
247.23 .....Seats vertically up
247.25 ..Seal replenishers
247.27 ..Plural inlet
247.29 ..Divided and recombined passages
247.31 ..Tangential inlet flow
247.33 ..Downward partition encircles projecting outlet
247.35 ..Submerged inlet pipe end
247.37 ..Hinged seal bowl
247.39 ...Distinct seal bowl in flow line connected casing
247.41 ..U-seals
247.43 ...Topside access beneath cover plate closed floor opening
247.45 ...Enlarged upflow leg
247.47 ....Topside access opening
247.49 ...Even diameter legs
247.51 ....Access opening
248 .Seal for relatively movable valving parts
249 ..Horizontally moving valve
250 ...Rotary
251.1 .Liquid valves
252 ..Branched passage for sealing liquid
253 ..With auxiliary means for varying liquid level
254 ..With baffle
255 PLURAL TANKS OR COMPARTMENTS WITH PARALLEL FLOW

	PLURAL TANKS OR COMPARTMENTS WITH PARALLEL FLOW
256	.Sequentially filled and emptied (e.g., holding type)
257	..With relative rotation of tank group and filling head
258	...With rotary filling and emptying head
259	.With housings, supports or stacking arrangements
260	.Battery or electrolytic cell replenishment
261	..Barometric supply
262	.Flow dividing compartments
263	.Tank type manifold (i.e., one tank supplies or receives from at least two others)
264	.Tank within tank
265	.With cross connecting passage
266	.With manifold or grouped outlets
267	..Tank truck type
268	WITH HOLDER FOR SOLID, FLAKY OR PULVERIZED MATERIAL TO BE DISSOLVED OR ENTRAINED
269	CONVERTIBLE
269.5	.Reversible check
270	.Unit orientable in a single location between plural positions
270.5	..Reversible stop and vent or waste
271	.Units interchangeable between alternate locations
272	HYDRANT TYPE
273	.Water crane type
274	..Spout operated valve
275	..Rotating riser
276	...Spout articulated to riser
277	...Vertically movable riser
278	..Extensible spout
279	..Spout articulated to riser
280	.Plural riser
281	.Expansible chamber operated by valve actuator for draining riser
282	.With pump or ejector
283	.Removable valve and valve seat
284	..With extension to facilitate removal
285	.Removable valve with supplemental check valve
286	.Movable riser actuated valve
287	..Reciprocating riser
288	...Piston type valve
289	.Balanced valve
290	.Valve actuator extends laterally from bottom of riser
291	.Valve actuator outside riser
292	..Lever actuator
293	..With casing, flush with ground or pavement surface
294	.With casing
295	..Flush with ground or pavement surface
296	..Cap, cover or hood
297	..With heater
298	.With actuator lubricating means
299	.With valve at outlet
300	.With supplemental valve
301	.Protection against freezing
302	..Stop and waste
303	...With disabling means
304	...Separate relatively movable valves with single actuator
305	....Unidirectional abutting connection between main valve or actuator and waste valve
306	....With screw or gear in actuating mechanism
307	...Reciprocating relatively fixed valves
308	....Waste through lower valve guide
309	REVERSING VALVES - REGENERATIVE FURNACE TYPE
310	.With cooling
311	.Rotary reversing valve
312	WITH LEAKAGE OR DRIP COLLECTING
313	.Relatively movable receptacle or drain pipe and outlet
314	.Collector for waste liquid derived from solid, gas or vapor
315	WITH REPAIR, TAPPING OR ASSEMBLY MEANS
316	.With holding means functioning only during transportation assembly or disassembly
317	.Tapping a pipe, keg, or apertured tank under pressure
318	..With aperture forming means
319	..Imperforate closure removing and holding tap
320	..With valved closure or bung
321	...Combined rotary and longitudinal movement of valve
322	...Longitudinal movement of valve
323	...Rotary movement of valve
324	..With core ejectors
325	...Impact operated
326	.Foot valve extraction from top of enclosure
327	.With disassembly tool engaging feature
328	..Wrench engaging lugs
329	.With provision of alternate wear parts
329.01	..Valve heads and/or seats
329.02	...Opposite duplicate surfaces of unitary structure
329.03	....Homogeneous material
329.04	.....Valve heads
329.05	...Different portions of continuous surfaces
329.06	...Successively used adjacent independent elements
329.1	.Removable valve with normally disabled supplemental check valve
329.2	..Check valve disabled by normally movable main valve part
329.3	...Ball check
329.4	...Spring bias
330	NON-VALVING MOTION OF THE VALVE OR VALVE SEAT
331	.Rotary motion of a reciprocating valve
332	..Turbine on valve
333	..Manual rotating means
334	WITH HEATING OR COOLING OF THE SYSTEM
335	.With burner
336	..Flue extending through fluid
337	.Hot and cold water system having a connection from the hot to the cold channel
338	.Air heated or cooled (fan, fins, or channels)
339	.With diversion of part of fluid to heat or cool the device or its contents
340	.Circulating fluid in heat exchange relationship
341	.With electric heating element
342	WITH FLUID SYSTEM SUPPORT FOR WORKMAN OR NON-SYSTEM MATERIAL
343	WITH CASING, SUPPORT, PROTECTOR OR STATIC CONSTRUCTIONAL INSTALLATIONS
899	.Vehicle
345	..Locomotive
346	...Boiler or steam dome
347	..Railway car
348	...Car frame
349	...End of car
350	...Roof, wall or floor
351	..Automotive
352	...Steering post or wheel
353	...Dash
354	...Floor or frame
355	...Fender or running board
355.12	..With hose reel storage means
899.1	..Guided by means of track or guideway

WITH CASING, SUPPORT, PROTECTOR OR STATIC CONSTRUCTIONAL INSTALLATIONS
.Vehicle
899.2 ..Aerial or water-supported (e.g., airplane or ship, etc.)
899.3 ..With retractable or nonuse-positionable support wheel
899.4 ..Vehicle supports fluid compressor and compressed fluid storage tank
355.16 .With hose storage or retrieval means
355.17 ..With means for plural hoses
355.18 ..With flow regulation responsive to hose movement
355.19 ...Reel type
355.2 ..With retrieval means
355.21 ...Power stop or brake
355.22 ....Responsive to position of hose in casing
355.23 ...Biased to retracted position
355.24 ....Boom type
355.25 ....Weighted
355.26 ..Reel with support therefor
355.27 ...Ground supported
355.28 ..Basket or holder for folded coiled hose
356 .Static constructional installations
357 ..Buildings
358 ...Outside access to portions of the system
359 ...Escutcheon type support
360 ...Wall
361 ....Recessed gas outlet box
362 ...Floor installation
363 ..Ground supporting enclosure
364 ...Valve and meter wells
365 ....With means to center well on valve
366 .....Detachable base plate
367 .....Vertical casing aligned by valve casing
368 ....Combined with actuator
369 .....Telescopic well casing
370 ....Telescopic well casing
371 ....Covers
372 ...Pipe line transport
373 ..Tapering or tower type
374 .Furniture and housing furnishings
375 .Jacketed
376 .Tank supports
377 .Guards and shields
378 ..Resilient abutment for preventing breakage
379 ..Nozzle abutment for scratch or damage prevention
380 ..Cover for beer cooler aperture for faucet
381 ..Sanitary covers or shields
382 ..Valve guards
382.5 ...With means for accommodating a detachable actuator
383 WITH LOCK OR SEAL
384 .With seal
384.2 .Common lock and valve actuator
384.4 ..Combination lock
384.6 ..Biased valve
384.8 ..Mechanical movement between lock and valve
385 .Locks against rotary motion
386 LIQUID LEVEL RESPONSIVE OR MAINTAINING SYSTEMS
387 .Washing machine cycle control
388 .Liquid excluding devices for gas inlet or outlets
389 .With second diverse control
390 ..Manual control
391 .Control of both inflow and outflow of tank
392 .Electrical characteristic sensing
393 .With control fluid connection at desired liquid level
395 .Control of outflow from tank
396 ..Self-emptying tanks
397 ...By float
398 ..By float
399 ...Low level safety cut-off
400 .With supplemental or safety closing means or bias
401 ..Sinking or bucket type float
402 ..Gravitating tank
403 .By weight of accumulated fluid
404 ..In sinking or bucket type float
405 ..Oil burner fuel overflow preventing safety cut-offs
406 ..In communicating measuring vessel
407 ...Top and bottom connections
408 ..In gravitating tank
409 .By float controlled valve
410 ..Valve opened by external means, closing or closing control by float
411 ..Single float controls plural valves
412 ..Servo relay operation of control
413 ...Fluid pressure
414 ....Flexible diaphragm valve
415 ....From tank
416 ..Quick acting
417 ...Pilot float released
418 ...Over center mechanism
419 ....Shifting weight
420 ...Trip mechanism
421 ....Weight or spring bias
422 ...Lost motion mechanism
423 ..Plural floats
424 ..With counter-balance
425 ..Within tank
426 ..Level adjustment or selection means
427 ..With float leakage disposal
428 ..In separate communicating float chamber
429 ..Rectilinearly traveling float
430 ...Float co-axial with valve or port
431 ....Float is spreader or anti-splash means
432 ....Float surrounds inlet pipe
433 ....Float rigid with valve
434 ..Float arm operated valve
435 ...With valve retarder or cushion means
436 ...With flow guide or restrictor
437 ....External hood or deflector or annular outlet surrounding the inlet pipe
438 ...Movable nozzle or inlet terminal
439 ...Valve removable from outside container
440 ...With U-shaped inlet pipe having terminal valve
441 ...With refill pipe
442 ...Assembly mounted on and having reciprocating valve element co-axial with inlet pipe
443 ....Horizontal or side entering pipe
444 ....Vertical inlet riser
445 ...With toggle or second lever connected to valve
446 ...With interposed cam, gear or threaded connection
447 ...Rotary valve element
448 ...Pivoted valve
449 ...Ball valves
450 ...Balanced valves
451 ...Flexible valve
453 .Barometric
454 ..With shut-off between supply tank and receiver
454.2 REMOVABLE VALVE HEAD AND SEAT UNIT
454.4 .Pump type
454.5 .Threaded into valve casing

REMOVABLE VALVE HEAD AND SEAT UNIT
454.6 .Retained by bonnet or closure
455 LINE CONDITION CHANGE RESPONSIVE VALVES
456 .Safety cut-off requiring reset
457 ..Thermal
458 ..Responsive to both high and low pressure or velocity
459 ..Responsive to change in rate of flow
460 ...Excessive flow cut-off
461 ..High pressure cut-off
462 ..Reset by pressure equalization valve or by-pass
463 ..Fluid released trip
464 ..Fluid counter-biased or unseated valve
465 ...With mechanical stop against reopening
466 ...With fluid pressure seating of valve
467 .Fluid opened valve requiring reset
467.5 .Consistency responsive
468 .Thermal responsive
469 .Pop valves
470 ..Pop closing valves
471 ..Pop pressure reactor in inflow to valve
472 ..Pop pressure reactor in branched released path
473 ...Separate relief valves or valves for each branch
474 ..Lost motion between pop pressure reactor and valve
475 ..Adjustable choke
476 ...Annular lip or baffle
477 ....On movable valve part
478 ....Screw threaded
479 .Combustion engine induction type
480 ..Valve in auxiliary inlet to induction line
481 ..With manual modifier
482 ..With suction compensator
483 ..With separate reactor surface
484 ..Unbalanced pivoted valve (e.g., unbalanced butterfly type)
484.2 .Line flow effect assisted
484.4 ..Reactor surface normal to flow
484.6 ..Reactor surface separated from flow by apertured partition
484.8 ...Through separate aperture
485 .Pilot or servo controlled
486 ..Responsive to change in rate of fluid flow
487 ...Control by pressures across flow line valve
487.5 ..Electrically actuated valve
488 ..Fluid pressure type
489 ...Choked or throttled pressure type
490 ....Pilot valve within main valve head
491 ....Choked passage through main valve head
489.3 ....Loose fitting piston
489.5 ....Pilot controls supply to pressure chamber
492 ...Single acting fluid servo
492.5 ....Spring biased
493 .Bi-directional flow valves
493.1 ..One head and seat carried by head of another
493.2 ...Supporting valve only spring biased
493.3 ...Supporting valve spring carried by supporting valve
493.4 ....Spring stop on supported valve stem
493.5 ....Spring abuts guide for supported valve stem
493.6 ...Both valves spring biased
493.7 ..Axes of ports perpendicular
493.8 ..Axes of ports parallel
493.9 ..Axes of ports co-axial
494 .With separate connected fluid reactor surface
495 ..With manual or external control for line valve
496 ..Valve closes in responses to reverse flow
497 ..Responsive to change in rate of fluid flow
498 ...Valve closes in response to excessive flow
499 ...Turbine or swinging vane type reactor
500 ...Expansible chamber subject to differential pressures
501 ....Pressures across fixed choke
502 ....With Venturi tube having a connection to throat
503 ....Pressures across flow line valve
504 ...Movable deflector or choke
505 ..With opening bias (e.g., pressure regulator)
505.11 ...With relief valve
505.12 ...Multi-stage
505.13 ...Senses inlet pressure
505.14 ...Bias variable during operation
505.15 ....Ancillary reactor surface responds to inlet pressure
505.16 ....Liquid transfer
505.17 ....Weight
505.18 ...Balanced valve
505.19 ...Liquid level responsive gas flow control
505.2 ...With protective separator
505.21 ...Main flow through isolated reactor chamber
505.22 ...Through external pipe
505.23 ....Modified valve casing
505.24 ....Adjustable external lever
505.25 ...Apertured reactor surface surrounds flow line
505.26 ...Reactor surface separated by apertured partition
505.27 ....In valve stem
505.28 .....Also through reactor surface
505.29 ....Valve stem passes through the aperture
505.3 .....Plural reactor surfaces
505.31 .....Reactor is an inverted cup having liquid seal
505.32 ......With movement dampener
505.33 ......Valve head in inlet chamber
505.34 .....Valve head in inlet chamber
505.35 ......Rectilinear valve stem rigid with reactor surface
505.36 ....Reactor surface is diaphragm
505.37 .....With valve closing bias
505.38 ...Reactor surface closes chamber
505.39 ....Valve head in inlet chamber
505.4 .....Reactor surface is inverted cup (float)
505.41 .....Rectilinear valve stem rigid with reactor surface
505.42 .....With valve closing bias
505.43 ......In reactor chamber
505.44 ....Valve head on yoke
505.45 .....Yoke has valve closing bias
505.46 ....Reactor operatively connected to valve by mechanical movement
505.47 ...With mechanical movement between actuator and valve
506 ..Plural valves biased closed
507 ..With means for mounting or connecting to system
508 ..Valve seat or external sleeve moves to open valve
509 ..Valve seating in direction of flow
510 ...Flexible diaphragm or bellows reactor
511 .Direct response valves (i.e., check valve type)
512 ..Plural

	LINE CONDITION CHANGE RESPONSIVE VALVES
	.Direct response valves (i.e., check valve type)
	..Plural
512.1	...Dividing and recombining in a single flow path
512.15	....Integral resilient member forms plural valves
512.2	...One valve carries head and seat for second valve
512.3	...Diverse types
512.4	...Integral resilient member forms plural valves
512.5	...With common biasing means
513	...Mechanically interconnected
513.3	..With leak passage
513.5	...Permits flow at valve interface
513.7	...Bypass in valve casing
514	..With retarder or dashpot
514.3	...End of valve forms dashpot chamber
514.5	...End of valve moves inside dashpot chamber
514.7	....Enlarged piston on end of valve stem
515	..In couplings for coaxial conduits, e.g., drill pipe check valves
515.3	...Valve seat threaded into a coupling element
515.5	...Valve seat formed on or carried by a coupling element
515.7	...Valve seat clamped between coupling elements
516	..With means for selecting area of valve or seat
516.11	..Single head, plural ports in parallel
516.13	...Concentric ports
516.15	...Annular head
516.17	....Central post on seat
516.19	.....Stop
516.21	......With guide
516.23	.....Guide
516.25	..Plural seating
516.27	...Sequential
516.29	....Resilient gasket
517	..Biased open
518	...Oppositely swinging vanes
519	...Weight biased
519.5	....Ball valves
520	....Edge pivoted valve
521	...Pivoted valves
522	..With external means for opposing bias
523	...With means for retaining external means in bias opposing position
524	..With bias adjustment indicator
843	..Resilient material valve
844	...Having expansible port
845	....Apertured plate
846	....Having exit lip
847	.....With biasing means
848	.....Side vent
849	.....Multiple slit
850	.....Internally extending mount
851	...Center flexing strip
852	...With valve member flexing about securement
853	....Sleeve
854	....Central mount
855	....Flap or reed
856	.....With stop
857	.....With spring
858	.....With weight
859	....Peripherally secured diaphragm
860	...Annulus
526	..Vacuum relief type
527	..Pivoted valves
527.2	...Head retained by removable closure
527.4	...Valve head movably connected for accommodation to seat
527.6	...Valve mounted on end of pipe
527.8	...Weight biased
528	..Reciprocating valves
529	...Plural biasing means
530	...Cam means for adjusting and fixing bias
531	...Varying effective lever arm
532	...Weight biased
533	....Valve body is the weight
533.11	.....Ball valves
533.13	......Removable cage
533.15	......Separable seat
533.17	.....Guided head
533.19	......Cage
533.21	......Guide stem
533.23	.......With closing stop
533.25	.......Oppositely disposed
533.27	.......Head slidable on guide rod
533.29	.......Guide and seat integral unit
533.31	.......Guide and closure integral unit
534	....Weight coaxial with valve
535	...Spring biased
536	....With means to protect spring from fluid
537	....Spring under tension
538	....Piston-type valves
539	....Ball valves
539.5	.....With follower
540	....Spring coaxial with valve
540.11	.....Broken valve parts retainer
541	.....Spring in inlet
542	.....Valve stem extends through fixed spring abutment
543	......Yoke or cage-type support for valve stem
543.13	.....Spring abuts removable valve stem guide
543.15	.....Head slides on guide-rod concentric with spring
543.17	.....Spring guides valve head
543.19	.....Cage-type guide for stemless valves
543.21	.....Guide means integral and coplanar with valve disk
543.23	.....Head between spring and guide
544	WITH MEANS FOR SEPARATING SOLID MATERIAL FROM THE FLUID
545	.Plural separating elements
546	.Sediment chamber
547	.Movable strainer
549	.Hollow strainer, fluid inlet and outlet perpendicular to each other
550	.Planar strainer normal to flow path
551	WITH INDICATOR, REGISTER, RECORDER, ALARM OR INSPECTION MEANS
552	.Plural
552.5	..Unobvious - "combination lock" type
552.7	.Time
553	.Position or extent of motion indicator
554	..Electrical
555	..Selection from plural branches
556	..Indicator element rigidly carried by the movable element whose position is indicated
556.3	...Movable indicator element is a pointer
556.6	....Pointer integral with handle
557	.Fluid pressure responsive indicator, recorder or alarm
558	.Liquid level responsive indicator, recorder or alarm
559	.Inspection means
560	COMBINED
561 R	SYSTEMS
561 A	..Non-valved flow dividers
562	.Faucet connected, sink drained
563	.Closed circulating system
564	..With thermal circulating means (thermo-siphons)

SYSTEMS

564.5	.Main line as motive fluid for follower-type feeder
565	.With pump
565.1	..Downstream cyclic distributor
565.2	...Distributor part unitary with movable pump part
566	..Plural
567	...Parallel
568	..With reserve or surge receiving means
569	..With pump bypass
570	..Drain valve actuator mounted on pump
571	.Plural tanks or compartments connected for serial flow
572	..Separable with valved-connecting passage
573	..Fluid progresses by zigzag flow
574	..Plural compartments formed by baffles
575	..Plural top-to-bottom connected tanks
576	..With communicating opening in common walls of tanks or compartments
577	.Tank with movable or adjustable outlet or overflow pipe
577.5	..Horizontally traversing outlet
578	..Float-supported outlet
579	..Swinging outlet pipe or spout
580	.With running joint between movable parts of system
581	.Movable tank
582	.With antisplash means not in flow passage
583	.System with plural openings, one a gas vent or access opening
584	..Access and outlet
585	...Tank access opening and bottom outlet
586	....Access opening interlock or telltale on outlet valve actuator
587	..Tank with gas vent and inlet or outlet
588	...Vent and inlet or outlet in unitary mounting
589	..With vented outlet
590	.Tank with internally extending flow guide, pipe or conduit
590.5	..Nondraining overflow type
591	..Inverted "U" passage
592	..Inlet internally extending
593	.Head-establishing standpipe or expansion chamber (e.g., surge tanks)
624.11	.Programmer or timer
624.12	..With independent valve controller
624.13	..Repeating cycle
624.14	...Self-cycling
624.15	...Variable
624.16	....Attachable and removable element
624.17	....Adjustable cam
624.18	..Plural, sequential, valve actuations
624.19	...Plural trips or trip actuations
624.2	...Variable cycle
624.21	..Clock alarm mechanism controlled
624.22	..Biased latch, cam operated
624.27	.Line condition change responsive release of valve
625	.Multi-way valve unit
625.11	..Sequential distributor or collector type
625.12	..Sequentially progressive opening or closing of plural ports
625.13	...With subsequent closing of first port
625.14	....Flow combining with flow dividing
625.15	....Rotary
625.16	.....Plug
625.17	..Selective reciprocation or rotation
625.18	..Plural noncommunicating flow paths
625.19	...Rotary plug
625.2	..Supply and exhaust
625.6	...Pilot-actuated
625.61	....Variable orifice-type modulator
625.62	.....Opposed orifices; interposed modulator
625.63	....Common to plural valve motor chambers
625.64	....Electric
625.65	...Motor-operated
625.66	....Fluid motor
625.21	...Rotary valve
625.22	....Plug type
625.23	.....For plural lines
625.24	.....Axial and radial flow
625.25	...Reciprocating valve
625.26	....Combined disk or plug and gate or piston
625.27	....Plural disk or plug
625.67	....Piston valve
625.68	.....With internal flow passage
625.69	.....With annular passage (e.g., spool)
625.28	..Dividing into parallel flow paths with recombining
625.29	...Valve with bypass connections
625.3	...With metering feature
625.31	...Rotary
625.32	....Plug
625.33	...Reciprocating
625.34	....Spool
625.35	.....With internal passage
625.36	.....Unequal heads
625.37	....Piston
625.38	.....With internal flow passage
625.39	......Sequential opening or closing of serial ports in single flow line
625.4	..Multiple inlet with single outlet
625.41	...Rotary valve
625.42	..Selective opening of plural ports
625.43	..Four port reversing valves
625.44	..Pivoted valve unit
625.45	...Gate
625.46	..Rotary valve unit
625.47	...Plug
625.48	..Reciprocating valve unit
625.49	...Combined disk or plug and gate or piston
625.5	...Plural disk or plug
626	.Plural petcocks
627	.Sequential distributor or collector type
627.5	.Sequentially closing and opening alternately seating flow controllers
628	.Sequentially progressive opening or closing of plural valves
629	..Pressure equalizing or auxiliary shunt flow
630	...One valve seats against other valve (e.g., concentric valves)
630.11	....Locomotive throttle
630.12	....Gate
630.13	....With balancing chamber
630.14	....First valve moves second valve
630.15	....Actuator moves both valves
630.16	..With subsequent closing of first opened port
630.17	...Simultaneously moved port controllers
630.18	..Screw-actuated differential valves
630.19	..Lost motion
630.2	...Cam determines sequence
630.21	...Rotary concentric valves
630.22	...First valve actuates second valve
635	.With preselecting means for plural valve actuator
636	.With selective motion for plural valve actuator
636.1	..Oppositely movable cam surfaces
636.2	..Rotation about either of two pivotal axes
636.3	..Rotation of actuator arm about its pivot and its axis

	SYSTEMS
	.With selective motion for plural valve actuator
636.4	..Reciprocation along and rotation about same axis
637	.Valves with separate, correlated, actuators
637.05	..Correlated across separable flow path joint
637.1	..Interlocked
637.2	..Coaxial stems
637.3	...Rotary
637.4	....And reciprocating
637.5	....Concentric, central valve removable
594	.Plural noncommunicating flow paths
595	..With common valve operator
596	.Supply and exhaust
596.12	..With bypass
596.13	...Controlled by supply or exhaust valve
596.14	..Pilot-actuated
596.15	...Common to plural valve motor chambers
596.16	...Electric
596.17	..Motor
596.18	...Fluid motor
596.1	..Biased exhaust valve
596.2	...Biased closed
597	.Multiple inlet with multiple outlet
598	.Hydraulic brake line (e.g., hill holders)
599	.Dividing into parallel flow paths with recombining
599.1	..Flow passage with bypass connections
599.2	..Second valve assembly carried by first valve head
600	..With foam controlling means (e.g., beer, soda faucets)
601	..With common operator for valve in each path
602	.Multiple inlet with single outlet
603	..Faucet attachment
888	..Combining by aspiration
889	...Combining of three or more diverse fluids
890	...Plural motivating fluid jets
891	...Flow control by varying position of a fluid inlet relative to entrainment chamber
892	...With selectively operated flow control means in inlet
893	....Flow control means is located in aspirated fluid inlet
894	.....Single actuator operates flow control means located in both motivating fluid and aspirated fluid inlets
895	...With condition responsive valve
896	..With means to promote mixing or combining of plural fluids
897	...With selectively operated flow control means
898	....Single actuator operates plural flow control means
605	..With flow control
606	...Valve in each inlet
607	....With common valve operator
861	.With flow control means for branched passages
862	..With common valve operator
863	...For valve having a flexible diaphragm valving member
864	...For valve having a ball head
865	...With gearing
866	...Threaded actuator
867	...Pivoted or rotary motion converted to reciprocating valve head motion
868	....Spring biased
869	...Having fluid actuator
870	...With electrical actuation
871	...Spring biased
872	..With valve or movable deflector at junction
873	...Movable deflector spout in lateral port
874	...Valve or deflector is tubular passageway
875	...Pivoted valve or deflector
876	...Rotary valve or deflector
877	..Biased valved
878	...Spring bias
879	....For valve having a ball head
880	....With threaded actuator
881	....Spring coaxial with valve
882	.....Biased open
883	..Single inlet with multiple distinctly valved outlets
884	..Sectional block structure
885	..With fluid actuator
886	..With threaded actuator
887	..Containing rotary valve
613	.Flow path with serial valves and/or closures
614	..Separable flow path section, valve or closure in each
614.01	...Common joint and valve seat faces, or sections joined by closing members
614.02	...Each valve and/or closure operated by coupling motion
614.03	....Linear motion of flow path sections operates both
614.04	.....Valves actuate each other
614.05	...Valve- or closure-operated by coupling motion
614.06	...Coupling interlocked with valve, or closure or actuator
614.11	..Common actuator
614.12	...Delivery cock with terminal valve
614.13	...Alternately seating
614.14	....Biased valve
614.15	...Opposed screw
614.16	..One valve head provides seat for other head
614.17	...Also carries head of other valve
614.18	..One valve head carries other valve head
614.19	..Biased valve with external operator
614.2	..Direct response normally closed valve limits direction of flow
614.21	..Coaxial oppositely directed seats
615	.Articulated or swinging flow conduit
616	..Actuates valve
616.3	...Plural motions of valve
616.5	...Reciprocating valve
616.7	...Rotary valve
797	FRANGIBLE
798	WITH COUPLING
799	.Flexible
800	WITH CLOSURE
801	FAUCETS AND SPOUTS
802	MISCELLANEOUS
	*******************************
	CROSS-REFERENCE ART COLLECTIONS
	*******************************
900	BUMPLESS MANUAL TO AUTOMATIC RELAYS
901	BIASED BALL VALVES WITH OPERATORS
902	SLUSH PUMP CHECK VALVES
903	RUBBER VALVE SPRINGS
904	CUSHION CHECK VALVES
905	ROTARY VALVES FOR MULTIPLE GAS BURNERS
906	VALVES BIASED BY FLUID "SPRINGS"
907	VACUUM-ACTUATED VALVES
908	RESPIRATOR CONTROL
909	MAGNETIC FLUID VALVE

CLASS 138 PIPES AND TUBULAR CONDUITS

DECEMBER 1990

26	WITH PRESSURE COMPENSATORS
27	.Freeze protecting
28	..Expansible or compressible tube element
30	.Variable capacity chambers
31	..Piston or plunger type
32	THAWING AND FREEZE PROTECTION
33	.Electric
34	.Anti-freeze substance
35	.Portable thawing apparatus
36	WITH WEAR INDICATOR
37	WITH FLOW REGULATORS AND/OR BAFFLES
38	.Heat transfer
39	.Flow facilitating
40	.Restrictors
41	..With screen
42	..Tortuous path
43	...Variable restriction
44	..Central path
45	...Variable restriction
46	..Variable restriction
89	WITH CLOSURES AND PLUGS
	.Inflation stem type
89.1	..Air and dust cap
89.2	...Combined
89.3	..Air cap
89.4	..Dust cap
90	.Test plugs
91	.Double end
92	.Lateral opening
93	.Inflatable
94	.Laterally insertable
94.3	..Line blinds
94.5	...Pivoted
95	.Return bend type
96 R	END PROTECTORS
96 T	..Threaded
97	REPAIRING
98	.Patches
99	..External
100	BREAKJOINT
101	.Distinct layers
102	.With base
103	COMBINED
104	.With indicating means
105	.With trench
106	.With external support structure
107	..Suspended
108	.With means to support disparate element therein
109	.With end structure
110	.With hose protector
111	PLURAL DUCT
112	.With spacer and encircling element
113	.Surrounding radially spaced duct with axially spaced supports for internal duct
114	.Coaxial
115	.Longitudinally extending common wall
116	..Distinct
117	..Complementary sections
118	FLEXIBLE
118.1	.Casing
119	.With means for facilitating collapse
120	.Joined sections
121	.Corrugated
122	..Spirally
123	.Braided, interlaced, knitted or woven
124	..Distinct layers
125	...Plastic
126	....Rubber
127	.....With metal
128	.Longitudinally seamed
129	.Spirally wound material
130	..Oppositely wound
131	..Metal core
132	..Embedded
133	...Metal
134	..Metal
135	...With interlocked or clamped edge
136	....Packed or sealed
137	.Distinct layers
138	..With intermediate metal element
139	..Metal liner
140	DISTINCT LAYERS
141	.Bonded to each other
142	..Brazed, soldered or welded
143	..Metal
144	..Spirally wound layer
145	.Coated
146	..Diverse coating material
147	.With mechanical means to hold layers in contact
148	.Spaced
149	.With intermediate insulation layer
150	.With spiral seam
151	.With longitudinal seam
152	..Material of one layer passing through seam
153	.Reinforced
154	SPIRALLY SEAMED
155	JOINED SECTIONS
156	LONGITUDINALLY SEAMED
157	.Sectional
158	..With separate mechanical securing means
159	...Bolt, nail, rivet or screw
160	....Radially extending
161	...Externally encircling
162	..Tongue and slot
163	..Bent over lip or flange
164	.With packing
165	.With wedge
166	.With tongue in slot
167	.With diverse locking means
168	.With interlocking hooks
169	.Diversity of seam
170	.Permanent type seam
171	..Brazed, soldered or welded
172	REINFORCED
173	.Corrugated
174	.With embedded element
175	..Clay, concrete or masonry
176	...Reinforcement under tension
177	STRUCTURE
178	MISCELLANEOUS
	******************************
	DIGESTS
	******************************
DIG 1	Adhesive
DIG 2	Glass fiber
DIG 3	Teflon, Kel-F
DIG 4	Air conditioning
DIG 5	Pre-stress
DIG 6	Corrosion
DIG 7	Resins
DIG 8	Bent shaped retained
DIG 9	Cellular
DIG 10	Metal foil
DIG 11	Shape

CLASS 139 TEXTILES, WEAVING

1 R	MISCELLANEOUS
1 A	..Reed and fell gauges
1 B	..Inspecting devices
1 D	..Pick measuring and counting
1 E	..Loom driving, reversing and disconnecting mechanism
1 F	..Reweaving
1 C	..Loom cleaning
2	PILE TUFTING
3	.Around warp
4	..Oriental knot
5	...Warp traversing
6	...Portable supply
7 R	.Portable supply
7 A	...Tuft yarn carrier
7 B	...Carrier chain mechanism
7 C	...Transfer device
7 D	...Gripper means
7 E	...Tuft forming means
7 F	...Cutter means
7 G	...Tube brake means
8	..Including tuft presenting
9	...Tuft presenting
10	....Tube frames
11	SPECIAL-TYPE LOOMS
457	.Circular, progressive shedding
458	..Longitudinal shedding
459	..Shuttle
14	..Open back
15	..Contacting shuttle and shed control
16	..Radial heddle movement
17	.Open-back shed
17.5	.Supplemental open-back shed
18	.Vertical shed
19	..Seed-corn stringers
20	.Multiple-shed
21	..Pile
22	..Narrow ware
23	...Rack and pinion shuttle motions
24	.Irregular warp feed
25	..Terry
26	...Beat-ups
27	....Separate reed
460	.Longitudinally moving shed
28	.Pushed shed pocket
29	.Hand looms
30	..Pushed harness
31	...Cam shedding
32	..Cam shedding
33	..Manual shedding
33.5	...Darning
34	..Warp frames
35	WARP MANIPULATION
36	.Fluid treatment
37	.Pile
38	..Loop hook
39	..Transverse wire
40	...Wire control
41	....Including end motions
42	.....End motions
43	...Separate cutting mechanism
44	...Pile wires
45	...Oiling
46	..Longitudinal wire, traversing
47	...Anchored release end
48	.Traversing
49	..Lappet
50	..Leno or gauze
51	...Doup heddle
52	....Heddles
53	...Needle-eye heddle
54	..Selvage
55.1	.Shedding
56	..Disconnecting mechanism
57	..Pushed harness
58	...Double-acting cam
59	..Jacquard
60	...Knotted cord
61	...Multiple cylinder
62	...Group control
63	...Locked open shed
64	...Mid closing
65	...Double lift
66 R	..Dobby
66 A	....Dobby loom details
67	...Vibrating griff
68	....Jacquard pattern
69	....Mid closing
70	.....Curved motion
71	....Double lift
72	.....Locked open shed
73	......Irreversible transmission
74	.....Evener direct
75	....Harness levelers
76	...Rotating actuator
77	....Vibrator gear
78	..Pattern direct
79	..Cam
80	...With varying means
81	...Double acting
82	..Harnessing
83	...Power to both sides
84	...Power to top
85	....Jacquard
86	.....Comber boards
87	...Interharness connections
88	...Strap connections
89	...Retractors
90	....Lingoes
91	...Harnesses
92	....Supplemental heddle rod
93	...Heddles
94	....Separate eye
95	....Twisted wire
96	....Perforated strip
455	..Electric or magnetic actuator
456	..Fluid pressure actuator
97	.Feeding
98	..Lease rods
99	..Interconnected let-offs and take-ups
100	..Let-offs
101	...Multiple
102	....Pile
103	....Tension regulated
104	...Independent of supply
105	...Speed regulation
106	....Exhaustion compensated
107	.....Radius
108	......For positive
109	....Tension
110	.....For positive
111	...Automatic arresters
112	....Beat-up resisting
113	...Manual resetters
114	..Whip rolls
115	...Positive slackeners
116.1	WEFT MANIPULATION
116.2	.Means for withdrawing defective weft
116.5	.Pile
116.6	..Longitudinal wire, anchored release end
117	.Special length
118	..Fringe
119	..Swivel shuttle
120	...With main shuttle control
121	...With rack and pinion
429	.Weaving with stationary weft supply
430	..Selvage forming
431	...By knitting
432	....With additional thread
433	...By shuttle
434	...By tucking
435.1	..Weft inserted by fluid jet from nozzle
435.2	...With means for controlling flow from nozzle

WEFT MANIPULATION
.Weaving with stationary weft supply
..Weft inserted by fluid jet from nozzle
435.3 ...Including plural main nozzles and positioning means therefor
435.4 ...Main nozzle
435.5 ...Auxiliary nozzle
435.6 ...Fluid jet guide
436 ..Progressive shedding
437 ..Weft inserted by shuttle
438 ...By gripper shuttle
439 ....Inserted from only one side of loom
440 ..Weft inserted as double picks
441 ...By permanently threaded reciprocating needle
442 ...By permanently threaded pivoted needle
443 ..Weft inserted as single pick
444 ...By gripper needle on insertion stroke
445 ...By gripper needle on withdrawal stroke
446 ...By a plurality of needles
447 ...Needle thread engaging portion
448 ....Thread gripper
449 ..Drive or guide mechanism for weft inserting needles
450 ..Weft handling
451 ...For hair, cane, straw or slats
452 ...Measuring or storing
453 ...Selecting
454 ..Diagonal weaving
133 .Shuttle motions
134 ..Magnetic
135 ..Narrow ware, positive
136 ...Rack and pinion
137 ....Weft change
138 ....Actuators
139 ...End engagement
140 ....Single shuttle
141 ..End engagement, positive
142 ..Fly
143 ...Intermediate pickers
144 ...Pneumatic
145 ...Spring propelled
146 ...Lay-carried stick
147 ....Vertical bell crank
148 ....Foot actuated
149 ....Foot construction
150 .....Rocker
151 ....Lug connections
152 .....Foot supported
153 .....Lug straps
154 .....Lug-strap supports
155 ...Shuttle positioners
156 ...Disconnecting mechanisms
157 ...Picker sticks
158 ...Picker spindles
159 ...Pickers
160 R ....Spindle-guided pickers
160 A ......Picker wear plates
161 R ...Picker and picker stick checks
161 S .....Check strap
161 F .....Fluid check
162 ....Special connection
163 ....Friction
164 .....Lateral
165 .....Double-acting shifter
166 ....Nonmetallic buffer
167 ....Spring buffer
168 .....With taut strap
169 .....With pivoted arm
170 .....With offset arm
170.3 .Inactive weft restrainers
170.4 ..With cutter
170.6 ..Box position responsive
170.7 ...Dummy or displaced warps
171 .Box change motions
172 ..Revoluble box
173 ..Vibrating actuator and wheel
174 ...Rack and pinion
175 ..Vibrating actuator and catch
176 ...Varied
177 ....Step type
178 ..Rotating actuator and gear
179 ...Axial shift
180 ...Vibrator gear
181 ..Connecting motions
182 ..Box-supporting instrumentalities
183 .Shuttle boxes
184 ..Multiple
185 ..Shuttle checks
186 ...Shuttle actuated
187 ...Relieving
188 R .Lays or beat-ups
188 A ...Yielding reed
189 ..Loose reed
190 ..Motions
191 ...Separate reed
192 ..Reeds
193 ..Shuttle guards
194 .Tensions
195 .Selvage-loop retainers
196.1 .Shuttles
196.2 ..Gripper or dummy shuttle
196.3 ..Single pick shuttle
196.4 ..Shuttle tips
197 ..Types
198 ...Exteriorly supported cop
199 ...Bow
200 ....Brake tension
201 ....Tortuous-course tension
202 ...Roller bearing
203 ..Detecting
204 ...Float
205 ...Exhaust
206 ..Thread-carrier supports
207 ...Automatically replenished
208 ...Pivoted spindle
209 ....Detachable
210 ....Spindle-actuated retainer
211 .....Exterior
212 ..Thread-delivery control
213 ...Uncoiling engagement
214 ...Tortuous course
215 ....Threader slot
216 ...Spring clamp
217 ....Threader slot
218 ...Friction material
219 ....Threader slot
220 .....Loom threading
221 ...Threading feature
222 ....Slot
223 .....Loom threading
224 R .Replenishing
224 A ...Bobbin winding and supply means
225 ..With other loom-parts control
226 ...Suspension
227 ....Of main shaft
228 ....Of stopping
229 ..Delayed
230 ..Prevented
231 ...Revoked
232 R ..Multicolor type
232 A ....Multicolor shuttle changes
232 B ....Multicolor magazine
232 C ....Bobbin delivery control
232 D ....Magazine and shuttle coordinated
232 E ....Color coordination with conveyor
232 EA .....Bobbin release
232 F ....Pick and pick
233 ...Feeler mechanism
234 ..Shuttle changing
235 ...Manually controlled
236 ...Supply and discharge at different ends
237 ...Exhausted shuttle deflected

		WEFT MANIPULATION
		.Replenishing
		..Shuttle changing
238		...Contacting shuttles
239		...Movable shuttle box
240		....Progressive
241		..Bobbin changing
242		...By moving transferrer
243		....Lay actuated
244		...Transferrer tips
245		...Bobbin supply
246		....With thread control
247		.....With gravity feed
248		.....With rotary battery
249		....Rotary battery
250		.....Battery feeds
251		...Bobbin guides or supports
252		...Shuttle positioners
253		....Inner tip pushers
254		...Bobbin-smash preventers
255		...Ejected-bobbin receivers
256	R	..Thread control
256	A	....Pneumatic
257		...Incoming thread
258		....Attached to magazine
259		.....Shuttle threading
260		...Positioning outgoing thread for cutting
261		...Shuttle clearing
262		....With bobbin manipulation
263		...Cutting mechanism
264		....On shuttle feeler
265		....On lay
266		....On temple
267		....Operated by transfer
268		....Operation prevented
269		..Feeler mechanisms
270		...Suspended actuation
271		...Positively withdrawn
272		....Lay carried
273	R	...Electric
273	A	.....Photo-electric
274		...Magnetic
275		...Detector in shuttle
276		...Becoming quiescent
277		....With auxiliary bobbin and shuttle contact
278		...Yarn impinging and lay actuation
279		...Yarn impinging and penetrating members
280		...Rotary
281		...Side slipping
282		....Spring stressed
283		.....Pivoted carrier
284		.....Slidable carrier
285		....Pivoted carrier
286		....Slidable carrier
287		...Feeler tips
288		...Positioners
289		..Feeler cooperating bobbin elements
291	R	FABRIC MANIPULATION
291	C	..Cutter mechanism
292		.Temples
293		..Clamping jaw
294		..Rotary
295		...Roller and pod
296		...Roller surfaces
297		...Bearing for rollers
298		...Supports
299		....Sliding
300		....Displacing means
301		....Positioning adjustments
302		.Selvage trimmers
303		..Lay actuated
304		.Take-ups
305		..Irregular shape
306		..Traversing
307		..Sand-roll type
308		...Contacting wind-up
309		..Speed regulation
310		...Increase compensated
311		...Tension
312		...Manual
313		..Automatic let-backs
314		..Automatic arresters
315		..Fraud preventers
316		..Manual resetters
317		PATTERN MECHANISM
318		.Picture pattern
319		..Electrical
320		.Lateral shift
321		.Skip motions
322		.Multiple cylinder
323		..With control pattern
324		.Reverse
325		..With control pattern
326		.Multipliers
327		.Loom-part control
328		.Reset
329		.Cylinder motions
330		.Cylinders
331		.Feelers
332		.Pattern guides
333		.Patterns
334		..Movable pins
335		..Cards
336		STOPPING
336.4		.Weft replenishing
336.6		..With shuttle position detector
337		.Harness-mechanism actuated
338		.Pattern-mechanism actuated
339		.Take-up mechanism actuated
340		.Predetermined
341		.Shuttle-position detectors
342		..Improper presence in shuttle box
343		...Shuttles in both boxes
344		..Positive-shuttle-motion type
345		..Protector-rod type
346		...With sliding frog
347		...With relief mechanism
348		.Thin-place detectors
349		.Warp
350		..With leasing
351		..With break locating
352		..Nonindividual detector
353		..Electrical
354		...Pivoted detector
355		...Shed-lifted detector
356		....Lay knock-off
357		...Lay knock-off
358		...Supports
359		..Nonarrestable vibrator
360		..Arrestable vibrator
361		...Pivoted detector
362		....Lay knock-off
363		...Shed lifted detector
364		....Lay knock-off
365		...Transverse motion
366		....Lay knock-off
367		...Lay knock-off
368		..Detectors
369		..Supports
370.1		.Weft
370.2		..Stationary supply, e.g., shuttleless type
371		..Detector in shuttle
372		..Detector fork
373		...Vibration preventers
374		...Lay carried
375		....Dropping
376		.....Supplementally aided
377		...Slidable tilting
378		....Forks
379		...Grids and cleaners
380		WEAVERS' IMPLEMENTS
381		.Shuttle threaders

	WEAVERS' IMPLEMENTS
	.Shuttle threaders
382	..Pneumatic
383 R	FABRICS
383 A	..Drier felts
383 AA	...Joint structure
383 B	..Woven-knit
384 R	.Special shape
384 A	...Venetian blinds
384 B	...Zipper tapes
385	..Fringes
385.5	..Collar
386	..Curved
387 R	..Tubular
387 A	....Header tape
388	...Uniform
389	...Bags and pockets
390	....Permanently united
391	.Pile
392	..Weft
393	...Chenille
394	....Multiweft planes
395	..Chenille strands
396	..Terry
397	..Separable fabrics
398	...Each with multiweft planes
399	..Tufted
400	...Oriental knot
401	...Multiweft planes
402	..Regularly shedded warp
403	...Multiweft planes
404	..Selected warp
405	...Multiweft planes
406	....Divided by stuffer warp
407	.Separable
408	.Multiweft planes
409	..Independent plies
410	...Two-ply
411	..Three-weft planes
412	...Separated weft
413	..Two-weft planes
414	...Separated weft
415	....Divided by stuffer warp
416	.Figured, single-weft plane
417	..Striped
418	..Double faced
419	.Cross weave
420 R	.Materials
420 A	...Fabrics wooven of artificial non-cellulosic yarns
420 B	...Paper or cellulose
420 C	...Glass
420 D	...Asbestos
421	..Elastic
422	...Inelastic sections
423	...Multiweft planes
424	..Including straw or vegetable stalks
425 R	..Including metal
425 A	....Fourdrinier cloth
426 R	..Textile-thread type
426 TW	....Fabric formed with yarns of different twist
427	...Including nonfelting animal fibers
428	....Silk
	##############################
	DIGEST
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DIG 1	Bias fabric digest

CLASS 140 WIREWORKING

DECEMBER 1990

1	COMBINED MACHINES
2	MISCELLANEOUS
71 R	ARTICLE MAKING OR FORMING
71 A	..Stain-gauge
71 B	..Vacuum tube grids
71 C	..Coils
71.5	.Electric lamp or electric space discharge device electrode
71.6	..Filament mounting
72	.Heddles
73	.Bale ties
74	.Box straps
75	.Bails
76	.Ferrules
77	.Hat wires
80	.Hooks
81	..Garment fastener type
81.5	..Garment hanger type
82	.Clips
83	..Clothespins
84	.Belt lacings
85	.Cork fasteners
86	.Corkscrews
87	.Hairpins
88	.Rings
89	.Spring setting
90	.Stays
91	..Garment
92	.Stud spirals
92.1	.Forms and frames
92.2	..Revoluble
92.3	.Helix screwing through row of loops or openings
92.4	..Method
92.5	..Repeated interlacing with same row (e.g., cording mechanism)
92.6	..Simultaneous interlacing of plural helices
92.7	..Combined
92.8	..Loop row shifter
92.9	..Helix rotator travelling axially
92.93	..Grooved roller helix guides
92.94	..Helix embracing guides
93 R	APPLYING WIRE
93 A	..Wire ties
93 B	..Bail-attaching
93 C	..Wire bound boxes
93 D	..Clip clinching
93 E	..Wire pull bottle caps
93 F	..Handle attaching
93.2	.Binder tightening and joining implements
93.4	..Sleeve or clamp joining
93.6	..Twisters
94	.Bottles and corks
95	..Rotary bottle
97	.Card clothing
100	.Comb making
150	SEAL APPLYING OR BAND FASTENING
151	.By device having magazine for seals or fasteners
152	.By device having cutting edge
153	.By device having single throw lever
154	..Including pivoted force multiplier between die and lever
3 R	FABRIC MAKING
3 A	..Chain fabric
3 AA	..Link and perforated plates
3 B	..Rings
3 BA	..Ring and spider plate
3 C	..Reinforced fabrics
3 CA	..Coil spring mattresses
4	.Rotary machines
	.All wire
5	..Multiple strand
6	..Hexagonal mesh
7	..Quadrangle mesh
9	..Diamond mesh
10	..Stay applying
11	...Clip joining
12	...Wrapped loop
13	...Short stay
14	...Loop strand
15	...Successively wrapped stay
16	..Portable machines
17	...Mesh making
18	...Stay applying
19	....Multiple strand
21	....Wrapped loop
22	....Looped strand
23	....Successively wrapped stay
24	..Edge-strand binding
25	.Slat and wire
26	..Slat cutting
27	..Magazine
28	..Dummy spacing
29	..Movable carriage
30	..Strand twisting
31	...Embedding
32	...Beaters
33	...Spreaders
34	..Strand coiling
35	..Weavers
36	..Twister heads
37	..Portable machines
38	...Magazine
39	...Strand twisters
40	....Slat adjustment
41	....Plumb adjustment
42	....Beaters
43	....Vertically adjustable
44	....Eccentric type
45	....Wire crossers
46	.....Oscillatory
47	...Strand coilers
48	...Weavers
49	...Tie-wire appliers
50	..Spacers
51	.Clamps
52	.Implements
53	..Magazines
54	...Revoluble head
56	..Slat attaching
57	...Tie-wire appliers
58	BARBING
59	.Barb-wire feeding
60	..Multiple strand
61	..Four-point barbs
62	...Strand crimping
63	...Rotary coilers
64	..Strand crimping
65	..Rotary coilers
66	.Sheet metal
67	.Separate barbs
69	.Implements
70	..Revoluble head
101	KNOTTING
102	LOOP FORMING
102.5	.Implements
103	.Coil springs
104	EYE FORMING
105	CRIMPING
106	.Implements
107	FABRICS, WORKING
108	.Stretchers
109	..Frame attaching
110	...Bed bottoms
111	JOINING WIRE
112	.Electric welding
113	.Machines
114	..Interlocking eyes, making
115	..Revoluble head
116	.Tying dies
117	.Implements
118	..Twisters
119	...Revoluble head

	JOINING WIRE
	.Implements
	..Twisters
120	...Spread wire
121	..Plier type
122	..Revoluble head
123	IMPLEMENTS
123.5	.Stretchers
123.6	..Cutting feature
124	.Coiling
139	WIRE CUTTING AND STRAIGHTENING
140	.Predetermined lengths
147	WIRE STRAIGHTENING
149	WIRE TWISTING

CLASS 141 FLUENT MATERIAL HANDLING, WITH RECEIVER OR RECEIVER COACTING MEANS

1 PROCESSES
1.1 .Battery grid pasting
2 .Filling dispensers
3 ..Aerosol or gas-charged type
4 .Gas or variation of gaseous condition in receiver
5 ..With filling with fluent non-gaseous materials
6 ...Counter-pressure type
7 ...With evacuation of container
8 ..Vacuum
9 .Plural materials
10 .Bag filling
11 .With material treatment
12 ..Compacting
13 MODIFICATION OF FILLING CYCLE IN STARTING AND STOPPING
14 SIPHON BOTTLE CHARGING ARRANGEMENTS
15 .For receiver with diverse filling opening
16 .With plural heads, stations or materials
17 .With gas capsule supporting or manipulating means
18 FILLING OR REFILLING OF DISPENSERS
19 .With cutter or punch for gas pressure cartridge
20 .Aerosols
20.5 .Coating-implement-type receiver
21 .By operation of means causing or controlling dispensing
22 ..Removable dispenser is supply container closure
23 ...Expansible chamber dispenser
24 ....Resilient wall
25 ..Expansible chamber of fluid pressure applying or controlling means
26 ...Dispenser carried expansible chamber pump
27 ...Container with follower
28 ...Container mounted jet pump
29 .Closure type with manually controlled vent
31 CAPILLARY TYPE
32 BATTERY GRID PASTING
33 .Separate sources applied to opposite sides
34 CENTRIFUGAL FILLING
35 PLURAL CONNECTED RECEIVERS FILLED BY SERIAL FLOW
36 .Succeeding receiver advanced to filling position
37 DIVERSE FLUID CONTAINING PRESSURE FILLING SYSTEMS INVOLVING RECEIVER GAS CONTENT MODIFICATION
38 .Tire inflation
39 .Filling means controlled by gas condition in receiver
40 ..Control by level in filled receiver
41 ...Air pump external to flow line
42 ....Float controlled vacuum line cut-off
43 .....Vacuum line vented to atmosphere
44 .Gas and other material separating passage or chamber
45 ..Material returned to supply
46 .System fluid used in seal or in valve or lift operation
47 .Gas control or supply varied, shifted or supplemented during cycle
48 ..Gas cycle for pre-treatment of receiver or contents material
49 ..Plural or diverse gassing and/or filling cycles
50 ..Shifted to vent or fill pipe
51 .Gas condition control in housing for receiver
52 .With separate storage of gas displaced from receiver
53 ..With receiver vent to measuring trap
54 .With plural diverse passages for gas to receiver or head
55 ..Vent to drain fill pipe
56 ..Three or more
57 ..Receiver vented to atmosphere before separation (e.g., snift)
58 ...Constant bleed
59 .Filling with exhausting the receiver
60 ..Receiver coupling comprises movable pump element
61 ..Vacuum cut-off before filling
62 .With lateral travel of registering head and receiver
63 .Gas treatment
64 ..Of filled receiver
65 EVACUATION APPARATUS
66 .With filling with gas
67 FLUENT CHARGE IMPELLED OR FLUID CURRENT CONVEYED INTO RECEIVER
68 .Valve bag type
69 WITH MATERIAL TREATMENT
70 .With fluid contact (e.g., jetting)
71 .Compacting
72 ..Agitation of head and receiver
73 ..Compacting material in receiver
74 ...Agitation
75 ....Of suspended receiver
76 .....Valve bag chair
77 ....With distortion of or impact on receiver side walls
78 ....Agitating means associated with receiver conveyer
79 .....Rotary conveyer
80 ...In filled receiver
81 ..With contraction of trap to form charge
82 .Heating or cooling
83 WITH TESTING OR WEIGHING RECEIVER CONTENT
84 CONVERTIBLE
85 WITH SOIL REMOVING, COATING, LUBRICATING, STERILIZING AND/OR DRYING
86 .Drip collection
87 ..Collector shiftable to non-use position
88 ..Collector associated with receiver support
89 .With cleaning, coating or drying means
90 ..Nozzle cleaner
91 ..Treatment by fluids
92 ...Pre-treatment of receiver
93 .Suction hoods and off-takes
94 WITH SIGNAL, INDICATOR, RECORDER, INSPECTION MEANS OR EXHIBITOR
95 .Level or pressure in receiver
96 ..Hose nozzle or faucet mounted
97 WITH GUARD OR SCREEN FOR OPERATOR
98 COMBINED
99 PLURAL DIVERSE FILLING LINES
100 PLURAL MATERIALS, MATERIAL SUPPLIES OR CHARGES IN A RECEIVER
101 .Lateral travel of registering head and receiver
102 .Plural charges from the same source
103 .Separate stations for a single receiver
104 .Selectively utilized sources
105 .With common discharge
106 ..Dumping or draining
107 ..With mingling in or successive path through trap
108 SCOOP TYPE FILLER WITH ASSOCIATED RECEIVER
109 .Receiver within scoop or inserter
110 ABSORPTION AND/OR IMMERSION

	ABSORPTION AND/OR IMMERSION
111	.With handling means for receiver
112	.Receiver secured to supply closure
113	RECEIVER FILLED THROUGH BOTTOM OR WHILE INVERTED
114	WITH MANIPULATION OF FLEXIBLE OR COLLAPSIBLE RECEIVER OR SUPPLY
115	DRIP PREVENTION BY FLOW REVERSING AND/OR OVERFILL REMOVAL
116	.By means reversing direction of flow
117	..Expanding chamber in disengaged head
118	..By tilting receiver and adjoined filler
119	..Interconnected supply valve cut-off and vacuum control
120	..Siphonic return to supply
121	.Separate removal station
122	..With subsequent filling
123	..Combined displacement receptacle and vacuum means
124	..Receiver tilting or inverting means
125	..Wiping, scraping or spatulating means (e.g., trimming)
126	.Simultaneous filling and removing
127	..Double acting or plural pumps
128	DRIBBLE OR REDUCED FLOW AT END OF CYCLE
129	WITH CONVEYING MEANS TO SUPPLY SUCCESSIVE RECEIVERS
130	.Sampler type
131	.Continuous flow type
132	..Receivers with overlapping flanges or apertured shields
133	..Receiver carrier forms moving support for supply
134	..With spaced receivers and redirected flow
135	.With lateral motion of registering head and receiver
136	..Bodily lifted or swinging siphon filling means
137	..Laterally reciprocating head or trap
138	..Interrupted or irregular cycle
139	...Automatic control by contents material
140	...No can - no fill
141	....Power control by receiver
142	.....Cam track switching
143	.....Vertical axis trigger
144	..Rotary set of heads
145	...Common vertical axis for conveyer
146	....With vertically reciprocating plunger or valve piston for each head
147	....With cam or abutment operated valve or head
148	....With lift means for receiver
149	.....With additional cushion or yielding lift
150	.....Cam lift or lowered movement
151	....Manually placed receivers
152	....Adjustable to receiver size
153	.Automatic control of filling cycle by contents material
154	.Receiver with asymmetrical or flap closed inlet
155	.Safety-stop or non-operating interlock between supply and conveyers
156	.Fill triggered by receiver
157	..Individual receiver controls the filling cycle therefor
158	...Charge-forming prevention or charge disposal
159	...Power control by receiver
160	....Servo-system
161	....Clutch control
162	...Power derived from lateral motion of receiver
163	.Horizontal axis conveyer
164	.Receiver supported on side during filling
165	.With relatively movable receiver grip or centering means
166	..Bag type receiver
167	.With variable rate of receiver travel in cycle
168	.Conveyer with additional receiver conveying or manipulating means
169	..Plural receiver lines to or from single
170	..Lateral shift at filling station between parallel receiver paths
171	..With change in receiver orientation
172	..With lifting or lowering means for receiver for filling
173	..With receiver dispenser
174	...Cup-type dispenser
175	...Reciprocating discharge means and receiver guideway
176	..Conveyer with relatively movable receiver discharge means
177	.Nozzle, guide or conveyer adjustable to receiver size
178	.Successive groups or non-sequential filling of a receiver series
179	..From a single uniform line of receivers
180	.Continuously moving conveyer with receiver stop
181	.With head, manifold or supply lowering means
182	..Separate movable or removable sleeve or funnel supply terminal
183	.With interconnected contents discharge means
184	..With predetermined number of cycles
185	...Single group filled by rows
186	..Plural lines
187	..With contents gripping or penetrating discharge means
188	..With valve period adjustment
189	..By contact with conveyer projection
190	..Ratchet drive for conveyer
191	..Cam and gear drives
192	AUTOMATIC CONTROL OF FLOW CUTOFF OR DIVERSION
193	.Responsive to relative recession of supply means and receiver engaging means
194	..Ejection or release of filled receiver
195	..Discharge assistant control by filled receiver
196	.Control by test receiver or chamber or by filled preceding receiver
197	.In gas filled receivers
198	.Level or overflow responsive
199	..Funnel type closed by float
200	...Valve latched in open position
201	...Normally open with closed position holding means
202	...Plural series valves
203	...Valve stem accessible at top of funnel
204	....Single valve and float stem
205	...Pivoted valve
206	..Manually initiated valve with both manual and level cut-off controls
207	...With receiver positioned interlock
208	...With nozzle dislodgment valve trip means
209	...Manual control disabler or disconnect
210	...Separate controls for plural series liquid flow line valves
211	....Self-opening valve
212	.....Float initiates closing control

	AUTOMATIC CONTROL OF FLOW CUTOFF OR DIVERSION
	.Level or overflow responsive
	..Manually initiated valve with both manual and level cut-off controls
	...Separate controls for plural series liquid flow line valves
	....Self-opening valve
	.....Float initiates closing control
213	......Float arm operated valve
214	.....Pressure initiated closing control
215	......Liquid back pressure completes closing
216	....Float operated valve
217	...Diverse controls for single valve
218	....Valve latched open
219	.....Electromagnetic trip
220	.....Float controlled trip means
221	......With sensitivity or level adjustment
222	.......Adjustable receiver engaging or coacting means
223	......With spring means biasing valve to close
224	.......Reciprocating valve
225	.....Air displacement trip means
226	......By response to receiver pressure increase
227	..External initiator as second diverse control
228	...Series flow line valves
229	....Float control cut-off
230	WITH SIPHON FLOW CONTROL BY EQUALIZED LEVELS
231	PORTABLE SYSTEMS OR TRACK MOUNTED SUPPLY MEANS
232	.Track mounted
233	..Track on receiver supporting means
234	PLURAL FILLING MEANS
235	.Adjustable lateral spacing of heads or receivers
236	.Diverse flow manifold
237	.For plural receivers simultaneously filled
238	..Supply apportioned prior to delivery
239	...Tilting tray or trough means
240	...Grid or cellular insert type divider
241	...Inverted for discharge to receivers
242	..With discharge means
243	...With means for selective operation
244	...Manifold or divider
245	....Displacement type
246	..With receiver ejecting and/or accommodating means
247	.Aids to manual filling
248	.Alternating
249	WITH CHARGE FORMING MEANS CONTRACTING TRANSVERSELY TO FLOW PATH
250	WITH MEANS TO MOVE SUPPLY MEANS AND/OR RECEIVER TO, FROM OR DURING FLOW RELATION
251	.Relatively receding discharge assistant and receiver engaging means
252	..With external form for receiver
253	..With lift or power drive for receiver support
254	..Receiver support bias varied with position of support
255	..With feeder and additional flow modifier or retarder at foot of fill tube
256	..Continuous feeding during filling (e.g., rotary auger)
257	...Receding receiver support or engaging means
258	..Axially reciprocating discharge assistant
259	...Rotatable reciprocating discharge assistant
260	...Reciprocating filling tube type discharge assistant
261	...With synchronized intermittent supply (e.g., check valve)
262	...With receding receiver support
263	.Relatively receding filling tube and receiver engaging means
264	..With flow stop or severer at foot of fill tube
265	.With means to separate filled receiver and internal form
266	.With adjustable movable component
267	.Unitary receiver support and flow controller
268	..Rotary or oscillating
269	.With clamp for receiver interconnected with movable head or lift
270	.Both supply means and receiver support having movement
271	.Swinging support for receiver
272	..Tilting type support for separating receiver from filling head
273	..Inversion of receiver
274	...Receiver with gravity operated valve
275	.Receiver lift or lower for filling
276	..With interconnected external means to control discharge
277	..Fluid operated lift
278	..Yielding lift
279	.With movable support for hose connected head or supply
280	.Scraping or leveling by lateral relative movement of supply means and receiver
281	.With means for manipulating a filled receiver for separation from head or support
282	..From an external form
283	.With movement of receiver in horizontal plane
284	.Movably mounted supply
285	MULTIPLE PASSAGE FILLING MEANS FOR DIVERSE MATERIALS OR FLOWS
286	.With baffle, spreader, displacer, drip ring, filter or screen
287	.With gas expanded seal
288	.Adjustable outlet element controls level
289	.Vent laterally shiftable
290	.With flue or vent externally returning to supply
291	.With valve operated by receiver engaging means
292	..Valve operator interconnected with receiver inlet engaging means
293	...Plural valves operated
294	....With mechanical or lost motion connection
295	...Concentric open vent
296	..Biased coaxial valve stem and nozzle
297	.Funnel type
298	..Concentric vent forms valve stem
299	..Concentric external vent
300	..Vent extends along wall to top
301	.With valve
302	..Plural valved passages
303	...Float operated vent cut-off
304	...Swingable nozzle operated liquid supply valve
305	...Rigidly interconnected or intergral valves
306	...Gravity seated inversion opened valve
307	..With trap or chamber in vent passage
308	..Air vent to supply cut-off by liquid in receiver

	MULTIPLE PASSAGE FILLING MEANS FOR DIVERSE MATERIALS OR FLOWS
309	.With air inlet to liquid supply
310	.Passage formed by head and receiver spacing means
311 R	FILLING MEANS WITH RECEIVER OR RECEIVER COACTING MEANS
311 A	..Drip prevention
312	.Extensible or expansible inserted coupler or centering means for receiver
313	.Flexible or collapsible receiver
314	..With bag or liner securing means
315	...Valve bag clamp and/or chair
316	...With inserted or external form for bag
317	...With flow controlling means
318	.Filling by retracting receiver or cartridge
319	.Manually coupled and inverted
320	..With discharge assistant, trap or valve
321	...Receiver operated supply discharge means or controller
322	...Combined supply closure and trap
323	.Siphon type
324	.Continuous flow or overflow type supply
325	.Receiver with plural compartments or openings (e.g., vents)
326	..With means to cap or close an opening
327	...Receiver open at both ends
328	.Filling means or support provides handle for receiver
329	.With puncturing connecting means
330	..Mounted on receiver
331	.Funnel type
332	..With connector, guide or support for separable supply
333	..Supply or flow path not concentric with receiver inlet
334	...Laterally extending spout
335	..Valves open when funnel rests on receiver
336	..Valve closed by lifting on funnel handle
337	..Flexible, collapsible or folding
338	...Stored in or on receiver
339	..Anti-swirl, anti-splash, cover or shield
340	..With additional support
341	...With nonsystem support
342	....Nonuse
343	.....Supported on supply container
344	..With valve actuator or extended stem
345	...Relatively movable
346	.Interlocked discharge means, support and/or coupling
347	..With coupling means responsive to material flow
348	.Supply means carried receiver flow control opening means
349	..Coupling controls receiver inlet flow
350	...For inlet with externally engaged flap or closure member
351	.Receiver actuated discharge means
352	..Movable supply or head
353	..Receiver coupling telescopes flow path elements
354	...Mechanical or lost motion connection
355	...Connection external to tube or tube sections
356	...Control by contact at bottom of receiver
357	..Receiver applied to plunger-type follower
358	..Scoop or drawer type
359	..Receiver weight operated discharge means
360	..Actuator juxtaposed outlet
361	...Servo-system
362	...Relatively movable actuator
363	.Filling supply supported by receiver
364	..Dumping or draining type
365	..Material guide
366	...Supply container hand manipulated
367	.Adjustable contact area or plural interchangeable or selectively usable coupling means or flow paths
368	.Adjustable gauge collar, displacement member or seal
369	.With receiver support, guide means, or shield
370	..Guide or shield
371	...Reciprocating guard or guide
372	...Receiver neck or inlet rim engaging support
373	...For movement of receiver laterally of supply outlet
374	..Fill tube extending to or near bottom of receiver
375	..With support for removable supply container
376	..With adjustable support for supply
377	..Receiver swingably supported or supported by bail
378	..Plural interchangeable or selective or adjustable support for receiver
379	..Nonuse position or cover
380	...Receiver supported by supply container
381	....Closure type
382	.Flexible hose terminal with receiver engaging means
383	.With receiver and supply securing means
384	..Rotatable collar or sleeve
385	..Telescoping jaws
386	..Fixed flange on supply means for engagement of receiver
387	FILLING HEAD SHIFTABLY OR SEPARABLY CONNECTED TO SUPPLY
388	.Flexible or collapsible coupling section
389	..Hand-held head
390	INSERTED OR EXTERNAL FORM OR PROTECTOR
391	MATERIAL GUIDES OR SUPPLY WITH RECEIVER SUPPORTS (I.E., AIDS TO MANUAL FILLING)
392	MISCELLANEOUS (E.G., FILLING HEADS)
	******************************
	DIGESTS
	******************************
DIG 1	Magnetic
DIG 2	Fluidic flow control valves

CLASS 142 WOOD TURNING

DECEMBER 1990

1	MISCELLANEOUS
	POLYGONAL SECTION
2	.Annular work holders
52	..Chucks
	PATTERN SECTION
3	.Many-spindle lathes
	.Oval form
16	..Guided chucks
51	...Counterpoises
	.Copying
	..Cutter
7	...Laterally and longitudinally movable
	...Rotary
11	....Fixed bearings
13	...Laterally movable
15	...Longitudinally movable
	.Clamped work
	..Cutter chisel
8	...Laterally and longitudinally movable
	.Cam controlled
	..Cutter
6	...Laterally and longitudinally movable
	...Rotary
10	....Fixed bearings
12	...Laterally movable
14	...Longitudinally movable
	.Cutter
9	..Rotary
	CIRCULAR SECTION
4	.Many-spindle lathes
5	..Automatic spindle feed
	.Spiral grooving
23	..Hollow cutter head
	..Cutter
26	...Rotary
24	....Pattern guide
25	....Hollow mandrel
33	....Rack-and-pinion feed
34	....Roller feed
35	...Chisel
17	.Automatic spindles lathes
18	..Endless feed
19	...Disk
20	..Chute feed
	.Clamped work
	..Hollow cutter head
45	...End turning
	..Cutter chisel
46	...Longitudinally movable
32	.Hollow cutter head
31	..Cutter chisel
27	...Radially movable, pattern guide
28	....Rotary
	...Pattern
30	....Radially movable
29	...Radially movable
	.Cutters
	..Chisels, plain and pattern
21	...Pattern guide
	..Rotary and chisel
22	...Pattern
	.Cutter
	..Slicing
36	...Longitudinally movable
40	..Rotary
37	...Pattern guide
41	...Pattern
42	..Chisel
38	...Pattern guide
39	....Rotary
43	...Pattern
44	....Disk
47	CARRIAGE FEED
48	TOOL RESTS AND WORK SUPPORTS
49	TOOL RESTS
	STEADY RESTS
50	.Yielding
53	LATHE CENTERS
54	HOLLOW MANDRELS
55	ATTACHMENTS
56	TURNING TOOLS
	WORK HOLDERS
57	.Socket

329	PROCESS
330	.Repairing or reconstructing
331	..Bowling pin
332	..Plywood, veneer or board
333	.Rattan or bamboo working
334	.Stump removing
335	.Timber harvesting or processing
336	..Tree felling
337	...And chipping
338	...Including delimbing and cutting trunk to length
339	...By shearing
340	..Debarking
341	...Mechanical (e.g., frictional, impacting, cutting)
342	....Including pretreatment
343	..Delimbing
344	.Securing
345	..And cutting or shaping
346	...Surface bonding
347	....Of interengaging work parts (e.g., dovetail)
348	....With heat application
349	....Bending concurrent or subsequent to bonding
350	....Cutting or shaping subsequent to bonding
351	.....Followed by additional bonding
352	....With pressure application
353	...By separate mechanical fastener
354	...Interengaging work parts
355	...Shaping by cutting
356	.Including monitoring of operation
357	..By means which determines dimension of work
358	.Embossing or imprinting
359	.Mechanical cutting or shaping
360	..With combined steps of shaping by cutting and forming
361	..Fiber working or reorientation
362	...Roller movement parallel to grain
363	..Cutting
364	...With heating, cooling, or fluid application
365	...Turning, boring or drilling
366	...Including splitting
367	...Plural discrete diverse cutting operations
368	....Including grooving
369	....Including slicing, slitting, chipping, or planing
370	.....Chipping
371	...Routing or grooving
372	...Using template or pattern
373	...Chipping or planing
374	....Using ganged cutting discs
375	....Using cylindrical tool
376	...Longitudinal sawing
377	....Longitudinally tapered work or product
378	....Log or cant sawing
379	...Transverse sawing
380	..With heating, cooling or fluid application
381	..Bending
50	MATCH MAKING
51	.Wax and paper
52	.Cutting, framing, and dipping
53	..Die punches
54	.Cutting and framing
55	..Die punches
56	...Fixed
57	.Cutting and coiling
58	.Framing and dipping
59	.Coiling
60	.Dipping
61	.Box filling
	.Dipping frames
62	..Emptying
63	..Filling
64	...Hopper feed
65	.Dipping frames
66	.Splint feed mechanism
207	OSIER PEELERS
208 R	ROSSING BARK
208 A	..Disk knife
208 B	..Drums and tanks
208 C	..Hand tools
208 D	..Hydraulic
208 E	..Hollow head cutter
208 F	..Simultaneously rotating and advancing log
208 G	..Non-traveling log
208 H	..Step-by-step
208 J	..Chain, cable, flail, hammer or percussive tool
208 K	..Tree climber
2 R	SPECIAL-WORK MACHINES
2 A	..Core and panel machines
2 B	..Box hinging
2 C	..Box making
2 D	..Block surfacing
2 E	..Cork cutting and making
2 F	..Shuttles and bobbins
2 G	..Ten pins
2 H	..Bowling balls
2 J	..Timber punching
2 K	...Perforating and expanding
2 L	..Ring joints
2 M	..Patch cutting
2 N	..Stump removing
2 P	..Ratan
2 Q	..Ladder
2 S	..Racks and grids
2 T	..Stagging
2 UA	..Oil cake trimmer
2 V	..Wooden shoes and lasts
2 W	..Coat hanger
2 XA	..Golf clubs
2 Y	..Lifters
2 Z	..De-limbing
2 AA	..De-knotting
3 R	.Combined
3 A	...Electrical sequence control
3 B	...Electrical, hydraulic sequence control
3 C	...Hydraulic sequence control
3 D	...Timber cutting and handling
3 E	...Assembly-line type
3 F	...Pivoted traveling
3 G	...Wheels and hubs
3 H	...Gaining and boring ties
3 J	...Tract car
3 K	...Spitting
3 L	...Box making
3 M	...Cord and strip wood connector
3 N	...Printing or marking
3 P	...Slabbing-off, log squaring
3 Q	...Mechanical sequence
3 S	...Mechanical sequence by tape
5	..Blind and sash cutting
6	...Relishing
7	..Box blank
8	..Chair-round tenoning and sawing
9	..Clothespin
10	..Conveyor flight
11	..Handle
12	..Pin
13	..Shingle
14	..Spool
15	..Wheel tenoning and boring
16	..Wheel hub
18	..Wheel-spoke tenoning and sawing
19	..Window-stile-pocket cutting
4	..Circular section
	.Single or combined

	SPECIAL-WORK MACHINES
	.Single or combined
20	..Disk cutting and boring
21	..Disk cutting
23	...Rotary tubular cutter
24	...Sweep cutter
25	..Box hooping
26	..Comb-teeth cutting
27	..Hinge-seat cutting
29	..Piano-hammer felting
28	..Pencil-wood making
28.1	..Pencil sharpening
28.11	...Hand-manipulable
28.2	...Including elongated work holder or guide for edge-beveling
28.3	...Movable tool
28.4	....Work-actuated tool drive
28.5	....Work-controlled switch for tool drive
28.6	....Rotatable or revoluble
28.7	.....Planetary
28.71	......Plural tools
28.72	......Including orbital or electric motor drive
28.8	.....Work holder or guide also rotary
28.9	....Rotary work holder or guide
30	..Pin pointing
33	..Tray making
34 R	..Tree felling
34 A	....Tree pullers and pushers
34 B	....Tree felling methods
34 C	....Anti-split clamps
34 D	....Burning and charring
34 E	....Shears
34 F	....Single blade and pass
1 R	COMBINED MACHINES
1 A	..Turret tools
1 B	..Coaxial tools, different work levels
1 C	..Tippable frame
1 D	..Combined bandsaw
1 E	..Hand-held
1 F	...Attachments to hand-held
1 G	..Different motor positions
1 H	..Levels on machine
1 J	..Flexible shaft drive
35 R	.Boring and sawing
35 A	...Attachments for converting one tool to other
36	.Planing and matching
37	.Planing, matching, and dividing
38	.Planing and polishing
39	.Planing and sawing
40	.Riving and shaving
41	.Shaping and dividing
42	.Slicing and scoring
43	.Slicing and shaving
44	..Converging knives
46	.Turning and boring
47	.Turning and polishing
48	.Turning and sawing
49	MISCELLANEOUS SINGLE-OPERATION MACHINES MORTISING
67	.Multiple chisel
68	..Portable
69	.Auger cutter
70	..Portable
71	..Automatic step feed
72	.Chain cutter
73	..Portable
	.Chisel
74	..Boring and mortising
75	.Chisel
76	..Portable
77	.Chisel reversers
78	.Hollow chisel and bit
79	..Portable
80	.Oscillating chisel
81	..Portable
82	.Rotary cutter
83	..Portable
84	.Work supports
85	DOVETAILING
86	.Consecutive cutters
87	.Frusto-conical bit
88	.Inclined chisel
89	.Inclined rotary disk
90 R	MATCHING
90 A	..Matching cutters
91	.End
92	BORING
93 R	.Special work
93 A	...Lasts
	.Brush
96	..Tilting work holder
97	.Wheel hub
	..Axial
98	...Stationary bitstock
99	...Stationary work
100	....Inclined bitstock
103	.Swinging
	.Portable
104	..Hand
106	...Angularly adjustable
	.Long work
108	..Hand-operated step feed
	PLANERS
114 R	.Miscellaneous
114 A	...Sharpeners
115	.Scrapers
	.Beveling
124	..Lateral
	..Longitudinal
125	...Inclined work pocket
126	...Shifting cutter
127 R	...Shifting work support
127 A	.....Shingle planer
	.Rotary cutter
	..Cylinder
116	...Double surfacers
117 R	...Cylinder
117 A	....Inclined
117 B	....Edge trimmer
117 C	....Traveling
131	...Bearings
118	..Disk
119 R	...Traveling
119 A	.....Bowling alleys
120	.Stationary cutter
132	..Bit adjustments
121	.Reciprocating cutter
122	..Lateral
123	.Endless cutter carrier
128	.Endless bed
129	.Bed adjustments
130	.Cutter adjustments
133 R	GAINING
133 A	..Tie gaining, ties (skepers) pass through machine
133 B	..Traveling on railway track
	SHAPING
134 R	.Miscellaneous
134 A	...Vertical spindle
134 B	...Overhanging
134 C	...Overhanging, horizontal swinging cutter
134 D	...Hand tools
134 E	...Sabot and shoe making
134 F	...Heel forming
135	.Box trimming
136 R	.Grooving
136 A	...Core boy
136 B	...Stringer
136 C	...Hand tool
136 D	...Hand holds
136 E	...Battery spacers
136 F	...Umbrella sticks

	SHAPING
	.Grooving
136 G	...Corner grooves
136 H	...Log or poles
136 J	...Gunstock
	.Pattern
137	..Miscellaneous
138	..Polygonal forms, indexed work
139	..Rotating table, shifting cutter
140	..Gear-guided cutter
141	..Crank-guided cutter
	..Cam
142	...Cutter guiding
143	...Work guiding
	..Templet
144 R	...Cutter guiding
144 A	.....Tool support swingable in horizontal
144 B	.....Propellers
144 C	.....Violins
144 D	.....Oars
144.5 R	.....Templets
144.5 GT	......Guide track
145 R	...Work guiding
145 A	.....Vertical spindle cutter
145 B	.....Shaping lasts
145 C	.....Vertical spindle, anti-friction collar
146	.Oscillating knife
147	.Reciprocating knife
148	.Reversible cutter
149	.Pattern knife, swinging frame
150	.Rotary cutter, end thrust
151	.Universally jointed cutter shaft
152	..Curved-work guide
153	.Curved-bar work support
154	.Rotary work carrier
	SHAVING
155	.Fixed knife
156	..Circular knife block
157	..Drum feed
158	..Roller feed
159	.Knife pair
160	..Gripper
161	..Roller feed
162 R	SLICERS
162 A	..Bottom cutting
162 B	..Tapered products
163	.Reslicers
	.Strip cutting
164	..Converging knives
165	...Lathe feed
166	..Lathe feed
167	.Arc cut
	.Beveling
168	..Alternate end feed
169	..Shifting, knife guide
170	..Tilting gauge
171	..Tilting table
172	.Cylinder
173	..Grooving
174	..Radial knife
175	.Fixed knife
176	.Rotary disk
	.Stay log
177	..Oscillating
178	..Reciprocating
179	..Screw feed
180	.Hopper feed
181	.Roller feed
182	RIVING
183	.Beveling
184	.Fixed knife
185	SLIVERING
186	.Scoring plane
187	..Endless belt
188	..Rotary
189	.Gang saw
190	.Plunger and fixed knife
191	.Receiving and handling devices
192	SPLITTING AND BUNDLING
193 R	SPLITTING
193 A	..Fluid pressure wedge or anvil
193 B	..Drop type
193 C	..Hand tools
193 D	..Wedges to be driven
193 E	..Wedges, stationary
193 F	..Anvils, chopping or splitting blocks
193 G	..Splitting guns
193 H	..Hand operated fixed splitting machines
193 J	..Products are tapered or wedges shaped
193 K	..With adjustable work support
194	.Self-feeding
195	..Roller and belt
196	PUNCHING CUTTERS
197	.Fixed die
198 R	TENONING
198 A	..Attachments to table saws
199	.Blind slat
200	..Rotary cutters
201	..Rotary gaining cutters
202	.Chisel pair
203	.Rotary gaining cutters
204	..Multiple tenon
205	TENON TURNING
206	.Wheel spoke
209 R	VENEER LATHES
209 A	..Log loading and/or centering
209 B	..Eccentric curved cuts
209 C	..Diagonal cuts and curved cutting edge
210	.Convertible
211	.Inclined knives
212	.Knives and knife blocks
213	.Presser bars and rolls
214	.Stay logs
215	.Strip-cutting attachments
216	MITER CUTTERS
217	.Angle knife
	CUTTERS
	.Rotary
218	..Miscellaneous
219	..End thrust
220	..Frusto-conical
	..Cylindrical
221	...Spiral bit
230	...Slotted bit seat
	..Saw
	...Double
222	....Intermediate cutter
238	...Wabble
239	...Distorted
	...Single
223	....Side cutter
	..Polygonal
224	...T-slot bit clamp
225	...Plane bit seat
226	...Convex bit seat
227	...Concave bit seat
	..Radial arms
228	...Plane bit seat
229	...Slotted bit seat
	..Disk
	...Multiple clamping disks
231	....Tangential bit
232	....Pivoted bit
233	....Shank bit
234	....Eccentric segmental bit
	...Side attached bit
235	....Edge cutting
	...Multiple
236	....Pattern
237	...Gang
240	..Solid
241	...Bits
251 R	CUTTER GUARDS
251 A	..Vertical spindle

	CUTTER GUARDS
251 B	..Laterally urged
252 R	CUTTER HOODS AND DUST CONVEYERS
252 A	..With sifter, sorter, or separator
242 R	FEED OR PRESSER MECHANISM
242 A	..Non-feeding presser means
242 B	...Feet
242 C	...Rolls
242 D	...Chains
242 E	...Lateral
242 F	...Reverse feed starters
242 G	...Turnovers
242 H	...Lifters
242 J	...Four motion feet
242 K	...Fluid pressure drive
242 L	...Reverse feed
242 M	...L-feeds
243	.Presser bars and chip breakers
244	..Sectional
245 R	.Blank feeders
245 A	...Endless
245 B	....With clamp
245 C	...Stackers
245 D	...Intermittent feed chain drive
245 E	...Pusher with retractable dog
245 F	...Feed from top of stack
	.Rolls
	..Feed
246 R	...Miscellaneous
246 A	.....Resilient feed rolls
246 B	.....Oblique means urge work laterally
246 C	.....Special shaped rolls
246 D	.....Rolls feed in direction of cut
246 E	.....On overhanging arm
246 F	.....Work centering and feeding
246 G	.....Feelers and pre-sensing devices
247	...Spring pressed
248	...Weighted
249 R	..Presser
249 A	....Fluid pressure raised and/or lowered
249 B	....Laterally acting
250 R	..Sectional
250 A	....Multiple parts rigid assembly
253 R	WORK GUIDES
253 A	..Knife edge
253 B	..Side or edge eveners
253 C	..Centering
253 D	..Roll or collar coaxial with cutter
253 E	..Work held by corner and/or diagonal work
253 F	..Work urged lateral
253 G	..Adjustable inclined work-engaging face
253 H	..Simultaneous adjustments along length
253 J	..Vertical spindle
	WOOD BENDING
254	.Bending and drying
255	.Bending rollers
256.1	.Wood bending press
256.2	..End compressor
256.3	..Having opposed contoured rigid platens
256.4	...Three contoured rigid platens
258	.Hoop gauging
	.Former
259	..Fixed
260	...Collapsible
261	...End thrust
262	...Radial arm and roller
263	...Strap and windlass
264	...Strap and lever
265	...Strap and screw
266	...Strap
267	..Pivotal
268	...Coiling
269	.Clamps
270	.Bends
271	.Steaming
278 R	MACHINE WORK CLAMPS
278 A	..Vacuum operated
278 B	..Lasts, heels
284	CORK AND BUNG PRESSES
285	WORKBENCHES AND TOOL CHESTS COMBINED
286 R	WORKBENCHES
286 A	..Special shapes and structures
287	.Adjustable stock rest
288.5	LATH HOLDERS
306	BENCH DOGS
307	.Clamping
308	.Removable

CLASS 147 COOPERING

1	BARREL-MAKING MACHINES
6	HEADING MACHINES
2	SETTING-UP MACHINES
3	SETTING-UP FORMERS
4	BARREL-COMPRESSING MACHINES
5	.Cone
49	TRUSS HOOPS
	HOOP DRIVERS
7	.Miscellaneous
8	.Cam-operated
9	.Hydraulic and steam
10	.Lever-operated
11	.Screw-operated
12	.Weight
	CROZING AND CHAMFERING BARRELS
	.Clamped barrel
13	..Rotary cutter head
	.Rotating barrel
14	..Expansible cutter head
15	..Rotary cutter head
16	..Sliding tool
17	..Swinging tool
24	.Hand crozes
	CROZING STAVES
18	.Miscellaneous
	.Rotary cutter
19	..Endless stave carriage
20	..Sliding stave carriage
21	..Swinging stave carriage
22	..Swinging
23	.Sliding knife
	JOINTING STAVES
25	.Miscellaneous
	.Inclined molding heads
26	..Vertically movable bed
	.Rotary cutter
27	..Pattern feed
28	.Converging saws
29	.Disk cutter head
	.Single saw
30	..Sliding carriage
31	..Tilting carriage
32	.Slicing knife
33	.Sliding plane
	.Traveling saw
34	..Curved guide
35	.Longitudinal cutter cylinder
35.5	SHAPING STAVES
	BARREL HEAD-MAKING
36	.Miscellaneous
	.Fixed chuck
37	..Rotary scribing tool
38	.Rotary saw
	.Rotary chuck
39	..Chisel cutter
40	..Double molding cutter
41	.Hand scribers
42	CHAMFERING TOOLS
	HOOP MACHINES
43	.Miscellaneous
44	.Racking
45	.Lapping and pointing
46	.Lock-cutting
48	BASKET-FORMING

1	MISCELLANEOUS
100	MAGNETIC MATERIALS
101	.Permanent magnet
102	..Age hardening
103	..Treatment in a magnetic field
104	.Dust cores
105	.Particulate material
108	.Treatment in a magnetic field
110	.Silicon steel
111	..Working
112	..Heat treatment
113	...With special compositions
120	.Working
121	.Heat treatment
122	..With special compositions
2	CASTING, WORKING AND HEAT TREATMENT
3	CASTING AND HEAT TREATMENT
4	SOLID METAL
240	.Processes of coating utilizing a reactive composition which reacts with metal substrate or composition therefore
241	..Testing or electrical or wave energy utilized
242	..Molten bath or molten surface utilized during reaction
243	..Liquid reactive coating composition utilized
244	...Dye or organic pigment containing
245	...Electrically insulating coating formed which is more than mere oxide formation
246	...Contains lubricant or oil or overcoat thereof
247	...Contains an atom of hafnium, titanium or zirconium (excludes activating composition)
248	...Contains nonreactive organic liquid at ambient temperature (e.g., solvent, etc.)
249	....Nonreactive halogenated hydrocarbon
250	...Contains organic phosphorus or organic chromium compound
251	...Contains solid synthetic polymer
252	...Contains dicarboxylic acid or salt thereof which reacts with metal substrate
253	...Contains phosphorus
254	....Liquid composition applied prior to reaction of metal substrate with phosphorus (e.g., cleaning, activating, etc.)
255	....With additional coating composition containing an atom of chromium, phosphorus or sulfur
256	....Specified liquid or gaseous coating composition applied after reaction with phosphorus
257	.....Specified coating composition contains organic material
258	....Contains an atom of chromium
259	....Contains organic additive other than for pH control
260	.....Nitrogen-containing organic compound
261	....Contains an atom of arsenic, boron or metal atom other than alkali metal
262	.....Contains an atom of iron or manganese or a group II metal atom (Be, Ca, Sr, Ba, Zn, Cd, Hg)
263	......Contains an atom of calcium
264	...Contains an atom of chromium
265	....Post chromium treatment with specified material (other than mere air drying)
266	....Contains an atom of sulfur, selenium or tellurium
267	....Contains trivalent chromium ion or reducing agent or an organic additive
268	....Contains an atom or boron, silicon or metal atom other than alkali metal
269	...Metal substrate contains elemental Ti, Zr, Hf, Cu, Ta, or Th or alloy thereof
270	...Contains an atom of sulfur, selenium or tellurium
271	....Contains organic sulfur compound
272	...Coating or treating a metal oxide with a specified composition
273	...Contains an atom of arsenic or metal atom other than alkali metal
274	...Contains organic material
275	...Metal substrate contains elemental aluminum or magnesium or alloy thereof
276	..Coating during or after metal oxide formation
277	..Metal oxide formed after applied coating
278	..Carbide formation, decarburization or carbonizing
279	..Contains an atom of boron or silicon that reacts with metal substrate
280	..Reactive material applied nonuniformly or reacted selectively
281	..Metal substrate contains elemental Ti, Zr, Nb, Ag, Ta, or W or alloy thereof
282	..Metal substrate contains elemental copper or alloy thereof
283	..Contains an atom of halogen, organic material or gaseous sulfur
284	..Coating composition applied forms oxide coating
285	...Oxide of aluminum, beryllium or magnesium formed
286	...Oxide of cobalt, chromium or nickel formed
287	...Oxide of iron formed
9 R	.Cutting by heat
9 C	...With adjuvant powder
9.5	..Desurfacing or gouging
9.6	..Nicking or transverse cutting of rods or tubes
11.5 R	.Working and heat treatment
11.5 F	...Refractory metal
11.5 A	...Aluminum
11.5 C	...Copper
11.5 M	...Magnesium
11.5 N	...Nickel or cobalt
11.5 P	...Powder
11.5 Q	...Composites
12 R	..Iron and its alloys
12 A	....For magnetic/electric use
12 B	....Bar, cable, rod or wire
12 E	....Stainless steel
12 EA	.....Ferritic
12 C	....For deep-drawing/enameling use
12 D	....For tin-plating, galvanizing or black plate
12 F	....Low alloy (0.4% C, 10% total non-Fe) high-strength/toughness, e.g., good Charpy impace
12.1	...With special compositions
12.3	...With aging
12.4	...With quench hardening
12.7 R	..Including age hardening
12.7 A	....Aluminum
12.7 B	....Refractory
12.7 C	....Copper
12.7 N	....Nickel or cobalt
12.9	.High frequency vibration
13	.Heat treatment

	SOLID METAL
	.Heat treatment
13.1	..With special compositions
13.2	...Copper and its alloys
14	...Iron and its alloys
15	....Fused
15.5	.....Case hardening
16	....Gaseous
16.5	.....Case hardening with a gas containing carbon
16.6	.....Case hardening with a gas containing nitrogen
16.7	.....Neutral atmosphere
18	....Liquid
19	....Carbonaceous
20	...Fused
20.3	...Gaseous
20.6	...Liquid
125	..Chilling to subambient temperature
126.1	..Particulate
127	..Composite
128	..With measuring, testing or sensing
129	...Magnetic or electrical property
130	..Shape or size alteration
131	..With pressure or restraining force
132	..Actinide or trans-actinide metal or alloy
133	..Group IVA, VA or VIA metal or metal alloys
134	..Iron or its alloys
135	...Stainless steel
136	....Austenitic
137	...Austenitic manganese (Hadfield) steel
138	...Cast iron
139	....Spherulitic
140	....Pre-malleablizing treatment
141	....Hardening treatment
142	...Aging
143	...Quench hardening
144	....With preliminary heating
145	....Localized or zone treatment
146	.....Work or nonuniform dimension
147	......Serrated work surface, e.g., saw blade, gear teeth, threads, etc.
148	.....Heterogeneous treatment
149	.....With heat barrier
150	.....Electric heating with work as current conductor
151	.....With flame heating
152	.....Surface treatment only
153	....Work handling
154	...Electric heating with work as current conductor
155	...Work handling
156	....Running length work
157	...Special application of treating medium
158	..Age hardening
159	...Aluminum alloys
160	...Copper alloys
161	...Magnesium alloys
162	...Nickel alloys
22	.Compositions
23	..Fluxing
24	...Metallic
25	...Oleaginous
26	...Inorganic
27	..Heat treating
28	...Liquid
29	....Oleaginous
30	...Carbonaceous
33	BARRIER LAYER STOCK MATERIAL, P-N TYPE
33.1	.With contiguous layer doped to degeneracy
33.2	.With recess, void, dislocation, grain boundaries or channel openings
33.3	.With non-semiconductive coating thereon
33.4	.With contiguous layers of different semiconductive material
33.5	.Having at least three contiguous layers of semiconductive material
33.6	..Including an alloy layer having named impurities
400	STOCK
401	.Radioactive
300	.Magnetic
301	..Rare earth and transition metal containing
302	...Boron containing
303	...Copper containing
304	..Amorphous
305	...With inclusion
306	..Iron base (i.e., ferrous)
307	...Silicon containing
308	....Specific crystallographic orientation
309	....Containing over 1 percent aluminium
310	...Nickel containing
311	...Cobalt containing
312	..Nickel base
313	..Cobalt base
314	..Manganese base
315	..No single metal over 50 percent
316	.Carburized or nitrided
317	..Nitrided
318	...Ferrous (i.e., iron base)
319	..Ferrous (i.e., iron base)
402	.Mechanical memory
403	.Amorphous, i.e., glassy
404	.Directionally solidified
320	.Ferrous (i.e., iron base)
321	..1.7 percent or more carbon containing (e.g., cast iron)
322	...Malleabilized
323	...Chill cast
324	...Six percent or more group IV, V or VI transition metal containing
325	..Nine percent or more chromium containing
326	...Age or precipitation hardened or strengthened
327	...Eight percent or more total content of nickel and/or manganese containing
328	..Age or precipitation hardened or strengthed
329	..Eight percent or more manganese containing
330	..Beryllium or boron containing
331	..Rare earth meal containing
332	..Copper containing
333	..Chromium containing, but less than 9 percent
334	...Molybdenum containing
335	....Nickel containing
336	..Nickel containing
337	..Three percent or more manganese containing or containing other transition metal in any amount
405	.Age or precipitation hardened or strengthened
406	..Magnesium base
407	..Refractory metal base
408	..Cobalt base
409	..Nickel base
410	...Chromium containing
411	..Copper base
412	...Tin containing
413	...Zinc containing
414	...Nickel containing
415	..Aluminum base
416	...Copper containing
417	....Magnesium containing
418	.....Vanadium, niobium or tantalum containing

	STOCK
	.Age or precipitation hardened or strengthened
419	..Containing over 50 per cent metal, but no base metal
420	.Magnesium base
421	.Titanium, zirconium, or hafnium base
422	.Vanadium, niobum, or tantalum base
423	.Chromium, molybdenum, or tungsten base
424	.Manganese base
425	.Cobalt base
426	.Nickel base
427	..Chromium containing
428	...Aluminum containing
429	..Aluminum containing
430	.Noble metal base
431	..Silver base containing in situ formed oxides
432	.Copper base
433	..Tin containing
434	..Zinc containing
435	..Nickel containing
436	..Aluminum containing
437	.Aluminum base
438	..Copper containing
439	...Magnesium containing
440	..Magnesium containing
441	.Zinc base
442	.Containing over 50 per cent metal, but no base metal
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	CROSS-REFERENCE ART COLLECTIONS PERTAINING TO SUBCLASSES 400+ STOCK
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900	ION IMPLANTED
901	SURFACE DEPLETED IN AN ALLOY COMPONENT (E.G., DECARBURIZED)
902	HAVING PORTIONS OF DIFFERING METALLURGICAL PROPERTIES OR CHARACTERISTICS
903	.Directly treated with high energy electromagnetic waves or particles (e.g., laser, electron beam)
904	.Crankshaft
905	.Cutting tool
906	.Roller bearing element
907	.Threaded or headed fastener
908	.Spring
909	.Tube
910	.In pattern discontinuous in two dimensions (e.g., checkerboard pattern)
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	DIGESTS
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DIG 1	AMORPHOUS SEMICONDUCTOR
DIG 2	AMPHOTERIC DOPING
DIG 3	ANNEAL
DIG 4	ANNEALING, INCOHERENT LIGHT
DIG 5	ANTIMONIDES OF GALLIUM OR INDIUM
DIG 6	APPARATUS
DIG 7	AUTODOPING
DIG 8	BI-LEVEL FABRICATION
DIG 9	BI-MOS
DIG 10	BIPOLAR TRANSISTORS-ION IMPLANTATION
DIG 11	BIPOLAR TRANSISTORS
DIG 12	BONDING E.G., ELECTROSTATIC FOR STRAIN GAUGES
DIG 13	BREAKDOWN VOLTAGE
DIG 14	CAPACITOR
DIG 15	CAPPING LAYER
DIG 16	CATALYST
DIG 17	CLEAN SURFACES
DIG 18	COMPENSATION DOPING
DIG 19	CONTACTS OF SILICIDES
DIG 20	CONTACTS, SPECIAL
DIG 21	CONTINUOUS PROCESS
DIG 22	CONTROLLED ATMOSPHERE
DIG 23	DEEP LEVEL DOPANTS
DIG 24	DEFECT CONTROL-GETTERING AND ANNEALING
DIG 25	DEPOSITION MULTI-STEP
DIG 26	DEPOSITION THRU HOLE IN MASK
DIG 27	DICHLOROSILANE
DIG 28	DICING
DIG 29	DIFFERENTIAL CRYSTAL GROWTH RATES
DIG 30	DIFFUSION
DIG 31	DIFFUSION AT AN EDGE
DIG 32	DIFFUSION LENGTH
DIG 33	DIFFUSION OF ALUMINUM
DIG 34	DIFFUSION OF BORON OR SILICON
DIG 35	DIFFUSION THRU A LAYER
DIG 36	DIFFUSION, NONSELECTIVE
DIG 37	DIFFUSION-DEPOSITION
DIG 38	DIFFUSIONS-STAGED
DIG 39	DISPLACE P-N JUNCTION
DIG 40	DOPANTS, SPECIAL
DIG 41	DOPING CONTROL IN CRYSTAL GROWTH
DIG 42	DOPING, GRADED, FOR TAPERED ETCHING
DIG 43	DUAL DIELECTRIC
DIG 44	EDGE DIFFUSION UNDER MASK
DIG 45	ELECTRIC FIELD
DIG 46	ELECTRON BEAM TREATMENT OF DEVICES
DIG 47	EMITTER DIP
DIG 48	ENERGY BEAM ASSISTED EPI GROWTH
DIG 49	EQUIVALENCE AND OPTIONS
DIG 50	ETCH AND REFILL
DIG 51	ETCHING
DIG 52	FACE TO FACE DEPOSITION
DIG 53	FIELD EFFECT TRANSISTORS FETS
DIG 54	FLAT SHEETS-SUBSTRATES
DIG 55	FUSE
DIG 56	GALLIUM ARSENIDE
DIG 57	GAS FLOW CONTROL
DIG 58	GE GERMANIUM
DIG 59	GERMANIUM ON SILICON OR GE-SI ON III-V
DIG 60	GETTERING
DIG 61	GETTERING-ARMORPHOUS LAYERS
DIG 62	GOLD DIFFUSION
DIG 63	GP II-IV-VI COMPOUNDS
DIG 64	GP II-VI COMPOUNDS
DIG 65	GP III-V (GENERIC) COMPOUNDS-PROCESSING
DIG 66	GP III-V LIQUID PHASE EPITAXY
DIG 67	GRADED ENERGY GAP
DIG 68	GRAPHITE MASKING
DIG 69	GREEN SHEETS
DIG 70	GUARD RINGS AND CMOS
DIG 71	HEATING, SELECTIVE
DIG 72	HETEROJUNCTIONS
DIG 73	HOLLOW BODY
DIG 74	HORIZONTAL MELT SOLIDIFICATION
DIG 75	IMIDE RESISTS
DIG 76	IMPLANT
DIG 77	IMPLANTATION OF SILICON ON SAPPHIRE
DIG 78	IMPURITY REDISTRIBUTION BY OXIDATION
DIG 79	INERT CARRIER GAS
DIG 80	INFRA-RED
DIG 81	INSULATORS
DIG 82	ION IMPLANTATION FETS/COMS
DIG 83	ION IMPLANTATION, GENERAL
DIG 84	ION IMPLANTATION OF COMPOUND DEVICES
DIG 85	ISOLATED-INTEGRATED
DIG 86	ISOLATED ZONES
DIG 87	I2L INTEGRATED INJECTION LOGIC
DIG 88	J-FET (JUNCTION FIELD EFFECT TRANSISTOR)
DIG 89	JOSEPHSON DEVICES
DIG 90	LASER ANNEAL
DIG 91	LASER BEAM PROCESSING OF FETS
DIG 92	LASER BEAM PROCESSING-DIODES OR TRANSISTOR
DIG 93	LASER BEAM TREATMENT IN GENERAL
DIG 94	LASER BEAM TREATMENT OF COMPOUND DEVICES
DIG 95	LASER DEVICES
DIG 96	*LATERAL TRANSISTOR*
DIG 97	LATTICE STRAIN AND DEFECTS
DIG 98	LAYER CONVERSION
DIG 99	LED, MULTICOLOR

DIG 100 LIFT-OFF MASKING
DIG 101 LIQUID PHASE EPITAXY LPE
DIG 102 MASK ALIGNMENT
DIG 103 MASK, DUAL FUNCTION E.G., DIFFUSION AND OXIDATION
DIG 104 MASK, MOVABLE
DIG 105 MASKS, METAL
DIG 106 MASKS, SPECIAL
DIG 107 MELT
DIG 108 MELT BACK
DIG 109 MEMORY DEVICES
DIG 110 METAL-ORGANIC CVD (RUEHRWEIN TYPE)
DIG 111 NARROW MASKING
DIG 112 NITRIDATION, DIRECT, OF SILICON
DIG 113 NITRIDES OF BORON OR ALUMINUM OR GALLIUM
DIG 114 NITRIDES OF SILICON
DIG 115 ORIENTATION
DIG 116 OXIDATION, DIFFERENTIAL
DIG 117 OXIDATION, SELECTIVE
DIG 118 OXIDE FILMS
DIG 119 PHOSPHIDES OF GALLIUM OR INDIUM
DIG 120 PHOTOCATHODES-CS COATED AND SOLAR CELL
DIG 121 PLASTIC TEMPERATURE
DIG 122 POLYCRYSTALLINE
DIG 123 POLYCRYSTALLINE DIFFUSE ANNEAL
DIG 124 POLYCRYSTALLINE EMITTER
DIG 125 POLYCRYSTALLINE PASSIVATION
DIG 126 POWER FETS
DIG 127 PROCESS INDUCED DEFECTS
DIG 128 PROTON BOMBARDMENT OF SILICON
DIG 129 PULSE DOPING
DIG 130 PURIFICATION
DIG 131 REACTIVE ION ETCHING RIE
DIG 132 RECOIL IMPLANTATION
DIG 133 REFLOW OXIDES AND GLASSES
DIG 134 REMELT
DIG 135 REMOVAL OF SUBSTRATE
DIG 136 RESISTORS
DIG 137 RESISTS
DIG 138 ROUGHENED SURFACE
DIG 139 SCHOTTKY BARRIER
DIG 140 SCHOTTKY BARRIER CONTACTS
DIG 141 SELF-ALIGNMENT COAT GATE
DIG 142 SEMICONDUCTOR-METAL-SEMICONDUC TOR
DIG 143 SHADOW MASKING
DIG 144 SHALLOW DIFFUSION
DIG 145 SHAPED JUNCTIONS
DIG 146 SHEET RESISTANCE (DOPANT PARAMETERS)
DIG 147 SILICIDES
DIG 148 SILICON CARBIDE
DIG 149 SILICON ON III-V
DIG 150 SILICON ON SAPPHIRE SOS
DIG 151 SIMULTANEOUS DIFFUSION
DIG 152 SINGLE CRYSTAL ON AMORPHOUS SUBSTRATE
DIG 153 SOLAR CELLS-IMPLANTATIONS-LASER BEAM
DIG 154 SOLID PHASE EPITAXY
DIG 155 SOLID SOLUBILITY
DIG 156 SONOS
DIG 157 SPECIAL DIFFUSION AND PROFILES
DIG 158 SPUTTERING
DIG 159 STRAIN GAUGES
DIG 160 SUPERLATTICE
DIG 161 TAPERED EDGES
DIG 162 TESTING STEPS
DIG 163 THICK-THIN OXIDES
DIG 164 THREE DIMENSIONAL PROCESSING
DIG 165 TRANSMUTATION DOPING
DIG 166 TRAVELING SOLVENT METHOD
DIG 167 TWO DIFFUSIONS IN ONE HOLE
DIG 168 V-GROOVES
DIG 169 VACUUM DEPOSITION (INCLUDES MOLECULAR BEAM EPITAXY
DIG 170 VAPOR-LIQUID-SOLID
DIG 171 VARISTOR
DIG 172 VIDICONS
DIG 173 WASHED EMITTER
DIG 174 ZENER DIODES

CLASS 149 EXPLOSIVE AND THERMIC COMPOSITIONS OR CHARGES

DECEMBER 1990

1	CONTAINING LIQUEFIED GASEOUS FUEL OR LIQUEFIED OXYGEN SUPPLYING MATERIAL
2	STRUCTURE OR ARRANGEMENT OF COMPONENT OR PRODUCT
3	.Coated component
4	..Component base contains both organic and inorganic explosive or thermic constituents
5	..Component base contains an inorganic explosive or inorganic thermic constituent
6	...Coating contains organic compound
7	....Component base contains an inorganic explosive or inorganic thermic salt
8	.....Coating contains organic explosive or thermic component
9	..Component base contains organic explosive or organic thermic constituent
10	...Component base contains nitrocellulose and nitroglycerine
11	...Coating contains organic compound
12	....Coating contains organic explosive or organic thermic component
13	.....Coating contains nitrated toluene
14	.Contiguous layers or zones
15	..Layer or zone contains an inorganic explosive or inorganic thermic component
16	...Layer or zone contains at least one inorganic component from the group of azide, fulminate, phosphorus and phosphide
17	.Solid particles dispersed in solid solution or matrix
18	..Continuous phase contains organic material
19.1	...Organic material contains polysaccharide resin or synthetic resin
19.2	....Including organometallic or organo (silicon/boron) compound
19.3	....Resin contains fluorine, bromine or iodine
19.4	....Polyurethane
19.5	....Polyester
19.6	....Resin contains oxirane groups or interunit ether linkages
19.7	.....Polysaccharide or derivative thereof
19.8	......Nitrocellulose
19.9	....Polymerized conjugated diene
19.91	....Polymerized ethylenically unsaturated compound
19.92	....Process
19.93	.....Prior treatment of dispersed phase
20	...Dispersed solid contains inorganic explosive or inorganic thermic component
21	.Particles of diverse size or shape
22	CONTAINING FREE BORON OR BINARY COMPOUNDS OF BORON (EXCEPT WITH OXYGEN) OR BORANES
23	CONTAINING NITRATED METALLO-ORGANIC COMPOUND
24	.Nitrated organic compound of lead
25	..With additional nitrated metallo-organic compound
26	..With metal azide or metal fulminate compound
27	..With organic explosive or organic thermic component
28	...With inorganic explosive or inorganic thermic component
29	CONTAINING FREE PHOSPHORUS OR BINARY COMPOUND OF PHOSPHORUS (EXCEPT WITH OXYGEN)
30	.With free metal, or alloy or metalloid
31	.With inorganic oxygen-halogen salt
32	..Binary compound of phosphorus (except with oxygen)
33	CONTAINING INORGANIC METAL FULMINATE
34	.With nitrated organic compound or inorganic oxygen-halogen salt
35	CONTAINING INORGANIC METAL AZIDE
36	CONTAINING HYDRAZINE OR HYDRAZINE DERIVATIVE
37	METAL OR ALLOY OR METALLOID, EACH IN PARTICULATE FORM, WITH AT LEAST ONE METAL OXIDE, INORGANIC OXYGEN CONTAINING SALT OR ORGANIC METAL-OXYGEN SALT
38	.With nitrated organic compound
39	..Nitrated aromatic compound
40	.Plural oxygen yielding compounds
41	..Inorganic nitrogen-oxygen salt
42	.Inorganic oxygen-halogen salt
43	.Inorganic nitrogen-oxygen salt
44	.With an organic nonexplosive or organic nonthermic component
45	CONTAINING INORGANIC NITROGEN-OXYGEN SALT
46	.Ammonium nitrate
47	..With nitrated organic compound
48	...Nitrocellulose, under 10 percent
49	...Nitrocellulose, 10 percent or over
50	....With other nitrated organic compound
51	...Nitroglycerine
52	....With other explosive or thermic compound
53	.....Nitrated organic compound
54	....With vegetable matter component
55	...Nitrated aromatic compound
56	....With other explosive or thermic component
57	....With an organic nonexplosive or organic nonthermic component
58	...Nitrated starch or nitrated sugar
59	....With other explosive or thermic component
60	..With vegetable matter or resin or rubber
61	.Alkali metal or alkaline earth metal nitrate salt
62	..With nitrated organic compound
63	...Nitrocellulose
64	....With other explosive or thermic component
65	.....Nitroglycerine
66	...Nitroglycerine
67	...Nitrated aromatic compound
68	....Nitrated phenol
69	....Nitrated toluene
70	..With metal oxygen-halogen salt
71	...With carbon or sulfur
72	..With carbon and sulfur
73	...With an organic nonexplosive or organic nonthermic component
74	CONTAINING NITROGEN OXIDE OR ACID THEREOF
75	CONTAINING INORGANIC OXYGEN-HALOGEN SALT
76	.Ammonium perchlorate
77	.Alkali metal oxygen-halogen salt
78	..With nitrated organic compound
79	...Nitrocellulose
80	...Nitrated toluene or nitrated phenol
81	..With iodine or iodide
82	..With carbon or sulfur
83	..With an organic nonexplosive or organic nonthermic component
84	...Organic dye or coloring agent
85	...With an inorganic nonexplosive or inorganic nonthermic component
86	....Cyanide compound or oxide of iron, chromium or manganese

87 CONTAINING FREE METAL OR METAL HYDRIDE WITH HYDROCARBON OR HALOGENATED HYDROCARBON
88 CONTAINING NITRATED ORGANIC COMPOUND
89 .Nitroparaffin
90 ..Plural nitroparaffins
91 ..With additional nitrated organic compound
92 .Nitrated acyclic, alicyclic or heterocyclic amine
93 .Nitrated pentaerythritol
94 .Nitrocellulose, under 10 percent
95 ..With nitroglycerine
96 .Nitrocellulose, 10 percent or over
97 ..With nitroglycerine
98 ...With organic nonexplosive or organic nonthermic component
99 ..With nitrated aromatic compound
100 ..With nonexplosive or nonthermic component
101 .Nitroglycerine
102 ..With additional nitrated organic compound
103 ...Nitrated aromatic compound
104 ...Nitrated glycol compound
105 .Nitrated aromatic compound
106 ..Plural nitrated aromatic compounds
107 ...One a nitrotoluene
108 .Nitrated starch or nitrated sugar
108.2 CONTAINING FREE METAL OR FREE CARBON
108.4 FUME OR WASTE AFFECTING
108.6 IGNITING COMPOSITIONS
108.8 STABILITY OR VISCOSITY AFFECTING
109.2 CONTAINING PARTICULAR FUEL AND PARTICULAR OXIDIZER
109.4 MISCELLANEOUS COMPOSITIONS
109.6 PROCESSES OF MAKING

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CROSS-REFERENCE ART COLLECTIONS
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110 PARTICLE SIZE OF A COMPONENT
111 .Nitrated organic compound
112 .Inorganic nitrogen-oxygen salt
113 .Inorganic oxygen-halogen salt
114 .Inorganic fuel
115 .Organic fuel
116 FLARE CONTAINS RESIN
117 SMOKE OR WEATHER COMPOSITION CONTAINS RESIN
118 GEL CONTAINS RESIN
119 OXIDIZER COMPOUNDS
120 HIGH ENERGY FUEL COMPOUNDS
121 .Containing B, P or S
122 .Containing N, without B, P or S
123 TAGGED COMPOSITIONS FOR IDENTIFYING PURPOSES
124 METHODS FOR RECLAIMING OR DISPOSING OF ONE OR MORE MATERIALS IN A COMPOSITION

CLASS 150 PURSES, WALLETS, AND PROTECTIVE COVERS

DECEMBER 1990

100	PURSE OR HANDBAG TYPE
101	.With means to deter theft of contents (e.g., puzzling closure or secret compartment)
102	.Theft or loss resistant
103	.Changeable decorative appearance (e.g., color, etc.)
104	..Removable element
105	...Cover
106	.Combined
107	.With handle or carrying strap
108	..Adjustable
109	..Handle includes secondary receptacle
110	..Single
111	.Plural
112	.Compartmented
113	..Removable (detachable) compartment or compartment-forming member
114	..Secondary compartment integral with purse-overlapping closure flap
115	..Compartment mouth-frames hinged along common axis
116	..Including means permitting limited movement of an interior compartment between storage and loading positions
117	..Independently closable compartments
118	.With closure
119	..Lid type
120	..Hinged mouth-frame elements
121	...Four or more hinged elements
122	....Six or more hinged elements
123	...Including means for releasably securing closed frame elements together
124	...Including separate element for securing purse or handbag material to frame
125	....Insert for channeled frame element
126	...Channeled frame element
127	.Wall detail
128	..Specified seam structure
129	..Multilayer or ply
130	..Reinforced
131	POCKET OR PURSE-CARRIED CONTAINER (E.G., WALLET, BILLFOLD, CARD OR COIN CONTAINER, ETC.)
132	.Paper money container (e.g., wallet, billfold)
133	..With means to deter theft of contents (e.g., secret compartment)
134	..Theft or loss resistant
135	..With means for holding a pad of checks
136	..Combined with coin receiver
137	..Including resilient or biased clip for retaining bills
138	..Including separable content-holding structure
139	..Including content-holding section movable relative to paper money compartment
140	..Including means for separating two or more paper money bills from one another
141	..Including means permitting removal of paper money while folded
142	..Including relatively slidable container wall sections to accommodate thicker contents or prevent buckling while folded
143	..With closure
144	..Including expandable pocket
145	..With transparent portion or window
146	..Joint or seam structure
147	.Card container (e.g., for credit or fare card, identification or driver's license, etc.)
148	..Removable compartment
149	..With closure
150	.Coin container (i.e., for holding coins in bulk)
151	..Having means permitting insertion of coin into closed container
152	..Flap-type closure
153	...Flap forms support for display and selection of coins
154	PROTECTIVE COVER MADE OF FLACCID MATERIAL
155	.For a door knob or handle
156	.For a faucet
157	.For an engine or motor
158	.For furniture
159	.For a golf cart or bag
160	.For a golf club (e.g., head cover)
161	.For a hand tool
162	.For a musical instrument
163	.For a racquet
164	.For a sewing machine
165	.For an appliance (household or office)
166	.For a vehicle exterior
167	..Motorcycle or bicycle
168	..Window (only)
	******************************
	CROSS-REFERENCE ART COLLECTION
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900	MEANS BIASING MOUTH IN OPEN OR CLOSED CONFIGURATION
901	INSULATING FLACCID COVER

CLASS 152 RESILIENT TIRES AND WHEELS

DECEMBER 1990

1	SPRING WHEELS
2	.With lubrication
3	..Spring enclosure
4	..Cylinder and piston
5	.Deformable ground engaging part
6	..With plural spring types
7	..With rubber spring
8	..With pneumatic spring
9	...Annular
10	....With air tanks
11	..With leaf spring
12	...End secured
13	..With coil spring
14	...Radial
15	....Cylinder and piston supported
16	....Encircled rod supported
17	.Spring encircling rigid annulus
18	..With nonresilient overload stop
19	..Convertible to rigid wheel
20	..With flexible annular support
21	..Lateral thrust or tension
22	...Combined spring and friction
23	....Coil springs
24	.....Double thrust
25	...With coil springs
26	....Rod encircling
27	...With balls
28	..Combined spring and friction
29	..With plural spring types
30	...Rubber and pneumatic
31	...Rubber and leaf
32	...Rubber and coil
33	....Annular rubber
34	...Pneumatic and leaf
35	...Pneumatic and coil
36	....Annular pneumatic
37	...Leaf and coil
38	....Center secured leaf
39	....End secured leaf
40	..Rubber spring
41	...In shear
42	...Cylindrical
43	....Transverse
44	...Blocks or balls
45	....With drive
46	.....With separate annulus guide
47	...Annular
48	....Rigid annulus enclosing
49	....Plural
50	....With separate annulus guide
51	.....Combined drive
52	....With drive
53	..Pneumatic spring
54	...Link connected
55	...Cylinder and piston
56	...Annular
57	....Rigid annulus enclosing
58	....Plural
59	....With separate annulus guide
60	.....Combined drive
61	......Spring
62	......Links
63	......Radial
64	......Studs or lugs
65	......Through bolts
66	......Anti-creep
67	....With drive
68	.....Anti-creep
69	..Leaf spring
70	...With braces
71	...Link connected
72	...Variously arranged
73	...Cylindrical units
74	...Transverse
75	...Straight, radial or tangential
76	...Center secured
77	....With separate annulus guide
78	.....Combined drive
79	....Reversely curved
80	...End secured
81	....Single end
82	....With separate annulus guide
83	.....Combined drive
84	....Oppositely curved pairs
85	....Reversely curved springs
86	....Arcuate
87	..Coil spring
88	...Link connected
89	...Variously arranged
90	....Tangential and radial
91	...Diagonal
92	...Circumferential
93	...Tangential
94	...Transverse
95	....Center secured
96	....Concentric with wheel axis
97	...Radial
98	....Tandem, interposed bearing
99	....Telescoping cylinder supported
100	....Cylinder and piston supported
101	.....With separate drive
102	.....Double acting
103	....Encircled rod supported
104	.....With independent annulus guide and drive
105	....With separate annulus guide
106	.....Combined drive
107	......Spring
108	......Links
109	......Radial
110	......Studs or lugs
111	......Through bolts
112	....With separate drive
151	TIRES, RESILIENT
152	.Emergency
152.1	.With electrical conducting means
153	.With cooling devices
154	.With splash guards
154.1	.With balancing feature
154.2	.With wear indicating feature
155	.Cushion and pneumatic combined
156	..Metallic spring cushion
157	..Enclosed cushion
158	...Internal buffers
159	..Superimposed
160	...Plungers
161	...Edge-secured cushion
162	...Guide flanges
163	....Radial stops
164	.....Bolts or studs
165	..Integral
166	...With removable inner tube
	.Armored
167	..Anti-skid
168	...Radial filaments and laminations
169	...Secured into casing
170	...Detachable
171	...Linked mat
172	.....Tire secured
173	....With circumferential band
174	.....Bound to felly
175	.....Tire secured
176	......Inlaid tread
177	......With securing rings
178	....Sectional
179	.....Tire secured
180	.....Wholly metallic
181	......Bound to felly
182	......Tire secured
183	.......Corner-connected sections
184	.......With securing rings
185	..External
185.1	...Track for single wheel
186	...Bound to felly
187	...Tire secured
188	....Inlaid tread

TIRES, RESILIENT
.Armored
..External
...Tire secured
189 ....With securing rings
190 ...Sectional
191 ....Tire secured
192 ..Single tube tires internal
193 ...Metal
194 ....Plates
195 ..Inner tube construction
196 ..Casing construction
197 ...Embedded
198 ....Metal
199 .....Plates
200 .....Annular
201 .....Linked mat
202 .....Woven
203 ..Interliners
204 ...Cotton, fabric or rubber
205 ...Metal
206 ....Scale armor
207 ....Annular
208 .Anti-skid devices
209 R ..Treads
209 A ....Asymmetric tire tread
209 B ....Lugged tire
209 NT ....Narrow tread
209 WT ....Wide tread
209 D ....Tread design
210 ...With embedded anti-skid
211 ....Flush with tread
212 ....Radial filaments and laminations
213 R ..Applying and removing devices
213 A ....Annular securing means
214 ...Vehicle carried
215 ....Running board carried
216 ....Wheel carried
217 ..Tighteners
218 ...Radial
219 ...Circumferential
220 ..Plural tire
221 ..Flexible straps or cords
222 ...With metal anti-skid
223 ..Combined cross chains and plates or bars
224 ...Superimposed
225 R ..Plate or bar type
225 C ....Clamps
226 ...With traction lugs
227 ....Flanges
228 .....Integral
229 ....Calks
230 .....Integral
231 ..Cross chain type
232 ...Independent sections
233 ....Securing devices
234 .....Felly and spoke
235 ......Spoke clamped
236 .....Felly
237 ......Bound to felly
238 .....Spoke
239 ...Annular
240 ....With side anti-skid elements
241 ....Securing devices
242 .....Securing rings
243 ...Modified links
244 ....Solid
245 ....With protectors
246 .Cushion
247 ..Metallic springs
248 ...Tubular
249 ....Integral
250 ....Woven
251 ...Wheel encircling band
252 ....With supporting spring
253 .....Leaf
254 ......Circumferentially extending
255 ....Center secured
256 ....End secured
257 ....Single end
258 ......Transverse
259 ....Enclosed
260 ....Rim secured
261 .....Coil
262 ......Radial
263 ......Enclosed
264 ....Annular guide flange
265 ....Integral enclosure
266 ....Arcuate interior surface
267 ....Enclosed
268 .....Integral enclosure
269 ......Arcuate interior surface
270 ...Leaf
271 ....Circumferentially extending
272 .....Center secured
273 .....End secured
274 ......Single end
275 ....Transverse
276 .....Embedded
277 .....Enclosed
278 ......Rim secured
279 ....Retaining ring secured
280 .....Rim secured
281 ......Rim flange engagement
282 ......Radial securing means
283 ......Retaining ring secured
284 ...Coil
285 ....Circumferential
286 .....Embedded
287 .....Enclosed
288 ......Arcuate interior surface
289 ....Radial
290 .....Sectional tire units
291 ......With plungers
292 .....With plungers
293 .....Enclosed
294 ......Annular guide flange
295 ....Sectional tread
296 ......Integral enclosure
297 ....With nonmetallic band
298 ....Arcuate interior surface
299 ....With nonmetallic band
300 ..Sectional
301 ...Annular
302 ....Superimposed
303 ...Superimposed
304 ...With apertured external binders
305 ...Radial bolt secured
306 ...Abutting sections
307 ....With annular internal binders
308 ....Interfitting
309 ....Indented at joints
310 ..Casing enclosed core
311 ...Separate core
312 ....Removable
313 .....Sponge rubber
314 ......With core compression
315 .....Superimposed rings
316 .....Sectional transversely
317 ......Balls
318 .....Integral structure
319 ......Recessed
320 ....Chambered
321 ......Perforated
322 ......Chambered
323 ..Integral
324 ...With recesses
325 ....Chambered
326 ...With perforations
327 ...Chambered
328 ....Multiple
329 .....Annular
450 .Pneumatic tire or inner tube
451 ..Tire cord reinforcement materials per se

	TIRES, RESILIENT
	.Pneumatic tire or inner tube
452	..Cordless tires (e.g., cast tires)
453	..Tire characterized by closed annular transverse cross section
454	..Tire characterized by the dimension or profile of the cross sectional shape
455	..Asymmetric tire
456	...Asymmetry due to cross sectional profile
457	..Tire foldable in storage or nonuse condition (e.g., collapsible space saving tire)
458	..Tire reinforcement material characterized by short length fibers or the like
331.1	..Multiple chamber
332.1	...Cylinder and piston
333.1	...Transverse walls
334.1	....Mutually free walls
335.1	.....Interfitting
336.1	.....Balls
337.1	.....With simultaneous inflating means
338.1	....With simultaneous inflating means
339.1	...Annular chambers
340.1	....Mutually free walls
341.1	.....With simultaneous inflating means
342.1	....With simultaneous inflating means
343.1	..Sectional casings
344.1	...Circumferential
345.1	....Rigid inner sections
500	..With means restricting relative movemet between tire and inner tube (e.g., anti-creep feature)
501	..With means to protect inner tube from rim
502	..Automatic sealing of punctures (e.g., self-healing)
503	...Using flowable coating or composition
504	....On inner surface of tubeless tire
505	.....Sealant in plural layers or plural pockets
506	....Within or part of construction of inflating inner tube
507	.....Sealant in plural layers or plural pockets
508	...By compression
509	...With reinflating means
510	..Tire characterized by its air impervious liner or inner tube
511	...Inner tube
512	....With reinforcement element
513	..With means to protect tire from rim
514	..Means other than rim closing the tire opening
515	...Positive casing closure
516	..With means enabling restricted operation in damaged or deflated condition
517	...With sidewall insert to facilitate load support in emergency
518	...Utilizing additional inflatable supports which become load bearing in emergency
519	....Inflated or expanded in emergency only
520	...Utilizing additional noninflatable supports which become load supporting in emergency
521	...Internal lubricating or cooling
522	...Means facilitating folding between sidewall portions (e.g., run flat sidewalls)
523	..Arrangement of grooves or ribs in sidewall
524	..Having annular inlay or cover on sidewalls (e.g., white sidewalls)
525	..Characterized by chemical composition or physical properties of external sidewall materials
526	..Characterized by belt or breaker structure
527	...Physical structure of reinforcing cords
528	...Folded ply structure
529	....Utilizing two or more cord materials
530	...Consisting of only one ply
531	...Utilizing at least one ply the cords of which run circumferentially (zero-degree belt)
532	...With cushioning or other special rubber ply layer
533	...Reinforcing plies made up from wound narrow ribbons
534	...Structure where each bias angle reinforcing cord ply has no opposingly angled ply
535	...Structure made up of two or more sets of plies wherein the reinforcing cords in one set lie in a different angular position relative to those in other sets
536	...Structure using multiple reinforcing elements made of differing materials
537	...Breaker or belt characterized by the chemical composition or physical properties of elastomer or the like
538	...Breaker or belt characterized by its dimensions or curvature relative to the carcass or any other part of the tire
539	..Characterized by the structure of the bead portion of the tire
540	...Structure of inextensible reinforcing member
541	...Apex or filler strip
542	...Flipper strips
543	...Chafer or sealing strips
544	...Bead contour for engagement with mounting rims (e.g., lips, ribs or grooves)
545	...Multiple bead cores at each terminal edge or tire supporting surface
546	...Bead characterized by the radial extent of apex, flipper or chafer into tire sidewall
547	...Bead characterized by the chemical composition and or physical properties of elastomers or the like
548	..Characterized by the carcass, carcass material, or physical arrangment of the carcass materials
549	...Cushion means inward of outermost carcass ply
550	...Carcass ply extends from at least one bead region without being folded about bead rings
551	...Carcass ply only folded about one bead ring
552	...Carcass ply turnup structure around bead rings
553	....Folded from outside to inside of bead core
554	....Characterized by the extent of the fold up into the sidewall of the tire relative to the other tire dimensions
555	...Sidewall stiffening or reinforcing means other than main carcass plies or foldups thereof about beads
556	...Physical structure of reinforcing cords

	TIRES, RESILIENT
	.Pneumatic tire or inner tube
	..Characterized by the carcass, carcass material, or physical arrangment of the carcass materials
557	...With two or more differing cord materials
558	...Carcass characterized by the reinforcing cords of each carcass ply being arranged substantially parallel
559	....Reinforcing cords run in opposite directions in successive carcass ply, i.e., bias plies
560	....Reinforcing cords of at least one carcass ply extend transversely across the tire from bead to bead, (i.e., radial ply)
561	.....Combined with a bias angled ply
562	...Cords curve from bead to bead in plural planes, (e.g., s-shaped cord paths)
563	...Reinforcing cord of a carcass ply arranged in a crossing relationship within the ply, (e.g., woven, braided or knitted plies)
564	...Carcass characterized by the chemical composition or physical properties of the elastomers or the like
565	..Adhesion promoter: rubber to rubber or reinforcement to rubber
367	.Patches
368	..Mechanically secured
369	...Inside and outside, bolt connected
370	..With plugs
371	..Bandages
372	...Mechanically secured
373	....To felly or rim
375	.Wheel securing means
376	..Plural tire
377	..Retracting wheel section
378 R	..Integral rims
378 W	....Rim welded to disc
379.3	...Interlocking tire and rim
379.4	....With elongate bead guard
379.5	....Bead and rim interlock
380	....Tire embraced rim
381.3	....Deep channel rim
381.4	.....With elongate circumferential bead guard
381.5	.....With channel cover
381.6	.....With channel filler
382	....Clincher rim
383	.....Pneumatic tire
384	...With anit-creep lugs
385	..Axial
386	..Radial
387	...With circumferential tire incorporated clamps
388	..With annular tire incorporated clamps
389	...With mechanically joined ends
390	....Adjustable
391	.....Pneumatic tire
392	...Adjustable
393	..Reinforced tire base structure
394	...Metallic external base ring
395	...With annular exterior clamps
396	..Separable rim parts
397	...Exterior clamps
398	....Lateral acting
399	...Interior clamps
400	....Spreaders
401	.....Combined sectional channel
402	...Sectional channel
403	....Duplicate sections
404	.....Pneumatic tire
405	....Pneumatic tire
406	.....Split side flange
407	......End connected
408	......With rim engaging end lugs
409	.....Locking rim secured
410	......Split locking ring
411	.....Overlapping section
412	......Bayonet or threaded joint
413	.....Bayonet or threaded joints
414	.....Hinged section
415	.Inflating devices
416	..Vehicle body carried supply
417	...Rotary joints
418	..Wheel carried supply
419	...With positive pump operating means
420	....Gearing
421	....Cam
422	.....Eccentric bearing
423	....Obstacle
424	.....Ground
425	......Casing interposed
426	.......Casing enclosed pump
427	..Combined wheel and valve stem
428	...With dust cap
429	..Combined tire and valve stem
430	...Reinforcements or patches
431	..Combined valve stem cap and tool
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	DIGESTS
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DIG 1	Pebble ejectors
DIG 2	Static discharge
DIG 3	Slits in treads
DIG 4	Crack resistant
DIG 5	Water filled
DIG 6	Peg leg
DIG 7	Rubber valves
DIG 8	Clamps
DIG 9	Bead to rim seal
DIG 10	Split rim seal
DIG 11	Tubeless valves
DIG 12	White sidewalls
DIG 13	Valves stem guards
DIG 14	Fabrics
DIG 15	Overlap
DIG 16	Air impermeable liner
DIG 17	Grooved rim
DIG 18	Hub tires
DIG 19	Sandwich breakers
DIG 20	Rims for inverted bead tires

1	METHODS
600	.Single crystal formation
601	..Including measuring, testing or sensing
602	..Including passage of noninduced current or plasma through solid-liquid interface
603	..Formation in solid state
604	..Zone melting with a melting point depressant, e.g., solvent zone melting, etc.
605	..With addition or removal of a dopant
606	...Dopant enters vapor state
607	..Including floating a solid or liquid in a liquid layer
608	..Including shaping or passage of melt through an aperture
609	..Deposited material passes through a vapor, liquid and solid sequence
610	..Deposited vapor forms a single crystal
611	...Vapor flow is: through a restriction, through a movable or divergent outlet(s) or intermittent
612	...Including prior treatment or positioning of substrate
613	...Deposition results from decomposition
614	...Deposited material formed in vapor state
615	..Fusion of falling powder, e.g., verneuil process, etc.
616.1	..Using a unidirectional moving solid-liquid interface through a melt, e.g., freeze gradient, bridgement, etc.
616.2	...Si or Group III and V compound
616.3	...With use of seed or seed material, e.g., Kyropoulos type, etc.
616.4	...With specified direction of solidification or imposition of a temperature gradient, e.g., Bridgeman or Stockbarger types, etc.
616.41	....Solidification from the bottom up
617.1	..Speed pulling, e.g., Czochralski, etc.
618.1	...Including relative eccentric movement between seed and melt support
619.1	...Including cooling or temperature gradient within melt
620.1	...Ribbon, sheet or of irregular or nonuniform shape
620.2	...Compound of Group III and V or Group I and IV or Group II and VI, e.g., mixed, binary, tertiary or quaternary materials, etc.
620.3	...Si, Ge, Sn, or Pb
620.4	....Silicon, per se
620.5	...B, Al, Ga, In or Tl
620.7	..Zone melting
620.71	...Ribbon, sheet, or of irregular or nonuniform shape
620.72	...High energy radiation or plasma
620.73	...Crucibleless zone melting
620.74	....Including opposite axial or relative eccentric movement between solid parts of the crystalline material
620.75	....Including cooling or temperature gradient within melt
620.76	...Horizontal crucible
621	..From liquid solution
622	...Moving substrate (seed) during formation
623 R	...Maintaining an aqueous liquid above normal boiling point, e.g., hydrothermal, etc.
623 Q	.....Quartz
624	...Molten solution
625	.Etching
626	..Measuring, testing or inspecting
627	...By electrical means or of electrical property
628	..Altering the etchability of a substrate by alloying, diffusion or chemical reacting
629	..With uniting of preforms, e.g., laminating, etc.
630	...Prior to etching
631	....Delamination subsequent to etching
632	....With coating
633	...Differential etching
634	....Metal layer etched
635	..With in situ activation or combining of etching components on surface
636	..With thin film of etchant between relatively moving substrate and conforming surface, e.g., chemical lapping, etc.
637	..With relative movement between the substrate and a confined pool of etchant
638	...With removal of adhered reaction product from substrate
639	...With substrate rotation, repeated dipping or advanced movement
640	..Projection of etchant against a moving substrate or controlling the angle or pattern of projected etchant
641	...Curved surface etched
642	..Recycling or regenerating etchant
643	..With treatment by high energy radiation or plasma, e.g., ion beam, etc.
644	..Forming or increasing the size of an aperture
645	..With mechanical deformation, severing or abrading of a substrate
646	..Etchant is a gas
647	..Etching according to crystalline planes
648	..Etching isolates or modifies a junction in a barrier layer
649	...Discrete junction isolated, e.g., mesa formation, etc.
650	..Sequential application of etchant material
651	...Sequentially etching the same surface of a substrate
652	....Each etching exposes surface of an adjacent layer
653	.....Etched layer contains silicon, e.g., oxide, nitride, etc.
654	..Differential etching of a substrate
655	...Composite substrate
656	....Substrate contains metallic element or compound
657	....Substrate contains silicon or silicon compound
658	...Design or pattern formed by manual drawing or engraving
659.1	...Resist coating
660	....Pattern applied by transfer
661.1	....Plural resist coatings
662	..Silicon, germanium, or gallium containing substrate
663	...Glass substrate
664	..Metal substrate
665	...Aluminum
666	...Copper
667	..Metal oxide substrate
668	..Organic substrate
39	.Plaster board making
40	..With bending or folding of facing sheet
41	..With water-proofing with added material

	METHODS
	.Plaster board making
42	..With embedding of reinforcing material during or subsequent to core formation
43	..Pore forming in situ
44	..With preliminary treatment of facing sheet
45	..With subsequent treatment of plaster board
46	...Perforating
47	.Making electrical conductors of indefinite length
48	..With filling of void or cavity with fluent material
49	..Splicing
50	..With mechanical working of conductor
51	..Covering of conductor
52	...With preformed material
53	....Wrapping of sheet material (e.g., tape) about conductor and/or conductor assembly
54	.....By longitudinally bending sheet
55	.....Plural spaced conductors
56	.....Plural covering operations
57	.Maintaining the natural appearance of plants or animal parts
58	.Contour or profile photography to reproduce three-dimensional objects
59	.Relief or intaglio representations of three-dimensional objects (e.g., relief modeling of photographs)
60	.Surface bonding and/or assembly therefor
61	..Simulated products of nature
62	..With manual drawing or engraving
62.2	..With formation of lamina by bulk deposition of discrete particles to form self-supporting article
62.4	...Liberation or formation of fibers
62.6	...By joining portions of batt to itself
62.8	...To similarly formed batt
63	..Manually arranging different colored or shaped discrete elements to form design
64	..With measuring, testing or inspecting
65	..Of multiple spaced elements between and transverse of parallel webs (e.g., Venetian blind ladders)
66	..Adhesive application of fasteners to articles (e.g., slide fastener to garment)
67	..Utilizing phosphorescent or fluorescent material
68	..With fur removal from animal pelt
69	..Application of end closures to containers
70	..Encasing movable or loosely confined element between adhering lamina (e.g., drawstrings)
71	..Of lamina to building or installed structure
72	..Setting or embedding tufts or discrete pile elements onto backing (e.g., rugs, brushes, etc.)
73.1	..With sonic or ultrasonic treatment
73.2	...Rod, strand or filament
73.3	...With sonic or ultrasonic cutting
73.4	...Sheet or web splicing
73.5	..Friction treatment (e.g., welding)
73.6	..Vibratory treatment
74	..With application of centrifugal force
75	..With balancing of product
76	..With parchmentizing or transparentizing
77	..With pore forming in situ to form cellular lamina
78	...Foaming
79	....Subsequent to assembly of laminae
80	..With refrigeration or freezing
81	..With melting or gasification of permanently associated solid material in situ in airtight cavity
82	..With flame contact of lamina
83	..With swelling of material of lamina
84	..With shrinking of material of lamina
85	...Subsequent to assembly of laminae
86	....Of lamina covering cylindrical or spherical body
87	..Providing escapeways for gases trapped or generated between layers
88	..Fray-prevention by bonding
89	..With vitrification or firing of ceramic matieral
90	..Utilizing layer to prevent migration or bleeding between laminae
91	..With separate permanent mechanical joining means (riveted, sewed, stapled, etc.)
92	...With penetrating of fastener
93	....Sewing
94	..Reclaiming, renewing or repairing articles for reuse
95	...Toroidal shapes (e.g., tire or tube)
96	....Adhesively secured tire retreads
97	....Puncture repairing
98	...With removal of defective area to be repaired
99	..Optically transparent glass sandwich making (e.g., window or filter)
100	...Variegated colored lamina or interlayer
101	...With cutting or breaking or partial removal of interlayer and/or lamina
102	...With deformation or shaping of interlayer and/or lamina
103	...With application of plural sequential pressures
104	...With air evacuation between laminae
105	...Directly applied fluid pressure
106	...With preformed intermediate adhesive layer
107	...Sandwich edge sealing
108	..Mounting transparent lamina over window opening (e.g., slide-mounting)
109	..Multipane glazing unit making (e.g., air-spaced panes)
110.1	..Making flexible or resilient toroidal shape, e.g., tire, inner tube, etc.
111	...Moving work progressively to separate assembly stations
112	...Solid tire type (i.e., nonpneumatic)
113	....Having cushioning void or cavity
114	...Incorporation of solid nonrubber material at exposed tread surface of tire (e.g., anti-skid)
115	...Applying flowable puncture sealing material
116	...Applying differently colored material at sidewall (e.g., white wall)
117	...Building tires directly from strands or cords
118	...Tubular (airtight) torus (e.g., auto tube-making)
119	....Multichamber safety tube
120	....Valve-applying
121	....Applying reinforcing material to external tube surface
122	....Joining tube ends to form torus
123	...Of plural layers
124	....At least one layer including metal cords
125	....With injection molding of outer lamina

METHODS
.Surface bonding and/or assembly therefor
..Making flexible or resilient toroidal shape, e.g., tire, inner tube, etc.
...Of plural layers
126 ....Axially assembling preformed flexible endless bands
127 .....With tread-preforming
128.1 ....Applying tread material to fully-formed carcass
128.6 .....With specified treatment of tread material before application to carcass
129 ......Shaping
130 .....By winding or including application of inextensible lamina under tread bond
130.3 .....With specified procedure for interlocking of laminae or removal of air from therebetween, e.g., "stitching", etc.
130.5 .....With specified procedure for cooling or heating, e.g., for vulcanization, etc.
130.7 .....With specified procedure for bead, carcass or sidewall formation
131 ....Bead-applying
132 .....Folding fabric about bead
133 ....Applying fabric to form (e.g., carcass building)
134 .....Fabric splice end treatment
135 ...Bead portion of carcass treatment
136 ..Tire bead ring making
137 ..Flexible endless drive belt making
138 ...Forming grooves on inner surface
139 ..."V" or trapezoid section belt
140 ....With plastic shaping or molding
141 .....Wrapping of belt prior to shaping
142 ....With cutting to "V" or trapezoid section
143 ..Helical wire or plural ring reinforced flexible tube making
144 ...Assembling preformed helical coil or rings with separate tube
145 ..With encapsulating of permanently fluent material in hollow or porous lamina or filling of space between adhered laminae
146 ...Prior to bonding of laminae (e.g., golf balls)
147 ....With inflation of airtight cavity
148 ..With weaving, knitting, braiding, twisting or needling
149 ...About tubular lamina
150 ..With electro-deposition
151 ...On adherent surface of lamina prior to assembly
152 ..With temporary disassembling and subsequent bonding of same laminae
153 ..With abrading or grinding of lamina
154 ...Subsequent to assembly
155 ..With destruction of solid transitory material, e.g., dissolving, melting, etc.
156 ..With fluid pressure to prevent collapse of hollow structure during assembly and/or joining
157 ..Joining indefinite length laminae end-to-end
158 ...Of wire, rod, tube or filament
159 ...With cutting of joining ends
160 ..Bonding in stressed condition of at least one prestressed element
161 ...Of stressed filaments
162 ...During winding of lamina
163 ...Bonding of sheets or webs only
164 ....Running length web
165 ...Stressing spherical or tubular body
166 ..Bonding of flexible filamentary material while in indefinite length or running length
167 ...With formation of filaments
168 ...With removal of filamentary material subsequent to lamination thereof
169 ...With winding of filamentary material
170 ....About spherical lamina
171 ....With winding of separate sheet or web
172 ....Winding about and uniting to core
173 ....Winding about subsequently removed core or mandrel
174 .....With cutting of filamentary material to form web or sheet
175 .....Of filamentary material only
176 ...To web of indefinite length
177 ....With axis of filamentary material nonparallel to axis of web
178 ....Plural filaments
179 .....Between plural webs
180 ...Of filamentary material only to form article
181 ....Article is sheet or web
182 ..Of at least two bonded subassemblies
183 ..With creping, wrinkling, crinkling
184 ..With winding of web or sheet
185 ...Uniting to separate core
186 ....Spherical core
187 ....Tubular core
188 .....Sequential winding of separate webs
189 ...About irregular or configured mandrel surface
190 ...Sequential winding of separate webs
191 ...With additional assembly (other than winding)
192 ....Prior to winding
193 ...With cutting of wound body (excludes nominal cutoff)
194 ...With reshaping of wound body
195 ...Longitudinally progressive helical winding
196 ..With permanent bending or reshaping or surface deformation of self-sustaining lamina
197 ...By separating laminae between spaced secured areas (e.g., honeycomb expanding)
198 ...By inward collapsing of portion of hollow body
199 ...Running or continuous length work
200 ....Longitudinal bending
201 .....Prior to or during assembly with additional lamina
202 .....Overedge bending or overedge folding
203 .....And edge-joining of one piece blank to form tube
204 ....Folding
205 ....Transverse corrugating
206 .....Subsequent to assembly of laminae
207 .....With deformation or cutting of corrugated lamina
208 .....Treating material of corrugated lamina or dry adhesive thereon to render tacky
209 ....Surface deformation only (e.g., embossing)
210 ...To form undulated to corrugated sheet and securing to base with parts of shaped areas out of contact
211 ...With slitting or removal of material at reshaping area prior to reshaping

METHODS
.Surface bonding and/or assembly therefor
..With permanent bending or reshaping or surface deformation of self-sustaining lamina
212 ...By bending, drawing or stretch forming sheet to assume shape of configured lamina while in contact therewith
213 ....Encasing or enveloping the configured lamina
214 ....With preshaping of lamina
215 ....Flexible sheet to cylinder lamina
216 ...Overedge bending of lamina about edges of sheetlike base
217 ...Bending of one piece blank and joining edges to form article
218 ....Hollow cylinder article
219 ...Surface deformation only of sandwich or lamina (e.g., embossed panels)
220 ....Subsequent to lamination
221 ...Subsequent to assembly
222 ....Of parallel stacked sheets only
223 .....Bending of one lamina only
224 .....To form dished or receptacle-like product
226 ....Folding only
227 ...By folding
228 ..Of preshaped laminae between closed similarly shaped press platens or clamps
229 ..With stretching
230 ..Direct contact transfer of adhered lamina from carrier to base
231 ...With formation of lamina of continuous length by molding or casting on endless carrier
232 ...Carrier is configured mold
233 ...Metal foil lamina
234 ...Of portion only of lamina from carrier
235 ...Plural transferring operations and/or with additional laminating
236 ...Solvent other than water to release lamina
237 ...Coating of transferred lamina
238 ...Running or continuous flexible web carrier
239 ...Plural superimposed laminae transferred
240 ....Transfer of printing or design
241 ...To base coated with adhesive
242 ..With lamina formation by molding or casting
243 ...Forming plural continuous web laminae
244.11 ...By extrusion
244.12 ....Encapsulating or enclosing a lamina
244.13 ....Hollow article or lamina
244.14 .....Differential fluid pressure used
244.15 .....Specific nonuniform lamina or article, e.g., netting or rib and groove, etc.
244.16 ....With printing
244.17 ....Electrical, magnetic, or wave energy used
244.18 ....With cutting, severing, or perforating
244.19 .....After bonding, e.g., as finishing step, etc.
244.21 ....Differential fluid pressure used
244.22 ....Bonding spaced preforms
244.23 ....Pretreatment
244.24 ....Post-treatment
244.25 ....Article or at least one lamina of nonuniform thickness or discontinuous
244.26 ....Bonding in specified environment
244.27 ....Pressure assisted bonding
245 ...In configured mold
246 ...On temporary planar support (e.g., film casting)
247 ..With stripping of adhered lamina
248 ...With cutting of one lamina only while adhered
249 ...And assembly with different lamina
250 ..With cutting, punching, tearing or severing
251 ...And simultaneously bonding (e.g., cut-seaming)
252 ...Perforating lamina
253 ....Subsequent to assembly of laminae
254 ...Splitting sheet lamina in plane intermediate of faces
255 ...Spiral peeling
256 ...Prior to assembly
257 ....Partial cutting (e.g., grooving or incising)
258 ....Cutting to shape joining edge surfaces only
259 ....Continuous longitudinal slitting
260 .....Bonding face to face of laminae cut from single sheet
261 ....Punching and bonding pressure application by punch
262 .....Closure cap liner applying type
263 ....Separate cutting of separate sheets or webs
264 ....Of plural laminae from single stock and assembling to each other or to additional lamina
265 .....Applying plural cut laminae to single face of additional lamina
266 .....Joining of cut laminae end-to-end
267 ...Flash, trim or excess removal
268 ...Partial cutting bonded sandwich (e.g., grooving or incising)
269 ...Of continuous or running length bonded web
270 ....One web only
271 ....Continuous longitudinal slitting
272.2 ..With direct application of electrical, magnetic, or radiant energy to work
272.4 ...Involving magnetically susceptible lamina or incorporating into the work a particulate susceptor material having magnetic properties
272.6 ...Exposure of work to corona or glow discharge
272.8 ...Exposure of work to laser
273.1 ...Developing electrostatic charge
273.3 ...Before final assembly, e.g., to cure lamina, etc.
273.5 ....Before and after final assembly
273.7 ...Applying pressure before electrical, magnetic, or radiant energy
273.9 ...Work constitutes conductor of electrical circuit
274.2 ....Conductor is a coil
274.4 ...Exposure of work to electrode
274.6 ....Continuously moving work in relation to electrode
274.8 ....With application of adhesive
275.1 ...Only part of contacting lamina surfaces bonded, e.g., seaming, etc.
275.3 ....With application of adhesive
275.5 ...To polymerize or cure material in work
275.7 ...With application of adhesive
276 ..With mass application of nonadhesive fibers or particles between laminae
277 ..With printing
278 ..With coating of nonadherent face of lamina
279 ...Coating with fibers or particles

	METHODS
	.Surface bonding and/or assembly therefor
	..With coating of nonadherent face of lamina
280	...Subsequent to bonding
281	..Combined, e.g., with cleaning, etc.
282	..Simultaneous heating and cooling
283	..Adhesive applied as dry particles
284	...Treating particle with liquid to render tacky
285	..Direct application of vacuum or fluid pressure during bonding
286	...To remove gas from between assembled laminae
287	...To the lining of hollow body
288	..Simultaneous pressure application to at least two separate sandwiches
289	..Utilizing parting or release material to prevent adhesion
290	..Bonding of facing continuously contacting laminae at spaced points only
291	...By nonuniform adhesive application
292	..Of laminae having opposed facing areas out of contact
293	..Inserting of lamina in hole, aperture or recess of other lamina and adherence to side walls thereof
294	...Core within tube
295	..Adhesive applying to restricted area and spreading thereof by assembly pressure
296	..Strands, rods, tubes or sticklike bodies to each other only
297	..Of discrete laminae to single face of additional lamina
298	...Embedding of laminae within face of additional laminae
299	...All laminae planar and face to face
300	....With covering of discrete laminae with additional lamina
301	.....Opposed laminae are running length webs
302	....Lamina is running length web
303	.....Feeding of discrete laminae from separate sources
303.1	..Inserting lamina into preformed plastic body
304.1	..Butt edge joining of laminae
304.2	...Joining of nonplanar elements, e.g., configured hollow objects, etc.
304.3	...With joiner member or reinforcement
304.4	....Carpet or fabric joined
304.5	...With preliminary edge treatment or joining of edges of irregular shape, e.g., tongue and groove, beveled, etc.
304.6	...By heat
304.7	...Of carpet or fabric
305	..By applying after assembly an adhesive, solvent or chemical activating agent
306.3	..By pressure or drying only, without tack, e.g., for easy delamination, etc.
306.6	..Using single, preformed, diverse bonding lamina between other laminae
306.9	...Including curing of nonfully polymerized material
307.1	..By curing of nonfully polymerized self-sustaining lamina
307.3	...With coating or impregnating a face to be adhered
307.4	....Indefinite plurality of similar impregnated thin sheets, e.g., "decorative laminate" type, etc.
307.5	....Coating solidified, e.g., by drying, etc., before assembly
307.7	...Including uncurable lamina, e.g., metal, paper, etc.
308.2	..By tackifying substance of self-sustaining lamina to be bonded, e.g., autogenous bonding, etc.
308.4	...Only part of contacting laminae surfaces bonded, e.g., seam, seal, etc.
308.6	...With treating agent application to a surface
308.8	....Plural agents applied sequentially or to different laminae or using water as sole agent
309.3	....Diverse laminae
309.6	...Involving defined plastic flow or melting of entire lamina
309.9	...With heating of lamina prior to assembly
310	..Of laminae having a different coating on at least two mating surfaces
311	..Sequential heating and cooling during pressure applying
312	..Sequential different pressure applying
313	..Interposing intermediate laminate between non-coated laminae
314	..Sequentially applying different liquids or liquefiable materials to adhering face of lamina
315	...At least two liquids rubber and/or resin-containing
316	...First applied liquid acid-containing
317	...Protein-containing liquid
318	...Carbohydrate-containing liquid
319	...One liquid containing inorganic material only
320	..Heating of dry adhesive on lamina prior to assembly contact
321	..Heating adhesive by contacting with heated lamina
322	..Heating lamina prior to assembly or adhesive applying
323	..Interposing subsequently removed flexible element between lamina and a pressure applying surface
324	..Running or continuous webs of indefinite length
324.4	..By tackifying a single lamina of intermediate laminate
325	..Particular adhesive
326	...Organic containing
327	....Synthetic resin containing
328	.....With carbohydrate and/or protein or derivatives thereof
329	.....Silicon resin
330	.....Epoxy resin
330.9	.....Nitrogenous resin
331.1	......With polymerization completion, i.e., curing, after assembly
331.2	.......N only in unlinked side-chain or side-ring
331.3	.......Derived from aldehyde or ketone
331.4	.......Iso- or thio-cyanate moiety reacted in curing
331.5	.......N in a ring
331.6	......N only in unlinked side-chain or side-ring, e.g., polyvinyl, pyridine, etc.
331.7	......Derived from iso- or thio-cyanate, e.g., polyurethane, etc.
331.8	......Derived from acyclic compound containing N
331.9	.......And aldehyde, ketone or carbocyclic moiety-containing compound
332	.....Polycarboxylic acid ester resin
333	.....Halogenated hydrocarbon resin

	METHODS
	.Surface bonding and/or assembly therefor
	..Particular adhesive
	...Organic containing
	....Synthetic resin containing
334	.....Hydrocarbon resin
335	.....Phenolic-aldehyde resin
336	....Protein and/or carbohydrate containing and/or derivatives thereof
337	....Bituminous containing
338	....Natural rubber containing
344	.Delaminating per se
345	DIFFERENTIAL ETCHING APPARATUS
346	PLASTER BOARD MAKING APPARATUS
347	.With surface deformation means
348	.With edge treatment means
349	SURFACE BONDING MEANS AND/OR ASSEMBLY MEANS THEREFOR
350	.Automatic and/or material-triggered control
351	..Plural interrelated sensing means
352	..To stop operation of complete machine
353	..Of cutter
354	...And separate means feeding cut pieces in sequence and applying to serially conveyed articles
355	...Responsive to feed of article to which cut piece is applied
356	..Of application of fluent material to work
357	...By presence or absence of work to which applied
358	..Of application of bonding pressure
359	..Of temperature and/or motion of heat exchange means
360	..Means responsive to weight or dimension
361	..Of feed or motion of indefinite length work or transfer carrying tape
362	..Of feed of articles to assembly station
363	...Responsive to presence, absence, or condition of article to which applied
364	....Sheet feeding
365	.With safety interlocks
366	.With timing means
367	.With electrical controls
368	..For starting or stopping machine operation
378	.With testing, measuring and/or indicating means
379	.With inspecting and/or illuminating means
379.6	.With means applying wave energy or electrical energy directly to work
379.7	..To an electrically conductive lamina or component incorporated into the work
379.8	..With means to assemble laminae or position them relative to each other
379.9	...With plural diverse heating means
380.1	...With tube-forming means
380.2	...With electrode or coil member contacting work
380.3	....Electrodes on opposing sides of smallest dimension of work
380.4	.....With means moving one electrode toward the other electrode
380.5	......With means to change the configuration of a lamina, e.g., folding, deforming, etc.
380.6	..With electrode having a mechanical function, e.g., pressing, etc.
380.7	...Cutting, tearing, or breaking function
380.8	...Shaping or deforming function, e.g., patterned electrode, etc.
380.9	..With radiant heater not touching work
381	.Chamber enclosing work during bonding and/or assembly
382	..Evacuated or fluid pressure chamber
383	.Means encasing separate nonadhered part between adhered laminae
384	.With printing
385	..Simultaneous with bonding
386	...Printing member also bonds
387	..Printing
388	..After bonding
389	.Including cleaning, conditioning or renewing means for apparatus
390	.With coating means for work (other than laminating adhesive)
391	.Work-secured and/or work-guided
392	..Pipe wrapping type
393	.With braiding or weaving means
394.1	.Tire body building type
395	..Means delaminating protective liner from lamina
396	..Multiple discrete building forms and/or means advancing a building form through multiple work stations
397	..Means building tires from strands or narrow tapes
398	..Means operating on the bead portion of the tire
399	...Means trimming fabric adjacent bead
400	...Means folding carcass fabric about a bead
401	....Inflatable bag type
402	....Disc or roller type
403	...Means placing bead ring on tire carcass
404	..Solid tire building type
405.1	..With fabric or tread stock feeding means
406	...Means selecting stock from multiple source
406.2	...For transporting discrete ring-shaped lamina
406.4	...With cutting, heating, laminating, or shaping means upstream of assembling means
406.6	....Stretching means
407	..Centerless core or off-center support of annular tire structure
408	..Relative traversing motion between rotating tire supporting structure and pressing or bending means
409	...Compound traversing motion
410	....With changing direction of force of pressing or bending means with respect to the axis of rotation of the supporting structure (e.g., curved drum)
411	.....Pressing means manually advanced toward the axis of rotation of the supporting structure
412	...Resilient or deformable surface pressing or bending element
413	...Plural sequential pressing or bending elements
414	..Building drums per se
415	...Axially or widthwise adjustable or collapsible
416	...Resilient and/or inflatable core
417	...Collapsible
418	....Rack and pinion type actuator
419	....Resilient spring actuated
420	....Toggle linkage lever type actuator
421	..Stitching elements per se
421.2	..Tire chamber and means regulating interior casing pressure

SURFACE BONDING MEANS AND/OR ASSEMBLY MEANS THEREFOR
.Tire body building type
421.4 ..With means for folding lamina while on drum
421.6 ..Tire support with pressing or heating means
421.8 ..Ring-shaped lamina stretching means
422 .Tire bead ring winding type
423 .Means assembling part within hole or aperture (telescoping)
424 ..Electric lamp or space discharge device envelope basing type
425 .Longitudinally progressive helical winding means
426 ..With means cutting wound body to form sheet or web
427 ...Strands secured to web
428 ..Forming and/or covering indefinite length article
429 ...Rotating core or mandrel
430 ...By winding plural strands or webs
431 ....About circular section core or mandrel
432 .....Plural discrete axially spaced winding means
433 .Indefinite or running length flexible strand, rod, tube or filament uniting
434 ..Means applying transverse spacers to spaced parallel strands
435 ..Pile fabric making type
436 ..To indefinite or running length web
437 ...With means forming web by calendering
438 ...With means folding web longitudinally
439 ...Transversely of web
440 ....Reciprocating feed means for strand
441 ..Means gathering strands or filaments only into indefinite length
441.5 .Envelope sealing type
442 ..With stamp applying means
442.1 ..With bending or folding means
442.2 ..With feeding means
442.3 ...Reciprocating feed
442.4 ..Work traversing type
443 .With bending, folding, winding, or wrapping means
444 ..Pneumatic blast to bend work
445 ..About preformed sphere
446 ..Rotating mandrel or article
447 ...Means registering sheet with selected peripheral portion of rotating article
448 ...Translating axis of rotation
449 ....Rolling mandrel or article
450 .....Winding flexible web
451 .....Article rolls across sheet stack
452 ......By gravity
453 ......Belt feed
454 .....By gravity
455 .....Belt feed
456 ....Axis translates in circular path
457 ...Centerless core or mandrel
458 ...Means serially feeding mandrel or article to applying station
459 ..For an indefinite or running length flexible web
460 ...Tire bead or endless belt covering type
461 ...Longitudinal bending
462 ....Corrugating
463 ....Plural sequential bending means
464 ....And means feeding discrete articles to web
465 ....Single web only
466 .....Tube-making type
467 ....And means uniting noncoextensive plural webs
468 ...Means bending to configuration of part to which secured
469 ...Transverse withdrawal of shaping or shape-retaining elements
470 ...And means applying separate web to shaped web
471 ....While still on shape-retaining means
472 .....Fluted roll-shape retainer
473 ......Separate means holding web in flutes
474 ...Pleating means
475 ..To configuration of part to which secured
476 ...Plural discrete bending means, each acting on separate article
477.1 ...Plural, distinct, sequential bending or folding means
478 ....Intersecting bend axis
479 .....Means bending sheet over edges of planar part
480 ......With separate member pressing bent sheet corner at axis intersection
481 ....Arcuate bending
482 ....Having intersecting axes of force
483 ...Flexible sheet across through passage for work
484 ....Sheet applied to passage
485 .....With additional separate smoothing means
486 ...Member travels along configured part
487 ....Flexible bristle wiping surface
488 ....Bodily deformable pad type
489 ....Opposed movable biased members
490 .....Positively actuated to intermittently defeat bias
491 ......Cam defeats bias
492 ...By swinging folding member approaching part
493 ...Deformable pad
494 .With stretching or tensioning means
495 ..By driven web feeding means
496 ...To transversely stretch or tension the web
497 .With gas, vapor or flame contact means for work
498 .With work cooling means
499 .With separate (nonpress) heating means for work
500 .With casting, plastic molding or extruding means
501 ..With means generating at least one self-sustaining web (e.g., film casting)
502 .Means joining flexible indefinite length or endless bodies end-to-end (e.g., film, tape, belt splicers)
503 ..Tube splicing type (e.g., inner tube)
504 ..Moving web (flying splice or with web accumulating means)
505 ..Means applying adhesive tape to joint only
506 ...With severing means for tape before application
507 ..Longitudinally moving web support moving web ends into association
508 ...With scraper or adhesive applying means
509 ..With scraper or adhesive applying means
510 .With cutting, punching, piercing, severing or tearing
511 ..Plural severing means each acting on a different work piece
512 ..Severing followed by associating with part from same source
513 ..Means making hole or aperture in part to be laminated

SURFACE BONDING MEANS AND/OR ASSEMBLY MEANS THEREFOR
.With cutting, punching, piercing, severing or tearing
..Means making hole or aperture in part to be laminated
514 ...And securing separate part over hole or aperture
515 ..Cutting element simultaneously bonds (e.g., cut seaming)
516 ..Means feeding plural workpieces to be joined
517 ...Severing before bonding or assembling of parts
518 ....Severing means or member secured thereto also bonds
519 ....Delivering cut part to indefinite or running length web
520 .....Cutter also delivers cut piece
521 ....Delivering cut part in sequence to serially conveyed articles
522 ...Cutting indefinite length web after assembly with discrete article
523 ..Work traversing type
524 ...With liquid applying means
525 ....Slitting and severing
526 ....Cutting after bonding
527 ...Fixed cutter
528 ..Stamp from multiple row sheet type
529 ..With means projecting fluid against work
530 ..Cutter actuated by or secured to bonding element
531 ...With liquid applicator
532 ....Common actuator for bonding and liquid applying means
533 .....Liquid applied to web before cutting
534 ......Roller applicator
535 .With means shaping, scarifying or cleaning joining surface only
536 .Combined and/or convertible
537 .With bond interfering means (slip sheet, etc.)
538 .With work feeding or handling means
539 ..For plural parts or plural areas of single part
540 ...Lamina transferred to base from adhered flexible web or sheet type carrier
541 ....Discrete spaced laminae on adhered carrier
542 .....Means serially presenting discrete base articles or separate portions of a single article
543 ...Indefinite or running length work
544 ....Means joining indefinite length work edge to edge
545 .....Means applying adhesively secured tape to seam
546 .....Means applying fluid adhesive to work edge
547 ....Means applying fluent adhesive or adhesive activator material between layers
548 .....At spaced areas
549 .....Plural indefinite length or running length workpieces
550 ......Fluid applied to nip between indefinite length webs
551 ......Fluid applied to plural workpieces
552 ....Means bringing articles into association with web
553 ....Discontinuous, spaced area, and/or patterned pressing
554 ....Webs of different width, longitudinally aligned
555 ....Progressive continuous bonding press (e.g., roll couples)
556 ...Means bringing discrete articles into assembled relationship
557 ....Plural lines and/or separate means assembling separate sandwiches
558 ....All articles from single source only
559 ....At least three articles
560 .....At least two applied side by side to common base
561 ......Plural ranks
562 ......Sheet form common base
563 .....Stacked serially
564 ....Magazine stack directly contacting separate work
565 .....Magazine movable to work
566 ....Means simultaneously conveying plural articles from a single source and serially presenting them to an assembly station
567 .....Turret or rotary drum-type conveyer
568 ......For flexible sheets
569 ....Means separating articles from bulk source
570 .....Stacked sheet source
571 ......Rotary or pivoted picker
572 ......Translating picker
573 ..Magazine stack directly contacting work
574 ..Work traversing type and/or means applying work to wall or static structure
575 ...With liquid applying means
576 ...Grip or clamp for web end
577 ...Implement carried web supply
578 ..With liquid adhesive or adhesive activator applying means
579 .With handle or handgrip
580 .Presses or press platen structures per se
580.1 ..With sonic or ultrasonic means
580.2 ...Specified structure of sonic or ultrasonic work contacting surface
581 ..Relieved or configured pressing face
582 ...Rotary
583.1 ..Heated
583.2 ...Impulse heating
583.3 ...With significantly flexible platen
583.4 ...Nonuniform heating
583.5 ...With endless belt
583.6 ...C-frame type
583.7 ....Electric heating
583.8 ...Hinged platen
583.9 ....Electric heating
583.91 ...Plural adjustable pressure points
584 DELAMINATING APPARATUS
598 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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901 PRINTED CIRCUIT MANUFACTURE INCLUDING ETCHING
902 .On organic base
903 BRIGHT POLISHING BY ETCHING
904 ETCHING RESIST COMPOSITIONS
905 PRINTING PLATE-MAKING INCLUDING ETCHING
906 OFF-DRUM MANUFACTURE OF TIRE FABRIC OR PLY
907 .Including assembly of bias-cut fabric
908 LAMINATING SHEET TO ENTIRE EDGE OF BLOCK AND BOTH ADJACENT OPPOSITE SURFACES, E.G., BOOKBINDING, ETC.
909 APPARATUS FOR APPLYING NEW TREAD TO USED TIRE CASING, E.G., RETREADING, RECAPPING, ETC.
910 BONDING TIRE CORD AND ELASTOMER: IMPROVED ADHESIVE SYSTEM

911	Single crystal formation from a crucible of the same material as the single crystal
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	DIGESTS
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DIG 1	Labelling flat, essentially rigid surfaces (1/00)
DIG 2	.Affixing labels to one flat surface of articles, e.g., of packages, of flat bands (1/02)
DIG 3	.Affixing labels, e.g., wrap-around labels, to two or more flat surfaces of a polyhedral article (1/04)
DIG 4	..Of a box, e.g., cigarette box (1/06)
DIG 5	Labelling other than flat surfaces (3/00)
DIG 6	.Affixing labels to elongated objects, e.g., wires, cables, bars, tubes (3/02)
DIG 7	..Applying bands or labels to cigars or cigarettes (3/04)
DIG 8	.Affixing labels to short rigid containers (3/06)
DIG 9	..To container bodies (3/08)
DIG 10	...The container being positioned for labelling with its centerline horizontal (3/10)
DIG 11	....By rolling the labels onto cylindrical containers, e.g., bottles (3/12)
DIG 12	...The container being positioned for labelling with its centerline vertical (3/14)
DIG 13	....By rolling the labels onto cylindrical containers, e.g., bottles (3/16)
DIG 14	..To container necks (3/18)
DIG 15	..To bottle closures (3/20)
DIG 16	...Affixing metal foil coverings (3/22)
DIG 17	...Affixing labels indicating original state of bottle snap or screw closure (3/24)
DIG 18	.Affixing labels to nonrigid containers, e.g., bottles made of polyethylene, boxes to be inflated by internal air pressure prior to labelling (3/26)
DIG 19	Labelling fabrics or comparable materials or articles with deformable surface,e.g., paper, fabric rolls, stockings, shoes (5/00)
DIG 20	.Using adhesives (5/02)
DIG 21	..Thermo-activatable adhesives (5/04)
DIG 22	.Using staples (5/06)
DIG 23	Affixing tags (7/00)
DIG 24	Details of labelling machines or apparatus (9/00)
DIG 25	.Devices for moving articles, e.g., containers, past labelling station (9/02)
DIG 26	..Having means for rotating the articles (9/04)
DIG 27	.Devices for presenting articles in predetermined attitude or position at labelling station (9/06)
DIG 28	.Label feeding (9/08)
DIG 29	..Label magazines (9/10)
DIG 30	..Removing separate labels from stacks (9/12)
DIG 31	...By vacuum (9/14)
DIG 32	...By wetting devices (9/16)
DIG 33	..Label feeding from strips, e.g., from rolls (9/18)
DIG 34	.Gluing the labels or articles (9/20)
DIG 35	..By wetting (9/22)
DIG 36	..By heat (9/24)
DIG 37	.Devices for applying labels (9/26)
DIG 38	..Air-blast devices (9/28)
DIG 39	..Rollers (9/30)
DIG 40	...Cooperating rollers between which articles and labels are fed (9/32)
DIG 41	..Flexible bands (9/34)
DIG 42	..Wipers; pressers (9/36)
DIG 43	.Label cooling or drying (9/38)
DIG 44	.Controls; safety devices (9/40)
DIG 45	..Label feed control (9/42)
DIG 46	...By special means responsive to marks on labels or articles (9/44)
DIG 47	.Applying date marks, code marks, or the like to the label during labelling (9/46)
DIG 48	Manually controlled or manually operable label dispensers, e.g., modified for the application of labels to articles (11/00)
DIG 49	.Having printing equipment (11/02)
DIG 50	.Having means for moistening the labels (11/04)
DIG 51	.Having means for heating thermoactivatable labels (11/06
DIG 61	Aluminum and its compounds
DIG 62	Levitation and reduced gravity
DIG 63	Rare earths and compounds
DIG 64	Silicon and compounds
DIG 65	Cutting, twinning, seed material or orientation
DIG 66	Gettering
DIG 67	Germanium and compounds
DIG 68	Diamonds and carbon
DIG 69	Tungsten and compounds
DIG 70	IIIA (except aluminum) and IIIA, VA compounds
DIG 71	Alkali metals and compounds
DIG 72	Tellurium, sulfur, selenium and compounds
DIG 73	Annealing, heat treating
DIG 74	Iron and compounds
DIG 75	Titanium and compounds
DIG 76	Copper and compounds
DIG 77	Zinc and compounds
DIG 78	Alkaline earth metals and compounds
DIG 79	Bismuth and compounds
DIG 80	Laser
DIG 81	Arsenic and compounds
DIG 82	Mercury and compounds
DIG 83	Special crucible material or treatment
DIG 84	Web or cage crystal growth
DIG 85	Lead and its compounds
DIG 86	Boron and its compounds
DIG 87	Niobium, tantalum and their compounds
DIG 88	Crystal sheet, ribbon or tube
DIG 89	Special atmosphere
DIG 90	Reflux, vapor barrier
DIG 91	Vibration
DIG 92	Cadmium and its compounds excluding tellurium, sulfur and selenium
DIG 93	Liquid seal or bellows
DIG 94	Antimony and its compounds
DIG 95	Zirconium and its compounds
DIG 96	Downward pull
DIG 97	Horizontal seed pull
DIG 98	Seed or rod holders
DIG 99	Nitrides
DIG 100	Nickel and its compounds
DIG 101	Gold, silver or platinum and their compounds
DIG 102	Electron beam heat
DIG 103	Molecular beam
DIG 104	ALUMINUM WITH 3 AND/OR 4 COMPOUNDS
DIG 105	PARTIAL MELTING
DIG 106	VANADIUM AND ITS COMPOUNDS
DIG 107	MOLYBDENUM AND ITS COMPOUNDS
DIG 108	GEL
DIG 109	URANIUM AND ITS COMPOUNDS
DIG 110	TIN AND ITS COMPOUNDS
DIG 111	ETCHING

DIG 112 WHISKER GROWTH
DIG 113 ORGANIC
DIG 114 SCANDIUM
DIG 115 REPLENISHING OF MELT IN SINGLE CRYSTAL GROWING

CLASS 157 WHEELWRIGHT MACHINES

1	MISCELLANEOUS
1.1	RUBBER TIRE MOUNTING AND/OR DEMOUNTING APPARATUS
1.11	.With carrier
1.13	.For divided tire bands
1.14	..Wire tightening and/or securing
1.17	.For collapsing or shifting tire axially
1.2	..Circumferentially distributed force
1.21	...Radially inwardly directed (e.g., tubeless tire compressors)
1.22	..Circumferentially traveling
1.24	...Pedestal type
1.26	..Pushing elements on opposed faces of tire and/or rim
1.28	...Both on tire
1.3	..Single bar pry or lever type
1.33	.For tire retaining ring
1.35	.For split rims (i.e., rim breakers)
1.36	..Three or more rim engaging elements
1.37	...Including link or lever carried abutment
1.38	...Plural force-mechanisms
1.39	....Individually operated
1.4	.....Auxiliary type
1.41	....Axial toggles or coplanar cam
1.42	..Circumferentially divided engaging element type
1.43	..Two hand lever type
1.44	..Plural force-mechanisms
1.45	..Screw and nut actuated
1.46	..Sliding or rack actuated members
1.47	..Pivoted linkage movable in tire plane
1.48	...Two link type
1.49	...Single link or pry type
1.5	FOR METALLIC SPOKED WHEELS
1.55	.Spoke securing
2	RIM COMPRESSORS
3	SPOKE SETTERS
4	.Work holders and guides
5	TIRE SETTERS
7	.Trestles and tanks
8	TIRE TIGHTENERS
9	.Felly expanders
10	..Spoke clamping
11	TIRE REMOVERS
12	SPOKE EXTRACTORS
13	GROOVING, SLITTING AND/OR LACERATING OF RUBBER TIRES
14	WHEEL HOLDING MEANS
15	.Including inflatable wheel gripping element
16	.Including relatively movable wheel gripping jaws
17	..With screw-nut actuating device
18	..With cam or wedge type actuating device
19	.Means mounted to swing between locations
20	.Means rotates around relatively fixed axis
21	.Adjustable or adaptable for different sizes or shapes

CLASS 159 CONCENTRATING EVAPORATORS

DECEMBER 1990

2.1	SUPERHEATING AND PRESSURE RELEASE
2.2	.With extruder
2.3	..Multistage
3	SPRAY TYPE
4.01	.Gaseous current
4.02	..Combustion product gas
4.03	..Antibridging
4.04	..Countercurrent
4.05	..Intermediate gas outlet or inlet
4.06	..Bottom sprayer
4.07	..Horizontial sprayer
4.08	..Impinging jets
4.09	..Multistaging
4.1	..Heat recovery
4.2	..Spinning sprayer
4.3	..Rotary drum with sprayer
4.4	..Steam drying or atomizing
5	FILM TYPE
6.1	.Centrifugal
6.2	..Wiped film
6.3	...Horizontally
7	.Moving-film support
8	..Gaseous current
9.1	...Rotary drum or disk
9.2	....Treated material inside drum
10	....Exterior surface
11.1	.Rotary drum or disk
11.2	..Internal film
11.3	...Rotary disk
12	..Inclosing chamber
13.1	.Moving film
13.2	..Contacting tube
13.3	...Outside of tube
13.4	..With gas wiping
14	..Climbing
15	..Zigzag
16.1	GASEOUS BLAST OR CURRENT
16.2	.Submerged combustion
16.3	.Steam injection
17.1	MULTIPLE EFFECTS
17.2	.Parallel fluid flow
17.3	.Variant multistaging
17.4	.Contiguous evaporators
18	.Superimposed
19	.Combined closed and open
20.1	.Variable or counter flow
20.2	..With effect switching means
21	COMBINED CLOSED AND OPEN PANS
22	CLOSED EVAPORATING CHAMBERS
23	.Indirectly heated
24.1	..Regenerative
24.2	...Heat recovery or regeneration
24.3	....Thermocompression
25.1	..Rotatable agitator or coil
25.2	...Vertical axis agitator
26.1	..Heated tube
26.2	...Inclined
27.1	...Vertical
27.2	....Detached separator
27.3	....Multieffect in one casing
27.4	....Downflow
27.5	....Floating calandria
28.1	..Heating elements
28.2	...Baffled
28.3	...Spur tubes
28.4	...Coils
28.5	...Tublar inserts
28.6	...Plate-type evaporator
29	.Directly heated
30	.Samplers
31	.Liquid traps or separators
32	OPEN PANS
33	.With rakes
34	.Tiltable, removable, or portable
35	.Interposed liquid receptacle
36	.Steam and furnace heated
37	.Steam heated
38	.Furnace heated
39	..Liquid tubes in flue
40	..Flues in pan
41	..With dampers
42	STRAINERS OR SKIMMERS
43.1	FLUID FEED OR DISCHARGE DEVICES
43.2	.With alternating operating means
44	.Automatic
45	APPARATUS FOR GRAINING AND SEPARATING CRYSTALS
46	PRELIMINARY HEATERS AND HEAT ECONOMIZERS
47.1	PROCESS
47.2	.Involving urea
47.3	.Involving waste liquid
48.1	.Spraying
48.2	..Producing liquid product
49	.Film
1.1	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
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900	USING VIBRATORY FORCE
901	PROMOTING CIRCULATION
902	USING NATURAL HEAT
903	.Solar
904	..Floating solar still
905	SEWAGE TREATMENT
906	WICK
	******************************
	DIGESTS
	******************************
DIG 1	Electric heat
DIG 2	Entrainment
DIG 3	Fluidized bed
DIG 4	Foam
DIG 5	Freezing
DIG 6	Infrared
DIG 7	Magnetic coupling
DIG 8	Multieffect or multistage
DIG 9	Two liquids dried simultaneously
DIG 10	Organic
DIG 11	Biologicals
DIG 12	Radioactive
DIG 13	Scale
DIG 14	Soap
DIG 15	Special material
DIG 16	Vacuum
DIG 17	Two liquids
DIG 18	Accumulator
DIG 19	Acid
DIG 20	Additive
DIG 21	Coating
DIG 22	Condensate flashing
DIG 23	Cooling
DIG 24	Critical
DIG 25	Decant, press, centrifuge
DIG 26	Electric field
DIG 27	Micropores
DIG 28	Porous member
DIG 29	Pebble bed
DIG 30	Desuper heating
DIG 31	Deaeration
DIG 32	Indirect heat exchange
DIG 33	Two liquids, one a heat carrier
DIG 34	Caustic
DIG 35	Viewports, peepsights and sightglasses
DIG 36	Rabbled hearth
DIG 37	Ported
DIG 38	Seed
DIG 39	Power plant
DIG 40	Pumps
DIG 41	Removable units
DIG 42	Seals

CLASS 160 CLOSURES, PARTITIONS AND PANELS, FLEXIBLE AND PORTABLE

DECEMBER 1990

1	AUTOMATIC CONTROL
2	.Non-thermal automatic initiator
3	..Force initiated
4	...Weight
5	..Weather and/or light initiated
6	.Non-fusible thermal initiator
7	.With starting or driving means
8	.With retarding means
9	.With releasing means for operator and/or counterbalance
10	WITH SIGNAL, INDICATOR OR SIGN
11	WITH WIPER OR CLEANER
12	WITH INSECT EXITS
13	.Applied to slidably interconnected frames or panels
14	.Zigzag or crimped surface
15	.Spaced or overlapping sections
16	.Conical, prismatic or other protuberances
17	.Bar, grooved or apertured
19	WITH HOOD, CANOPY, SHIELD STORAGE CHAMBER OR OUTRIGGED RIGID PANEL
20	.Outrigged rigid panel, with flexible panel sides
21	.Changeable size
22	.For outrigged flexible panels (i.e., awnings)
23.1	.For roll type
24	..Portable
25	..With plural flexible or portable panels
26	..Casement housed roll
27	...Fabric free edge connected to movable closure
28	..Fabric free edge connected to movable closure
29	..Movable hood, canopy, shield, storage chamber or outrigged rigid panel
30	...Mounted upon movable closure
31	..Combined with frame or demountable side guides
32	.For plural strip, slat or panel and/or pleating type
33	..Casement housed
34	..Venetian blind and/or collapsing
35	..Pleating or edge hinged gathering type
36	..Edge hinged, slidably mounted
37	.Slidable into storage chamber
38	.Structure
39	..Extensible
40	WITH FILLER AND FILLER TYPE
41	.For roll type
42	..Between outrigged roll type
43	.Between parallel plane, relatively slidable panels
44	WITH LIQUID SUPPLYING AND/OR DRAINING MEANS
45	WITH OUTRIGGERS (I.E., AWNINGS)
46	.Floor or ground engaging outrigger
47	.With groove engaging mounting means
48	.With rigid closure
49	..Movable rigid closure related
50	.With non-outrigged flexible panel
51	..Convertible
52	..With non-outrigged roll type
53	.Umbrella type
54	.Plural outrigged type
55	..One roll type
56	.Non-planar fabric arrangements
57	..Planar surface, with sides
58.1	...Sides foldable, rollable, or collapsible
59	.Multi-positional
60	.Convertible
61	.Plural strip, slat or panel type
62	..Telescopic and/or collapsible
63	.With fabric having diverse areas
64	.Adjustable size
65	.With braced outrigger
66	.Roll type
67	..Shiftable position roll
68	..Fabric free edge connected operator
69	..Multi-part outrigger
70	...Two part, intermediate pivot
71	...Telescopic
72	..Swinging outriggers
73	...With pivotal motion preventing means
74	...Sliding pivot
75	..Sliding outriggers
76	.With fabric frame
77	..Pivoted
78	.Multi-part outrigger
79	..Two part, intermediate pivot
80	..Telescopic
81	.Swinging
82	..With sliding pivot
83.1	.Rigid or nonmovable
84.1	PLEATING TYPE
84.2	.Lazy-tong links pivot about axes transverse to panel
84.3	.Lazy-tong links pivot about axes parallel to panel
85	PLURAL RUN TYPE
86	.Endless
87	PLURAL AND/OR WITH RIGID CLOSURE
88	.Non-planar, non-parallel arrangement
89	.Diverse types
90	..With rigid closure
91	...Diverse rigid closures
92	...Swinging rigid closures
93	....Intermediate axis
94	.....With opposite, parallel, offset flexible panels
95	....Flexible or portable panel related to rigid closure operating or fastening means
96	....Facing flexible or portable panel and mounted for optional or conjoint movement
97	....Flexible or portable panel complementary to form complete closure
98	...Roll type flexible panel
99	....Connected to slidable rigid closure
100	.....Fabric free edge connected closure
101	...Flexible panel between slidable parallel plane rigid closures
102	...Flexible panel connected to and moved by slidable rigid closure
103	...Flexible or portable panel related to rigid closure operating or fastening means
104	...Grille or shutter type
105	...Flexible panel removably mounted in slidable rigid closure guides
106	...Removably mounted over fabric in frame
107	...Plural strip, slat or panel type
108	..Roll and hanging or drape type only
109	...Shiftable position
110	....With extensible pole, roller, bar or support therefor
111	....Vertically slidable
112	...With extensible pole, roller, bar or support therefor
113	.Plural strip, slat or panel assemblies
114	..Non-planar
115	..Multiple section unit
116	...One closing passage through another
117	...Mounted on opposite sides of single opening
118	...Track guided
119	..Mounted on opposite sides of single support
120	.Roll type
121.1	..Single roll

	PLURAL AND/OR WITH RIGID CLOSURE
	.Roll type
122	..Differently directed fabrics
123	.Hanging or draped type
124	..Side-by-side arranged, on single pole or or track
125	..Shiftable pole
126	..Laterally overlapping fabrics and/or co-elevational parallel tracks
127	COMBINED
128	CONVERTIBLE
129	.Plural movably interconnected strip, slat or panel type
130	PLURAL STRIP, SLAT OR PANEL TYPE
131	.Longitudinally crooked strip, slat or panel
132	..Bow or U-shape, pivoted together at ends
133	.Roll type
134	.Fan type
135	.Portable
136	.Parallelogram type
137	..Plural differently movable parallelogram section with a common side
138	..With operator
139	...Unit collapsing only
140	....Diverse types of operators
141	.....One operator a spring
142	.....One operator a weight
143	......Weighted parallelogram element extension
144	....Spring
145	.....In brace
146	....Weight
147	.....Strand carried
148	.....Weighted parallelogram element extension
149	....With gearing
150	....With strand and pulley
151	....Unit carried operator
152	..With means to hold unit in partially collapsed or collapsed position
153	...Combined tension and compression means
154	...Pivoted compression bar
155	....Friction catch
156	...Tension members
157	....Flexible member foreshortened at end
158	....Friction catch
159	..Unit collapsing on guides
160	..Unit pivoted to support
161	..Unit structures
162	...With additional set of plural strips, slats or panels
163	....Plural diverse additional sets
164	....Additional set composed of interconnected strips, slats or panels
165	....Pivots parallel to unit plane
166.1	.Venetian blind type
167	..Changeable position assemblies
168.1	..With accumulating means
169	...Accumlated at stationary end
170	...Drum or roller wound strand
171	....Axially traversed drum or roller
172	...With side guides
173	...Units and subcombinations thereof
174	..Adjustable strip, slat or panel angle
175	...With latch or detent
176.1	...With angle adjusting means
177	...Units and subcombinations thereof
178.1	..Subcombination or structure thereof
178.2	...Cord lock
178.3	...Slat support (e.g., tape ladder)
179	.Plural fabrics in a single frame
180	.One closing opening in another
181	.With mounting or supporting means
182	..Removable frame type support
183	..Non-planar non-parallel arrangement on support
184	..Strip, slat or panel not interconnected for relative motion
185	..Strip, slat or panel interconnected for diverse relative motions
186	..Arranged to provide plural passageways on opening
187	...Strip, slat or panel pivotally interconnected
188	..With operating means
189	...Counterbalance and additional operator
190	...Counterbalance only
191	....Spring
192	...Spring
193	...Strand
194	..Movably mounted track
195	...Pivotally mounted
196.1	..Unit hung from horizontal track
197	...Strips, slats or panels slidably interconnected
198	...Track parallel to axis of interconnection pivots
199	...Strip, slat or panel constrained for pivotal folding
200	...With independently movable strip, slat or panel
201	..Track guided
202	...Strips, slats or panels slidably interconnected
203	...Unit pivoted to support, pivot displaced from unit plane
204	...Track parallel to interconnection pivot axis
205	...With independently movable strip, slat or panel
206	...Strip, slat or panel constrained for pivotal folding
207	....Vertical track
208	...A single strip, slat or panel connected to track
209	...With means to force against mount or support
210	..Pivotally mounted unit
211	...Strips, slats or panels slidably interconnected
212	...Support pivot at angle to interconnection pivot axis
213	...Constrained for pivotal folding
214	..Slidably mounted unit
215	..Removable unit
216	...Strip, slat or panel slidably interconnected
217	...Pivotal interconnection necessary to removal and insertion
218	.Movably interconnected
219	..Unit having diverse areas
220	..Interconnected for plural relative motions
221	...Doubly extensible by sliding only
222	..Slidably interconnected
223	...Plural individually interconnected strips, slats or panels
224	...With operator and/or anti-friction means
225	...With relative slidable motion preventing means
226	...Embracing type
227	....Integral embracing means
228	...Tongue, bead, bolt or dog into groove or slot
229.1	..Edge-to-edge interconnected
230	...Single covering fabric
231.1	...Interconnected by strand, fabric, rubber, or plastic
231.2	....Interconnected by rubber or plastic

	PLURAL STRIP, SLAT OR PANEL TYPE
	.Movably interconnected
	..Edge-to-edge interconnected
232	...Hollow, filled or covered elements
233	...With relative pivotal motion preventing means
234	....Acting to keep unit planar only
235	...By curled or bent side edges
236	.Strip or slat structure
237	WITH FABRIC HAVING DIVERSE AREAS
238	ROLL TYPE
239	.Framed
240	..Adjustable size frame
241	.Plural roll
242	.Shiftable position roll
243	..Roll translated for winding or unwinding operation only
244	...Fabric free edge adjustable
245	...Spring roller
246	..Straight line non-axial translation in fabric plane only
247	...Center operated, roll support
248	...Rack and pinion operated
249	...One side, non-strand operated
250	...Extensible roller and/or roll support
251	...Step-by-step
252	...Strand shifted
253	....Pulley or drum lift on roller
254	....Winding drum
255	.....With roll guide
256	....Roll intermediate guides for translating strands
257	....With position holding means
258	.....Strand holder
259	......Roll guided
260	....Roll guided
261	...With elevator rod
262	.Crooked roll, non-cylindrical or flexible roller
263	.Adjustable dimension roll
264	.With fabric reinforcements
265	.With fabric free edge connected operator
266	.With guides or fabric edge holders
267.1	..Fabric side edge and stick
268.1	..Fabric side edge
269	...Clamping
270	...Slot or channel type
271	....Fabric receiving
272	.....Guide mounted in a channel
273.1	.....With interlock between fabric and guide
274	..Stick guided only
275	...With positive stop or detent
276	....Reciprocable detent
277	...Guides of bar or strand form
278	....With release mechanism
279	....Guide strand axially through or into stick
280	...Leading edge holders movable axially of stick
281	....With release mechanism
282	.....With guide engaging rollers and friction elements
283	......And roll brake
284	.....With guide engaging rollers
285	....With guide engaging rollers and friction elements
286	.....And roll brake
287	....With guide engaging rollers
288	....With axially acting friction elements
289	...With friction elements
290.1	.With fabric leading edge fastening means
291	.With brake or stop
292	..Plural
293.1	..Limit of travel
294	...For spring operated roller
295	....Screw operated brake or stop
296	..Speed limiting
297	..Ball or roller, form brake or stop
298	..Friction
299	...For spring operated roller
300	..Pawl or detent
301	...For spring operated roller
302	....Spring urged pawl or detent
303	....Pawl or detent mounted off the roller
304.1	....Sliding pawl or detent
305	..For spring operated roll
306	...With means to prevent uncoiling of spring on removal from support
307	..For strand operated roll
308	...Strand operated brake or stop
309	.With rotating means
310	..Electric operation or control
311	..Motor or fluid pressure control
312	..Plural, diverse
313	..Spring
314	...External of roll
315	...With winding or tensioning means
316	...Nested helical springs
317	...Plural
318	...With spring anchor
319	..Strand
320	...With weight or handgrip
321	...Endless
322	...With compensating and shock absorbing spring
323.1	.With supporting or journaling means or with roller end structure
324	..With pintle clamping or holding means
325	..With pintle journaled in rolled
326	..With roller gudgeons
327	NON-FRAMED PLURAL EDGED HELD FABRIC
328	.With fabric stretching means
329	..Resilient stretching means
330	HANGING OR DRAPE TYPE
331	.Motor operating means or electric or fluid pressure control
332	.Chain, cable and/or strand type
333	.Shiftable position pole
334	..Plural motions
335	..Swingable
336	...Vertical swing
337	...With pole operating means
338	..Vertically shiftable
339	...With strand operator
340	.With fabric operating means
341	..Laterally gathered fabric
342	...Lazy tongs
343	...Spring or screw
344	...Strand
345	....Hollow or slotted track
346	.....With anti-friction means
347	....With anti-friction means
348	.With pleating means
349.1	.With bottom or intermediate holding, weighting, or draping means
349.2	..Intermediate holding means
350	.Portable
351	PORTABLE
352	NON-PLANAR (E.G., THREE DIMENSION)
353	WITH PLURAL FRAMES
354	WITH NON-RIGID FRAME OR BORDER ELEMENTS
368.1	WITH MOUNTING, FASTENING, OR SUPPORTING MEANS
368.2	.Shiftable support for overlying shield, e.g., pillow sham type
369	.For framed type
370	.With guide for strand
370.1	.Grain car type temporary closure
370.2	.Automobile windshield weather protector or glare shield
371	FRAMED TYPE

	FRAMED TYPE
372	.Adjustable frame size
373	..With excess or extensible fabric
374	..Double extensible
374.1	...Expandable at corner joint, e.g., artist's canvas stretcher frame
375	..Shiftable edge bar section only
376	...With spring thrust
377	.Collapsible or knockdown
378	.Fabric stretching
379	.With intermediate reinforcing bars, members or braces
380	.Two superimposed frame elements, fabric clamping
381	.With corner structure
382	FABRIC FASTENING MEANS
383	.To elongated element
384	..Additional things fastened
385	..With modified fabric
386	...Plural layers in panel portion
387	...With fabric hem
388	...With loops
389	...With strips or strands
390	...With fabric openings or pockets
391	..Longitudinally divided or with fabric receiving externally exposed channel or groove
392	...Internal fastener larger than groove or channel fabric exit
393	....With end cap and/or sleeve
394	....Sheet material elongated element
395	...Elongated fastener in channel or groove
396	....With end cap and/or sleeve
397	....Sheet material elongated element
398	...With pointed, piercing and/or hook elements
399	...Externally applied clamp, clasp, sleeve or end cap
400	..Sheet or strand
401	..By sleeve and/or end cap
402	..By externally applied clamp or clasp
403	..By elongated fastener
404	..By pointed, piercing and/or hook elements
405	MISCELLANEOUS AND PROCESSES OF USING
	******************************
	CROSS-REFERENCE ART COLLECTIONS
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900	VERTICAL TYPE VENETIAN BLIND
901	LAZY-TONG CONNECTED PLURAL STRIPS, SLATS, OR PANELS
902	VENETIAN BLIND TYPE BRACKET MEANS
903	ROLL TYPE BRACKET MEANS
904	ELECTRIC OR PNEUMATIC AWNING OPERATOR
905	LAZY-TONG-LINK AWNING OPERATOR
906	SCREW-THREADED AWNING OPERATOR
907	SPRING (OTHER THAN SPRING ROLLER) AWNING OPERATOR
908	STRAND AWNING OPERATOR
909	.ENDLESS STRAND
910	.DRUM WOUND STRAND
911	WORM GEAR AWNING OPERATOR
912	RACK AND PINION AWNING OPERATOR
913	GEAR AWNING OPERATOR
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	DIGESTS
	******************************
DIG 1	Auto radiator screens
DIG 2	Auto screens and miscellaneous
DIG 3	Auto visors and glare shields
DIG 4	Auto side awnings
DIG 5	Awning head and front bars
DIG 6	Bath curtains
DIG 7	Fabric
DIG 8	Flexible door
DIG 9	Fireplace screen
DIG 10	Roll screen
DIG 11	Roll screen idler roll
DIG 12	Overlapping, on windows
DIG 13	Suction cup
DIG 14	Step joints
DIG 15	Web-to-tube fasteners
DIG 16	Magnetic
DIG 17	Venetian blinds, motor driven
DIG 18	Zipper
DIG 19	Storm sash

CLASS 162 PAPER MAKING AND FIBER LIBERATION

1	PROCESSES OF CHEMICAL LIBERATION, RECOVERY OR PURIFICATION OF NATURAL CELLULOSE OR FIBROUS MATERIAL
2	.Animal fibers
3	.Mineral fibers
4	.Waste paper or textile waste
5	..With organic agent
6	..With chlorine, chlorine compounds, oxygen, ozone, or per-compounds
7	..With sulfur or sulfur compound
8	..With alkali metal, alkaline earth metal, or ammonium compound
9	.With chemical or physical modification of liberated fiber
10	.With non-fiber material added to product
11	..Fiber supplied constituent
12	..Added to web or article
13	.With formation of web or article
14	.Including recovery of organic by-product
15	..From digester relief gases
16	..From waste liquor
17	.Continuous chemical treatment or continuous charging or discharging
18	..With compression, squeezing or compacting of fibrous material during charging
19	..Plural diverse stage treatment
20	.With decortication or mechanical preparation of textile fibers
21	.Defibration by projection or explosion
22	..With chemical other than water or steam
23	.Mechanical defibration in the presence of heated gas or gas under pressure
24	.Chemical treatment after start or completion of mechanical defibration
25	..With additional chemical treatment before start of defibration
26	.Simultaneous mechanical defibration and chemical treatment
27	.Mechanical defibration of logs or blocks after chemical treatment
28	.With plural or specified mechanical defibering step
29	.With regeneration, reclamation, reuse, recycling or destruction of digestion fluid
30.1	..With destruction of organic ingredient in or smelting of liquor
30.11	...Treatment of kraft pulping chemicals
31	...Flames combustion
32	...Liquor from digestion using organic compound or including element other than Na, Ca, Mg, O, C, H or S
33	...With mixing of liquors from different digestions
34	...Plural diverse digestion of same fibrous material
35	...Residue converted into liquor different from original liquor
36	...Sulfur dioxide or sulfite containing spent liquor
37	..Digestion fluid reused on different fibrous materials
38	...With addition of chemicals prior to reuse
39	....In digester
40	...Without treatment or modification
41	..Recirculation (includes separation from fibers)
42	...With treatment of fluids during recirculation
43	....Removal and/or separation of portion of recirculating fluid
44	.....With recombing
45	....With addition of chemicals to recirculating fluid
46	...Steam only
47	.With heat recovery
48	.With cleaning, preserving or conditioning of apparatus
49	.With testing, sampling or analyzing
50	.Utilizing electrical or radiant energy
51	.Digestion odor control
52	.Charging and/or discharging fibrous material
53	.Vacuum treatment
54	.Freezing
55	.With classifying, separating or screening of pulp (solids from solids)
56	.With squeezing, compression, rubbing, kneading
57	.With agitation or forced circulation
58	..In rotating vessel
59	..Closed circuit circulation
60	.With washing
61	.Regulatory
62	..Concentration of chemicals
63	.Gas, vapor or mist contact
64	..Sulfur dioxide
65	..Oxygen, ozone or air
66	..Chlorine containing material
67	...Chlorine dioxide
68	..Steam only
69	.Non-continuous liquid phase
70	.Treatment with particular chemical
71	..Treatment of ground-wood or sawdust
72	..Organic
73	...With inorganic chlorine containing material
74	...Chlorine containing
75	...Fat, fatty oil or higher fatty acid
76	...Acids, salts or esters
77	...Alcohols or phenols
78	..Per-compound (e.g., peroxide, perborate)
79	..Heavy metal or aluminum containing
80	..Phosphorus, boron or silicon containing
81	..Nitrogen oxide, acid, or salt thereof
82	..Sulfur containing
83	...Sulfur dioxide or sulfite
84	....Plural diverse stage treatment
85	.....Chlorine containing material in at least one stage
86	.....Alkali metal, ammonium, alkaline earth metal or magnesium hydroxide or carbonate in at least one stage
87	..Chlorine containing
88	...Plural diverse stage treatments
89	....Alkali metal, ammoninum, alkaline earth metal or magnesium hydroxide or carbonate in at least one stage
90	..Alkali metal, ammonium, alkaline earth metal or magnesium hydroxide or carbonate
91	.Particular raw cellulosic materials
92	..Fossilized, (e.g., peat)
93	..Bark
94	..Bamboo
95	..Cotton fibers or linters
96	..Sugar cane, bagasse or cornstalks
97	..Cereal grasses or straws
98	..Bast (e.g., flax, hemp, jute, ramie, sisal)
99	..Non-wood
100	PROCESSES AND PRODUCTS
101	.Pore forming in situ (e.g., gas generation)
102	.Utilizing non-aqueous suspending medium
103	.Including solid non-waterlaid preform

	PROCESSES AND PRODUCTS
	.Including solid non-waterlaid preform
104	..Between separately formed webs
105	..Metallic
106	...Electrical conductor
107	..Glass
108	..Woven fabric or parallel strands
109	.Non-uniform, irregular or configured web or sheet
110	..Watermarking
111	..Creping and/or crinkling
112	...With coating and/or laminating
113	...With additional deformation
114	..By perforating
115	..By fluid pressure
116	..By configured forming mold
117	..Subsequent treatment by irregular or configured die
118	.With winding or roll forming
119	..With coating
120	..With cutting and/or removing material
121	..With heat
122	..With pressure
123	.Multi-layer waterlaid webs or sheets
124	..With non-fiber added between layers
125	..Layers of differnent properties
126	...Color
127	...Organic additive
128	...Inorganic additive
129	...Fiber
130	....Dimension
131	....Orientation
132	..Separately formed webs subsequently united
133	...On common felt or carrier (non-mold)
134	.With printing and/or variegated coloring
135	.With coating after drying
136	..With treatment subsequent to coating
137	..Plural layer coating
138	.Electrical or magnetic product characteristic
139	.Cigarette paper
140	.Safety, identification and fraud preventing paper
141	.Plural fiber containing
142	..Undigested cellulosic fiber
143	..Animal or proteinaceous
144	...Leather
145	..Mineral
146	..Synthetic (including chemically modified cellulose)
147	..Waste paper or textile waste
148	..Non-wood
149	..Fibers of different dimensions
150	.Undigested cellulosic fiber
151	.Animal or proteinaceous fiber
152	.Mineral fiber
153	..Asbestos
154	...With Portland cement
155	...With organic additive
156	..Glass
157.1	.Synthetic fiber (including chemically modified cellulose)
157.2	..Synthetic resin
157.3	...Polyamide, polyester or polyurethane
157.4	...Polymerized unsaturated compound
157.5	....Hydrocarbon or halohydrocarbon
157.6	..Cellulosic
157.7	...Regenerated cellulose, viscose or rayon
158	.Non-fiber additive
159	..Fire proofing agent
160	..Preservative or antioxidant
161	...Biocidal
162	..Coloring agent
163	..Fiber supplied constituent
164.1	..Synthetic resin
164.2	...Ion exchange resin or molecular sieve
164.3	...Epoxy containing reactant
164.4	...Silicon containing
164.5	...Sulfur containing
164.6	...Nitrogen containing
164.7	...Ester type
165	...Phenol-aldehyde
166	...Amine- or amide-aldehyde
167	....With additional organic reactant
168.1	...Polymerized unsaturated compound
168.2	....Nitrogen containing compound
168.3	.....Acrylamide containing
168.4	......Heterocyclic N or S or epoxy component
168.5	.....Heterocyclic N or S or epoxy component
168.6	....Hetero S or epoxy component
168.7	....Ester type
169	....From polyene compound
170	..Natural hydrocarbon gum (rubber)
171	..Bitumen
172	..Wax
173	..Hydrocarbon
174	..Protein
175	..Carbohydrate
176	...Cellulose (non-fibrous)
177	...Cellulose derivative (e.g., cellulose ester)
178	...Gum
179	..Fat, fatty oil, or higher fatty acid
180	..Natural resin
181.1	..Inorganic
181.2	...Metal salt other than silicate
181.3	....Sulfate or sulfite
181.4	...Metal oxide or hydroxide
181.5	....Metal other than alkali metal, magnesium, or alkaline earth metal
181.6	...Silicon containing additive other than clay
181.7	....Alkali metal silicate
181.8	...Clay
181.9	...Free metal or free carbon containing
182	..With preparatory chemical treatment of fiber
183	..Incorporation procedures
184	...Application to formed web
185	....Part added to furnish or pulp
186	....On mold
187	.Hydration and/or gelatinization
188	.Non-uniform internal structure
189	.Reclamation, salvage or reuse of materials
190	..White water
191	..Broke or trim
192	.Utilizing electrical or wave energy
193	.Lead strip forming and/or guiding
194	.With cutting and/or slitting
195	..Fluid deckle or shower
196	.With folding or twisting (e.g., roving)
197	.With stretching, tensioning, decurling, flexing or breaking
198	.With measuring, inspecting and/or testing
199	.Conditioning, preparing or repairing of apparatus
200	..Wire stringing
201	.Combined processes
202	.Running or indefinite length work forming and/or treating processes (e.g., web)
203	..Forming single web between opposed forming surfaces
204	..Subsequent treatment of formed web
205	...Pressure
206	....With heating and/or cooling
207	...Heating, cooling, gas or vapor contact
208	..Treatment of slurry on mold surface

PROCESSES AND PRODUCTS
.Running or indefinite length work forming and/or treating processes (e.g., web)
..Treatment of slurry on mold surface
209 ...Vibration or agitation
210 ...Pressure member
211 ..Inhibiting or restricting drainage through mold
212 ..Directing slurry into association with mold
213 ...Projecting or slinging stock
214 ...Pressure forming
215 ...Counter or transverse of mold movement
216 ...Mechanical treatment of slurry in head box or approach flow
217 ..Suction through mold
218 .Article forming processes (pulp molding)
219 ..Plural stage deposition
220 ..Pressing with flexible diaphragm
221 ..Treatment subsequent to removal from forming mold
222 ...Surface treatment
223 ...Reshaping (i.e., changing configuration)
224 ...Heat and/or mechanical pressure
225 ....Boards or sheets
226 ..Applying heat to work on forming mold
227 ..Applying mechanical pressure to work on forming mold
228 ..Accretion from bulk
229 ...Vibration of mold and/or slurry
230 ..Separation from mold or core
231 .Articles
232 APPARATUS
233 .Digester
234 ..With mechanical defibering means
235 ...Concurrent
236 ....Continuous
237 ..Continuous
238 ..Automatic control
239 ..With recovery means
240 ...With incinerator or evaporator
241 ..Plural
242 ..Combined
243 ..With pulp agitating or circulating means
244 ...Rotating digester
245 ..Removable basket or retaining means
246 ..Charging and/or discharging means (including blow pits)
247 ...Target, impact, explosion
248 ..Forced circulation or percolation of fluid only
249 ...With heating
250 ..Heating means
251 ..Strainers
252 .Automatic control
253 ..Of plural operations
254 ..Of stock working device
255 ..Of lead strip former and/or break sensing
256 ..Of mold movement
257 ...Transverse movement of wire
258 ..Of stock consistency
259 ..Of stock feed to forming device
260 ..Of product cutting device
261 .With beating, refining, and/or disintegrating means
262 .Electric controls or systems
263 .Measuring, testing, inspecting, indicating or illuminating
264 .White water or broke recovery, recirculation or treatment
265 .With coating or impregnating means (including printing)
266 ..Acting on product on mold
267 .Molding pulp and non-pulp insert or preform
268 ..Running or indefinite length work
269 .With product stacking or piling means
270 .Flexing, bending, straightening or decurling means
271 ..Sheet or web
272 .Apparatus repair, cleaning or conditioning
273 ..Wire changing and/or tensioning
274 ..Of porous or foraminous member (e.g., felt or mold)
275 ...Means applying fluid
276 ....To cylinder
277 ....Reciprocating
278 .....With suction means
279 ....And suction means
280 .Web creping or crinkling type
281 ..Cylinder and doctor
282 ...Circumferentially grooved cylinder
283 .With product winding or reeling means
284 ..Tube winding type
285 ...With tube cutting or slitting means
286 .With cutting, scoring, perforating or tearing
287 .With folding, rolling or twisting means
288 .Molding and burnishing means
289 .Running or indefinite length product forming and/or treating means
290 ..Molding and heat exchange means
291 ..Moving impermeable member applying stock to mold
292 ..Means flinging or projecting stock against mold
293 ..Product slides relative to molding surface (e.g., extrusion molding)
294 ..Mold intermittently moving relative to supply
295 ..Concave molding surface in longitudinal or transverse section
296 ..Irregular or configured molding surface (e.g., corrugated)
297 ..Pneumatic pressure or vacuum means acting directly on stock on mold surface
298 ..Plural separate streams of stock applied to mold
299 ...Longitudinally spaced points of application
300 ..Plural molds or plural spaced areas of application on a single mold
301 ...Common vat or stock feed
302 ....Tangent cylinder molds
303 ...Molds converge to unit web
304 ...Webs united on common carrier (e.g., felt)
305 ..Molds with subsequent separate pressing means
306 ..Means removing web product from molding surface
307 ...Blow off acting through mold
308 ..Means treating stock on molding surface
309 ...Irregular treating member or acting non-uniformly across web product
310 ....Fluid jet or suction means (e.g., shower deckle)
311 ...Submerged in supply
312 ...Solid treating member
313 ....Moving
314 .....Rotary
315 ..Means directing stock into contact with molding surface
316 ...On to under surface only of mold
317 ...Confined stock stream on forming surface (e.g., pressure forming)

	APPARATUS
	.Running or indefinite length product forming and/or treating means
	..Means directing stock into contact with molding surface
318	...Cylinder mold with endless forming belt about
319	....Superposed or lateral stock pool
320	...Superposed or lateral stock pool type
321	....Cylinder mold
322	...With diverse non-pulp material inlet
323	...Immersion vat type (e.g., cylinder machine vat)
324	....Stock flow direction reversing means
325	....Stock directed transversely of mold direction
326	....Stock applied at plural points on mold periphery
327	....Baffles diverting or directing flow against cylinder mold
328	.....Concentric with cylinder
329	......Adjustable to or from cylinder
330	....Fluid level control
331	....Side seals
332	....Mold hanging
333	.....Centerless
334	....Mask, deckle or apron
335	....With drain or suction means, for white water
336	...Flow box, slice, and/or approach flow
337	....Recirculation skimming or excess stock take-off
338	....Transversely crossing inlet into flow box
339	....Closed to atmosphere
340	.....Air cushion at above atmospheric pressure
341	....Vibratile or moving member treating stock
342	.....Immersed rotary member (e.g., rectifier roll)
343	....With vanes or pulp stream dividing means
344	....Slice
345	.....Plural, longitudinally spaced
346	.....Width adjustment
347	.....Flexible or pivoted
348	..Flexible endless band type mold (e.g., Fourdrinier)
349	...Concurrently moving back up
350	...Variable slope
351	...Means retarding or controlling drainage through mold
352	....Wire bottom scrappers or deflectors
353	...Mask, deckle, or apron
354	...Table structure
355	....Vibrating or shaking (e.g., shake frames)
356	.....Perpendicular to plane of wire
357	..Cylinder molds per se
358	..Press and felt
359	...With separate heated drying means
360.1	...Plural sequential pressings
361	..Solid means acting on formed web
362	...Marking or embossing
363	..Suction devices
364	...Systems
365	...Reciprocating
366	...Adjustable width
367	...Traveling suction face
368	....Rotary pervious cylinder
369	.....With non-rotating internal suction box
370	......Plural suction areas
371	......Box carried seals
372	.....Shell structure
373	...Roller face (suction not through rollers)
374	...Wear face structures and materials
375	.With heat exchange means
376	..Heated foraminous forming mold
377	..Heated die
378	...Contacting work on forming mold
379	....Plural successive heated dies
380	.Slurry supply conditioning or condition maintaining
381	.Combined
382	.Foraminous forming mold for discrete articles (pulp molding)
383	..Differing areas of porosity or of suction on single mold surface (including masking)
384	..Centrifugal
385	..With moving slurry supply container
386	..With handle or hand grip
387	..Accretion from bulk (i.e., immersed mold)
388	...Means moving mold through, into or out of slurry
389	....Relatively moving or separate mold and suction backup
390	....Plural and/or compartmented slurry container
391	....Rotary or swinging carrier
392	.....With compressor
393	....Reciprocating carrier
394	.....With compressor
395	....With compressor
396	..Press felting (i.e., pressure member acting on pulp on mold)
397	...Plural molds (cavities)
398	....Plate or sheet type (i.e., opposed flat platens)
399	...Plate or sheet type
400	....With cores (e.g., molding of apertured plates)
401	...Flexible diaphragm
402	....About foraminous core
403	...Contracting matrix
404	....About foraminous core
405	...Expanding and/or contracting core
406	...About foraminous core
407	..Mold charging means
408	...Pressure charging
409	...Plural discrete areas of mold
410	..Article ejecting
411	..Dipping molds per se
415	.Compressor
416	..Configured die (non-planar)

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DIGESTS

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DIG 1	Foraminous forming member
DIG 2	Chip soaking
DIG 3	Wetting agent
DIG 4	Pitch control
DIG 5	Alpha cellulose
DIG 6	Moisture and basic weight
DIG 7	Water collectors (e.g., save-alls)
DIG 8	Chlorine-containing liquid regeneration
DIG 9	Uses for paper making sludge
DIG 10	.Computer control of paper making variables
DIG 11	..Wet end paper making variables
DIG 12	Seasoning

CLASS 163 NEEDLE AND PIN MAKING

1	NEEDLE MAKING
2	.Knitting needles
3	..Tongued
4	.Rotary blank carrier
5	.Processes
6	PIN MAKING
7	.Safety pins

CLASS 164 METAL FOUNDING

DECEMBER 1990

1 PROCESS
2 .Printing plate (e.g., stereotype, etc.) forming
3 ..Utilizing pressure application
4.1 .With measuring, testing, inspecting, or condition determination
451 ..Of continuous or semicontinuous casting
452 ...And regulating an operation
453 ....Pouring
454 ....Product withdrawing
455 ....Cooling
456 ..During foundry sand treating or mold making
457 ..During feeding of metal to mold
458 ..During cooling of mold
5 .Including recycling of process material
6 .Shaping a forming surface (e.g., mold making, etc.)
7.1 ..Utilizing a vacuum during shaping
7.2 ...To apply consumable shielding film to shaping surface
8 ..Utilizing a frozen mercury pattern
9 ..Final product part or material, utilized in forming or included in shaping member
10 ...Utilizing plural preform bodies
11 ....Preform body embedded in or held by core member
12 ..Setting or hardening shaping surface by igniting mold surface or by utilizing a forced gaseous medium
13 ..Shaping plate type pattern
14 ..With subsequent coating of casting surface with cast product treating or release material
15 ..Shaping fluent material to form mold
16 ...Chemically reactive gas hardening of forming material
17 ...Shaping forming surface by mechanically removing material therefrom or subdividing forming surface to provide plural parts
18 ...Forming discrete molds sequentially
19 ...By spraying or slinging material against shaping surface
20 ....Particulate solid material
21 .....Resin containing
22 .....Employing compressed air as ram or piston to force sand against shaping surface
23 ...Composite, plural part or multilayered mold
24 ....Sequentially forming mold portions on same shaping member
516 .....Utilizing aqueous slurry material
517 ......With particular material for treating or perfecting casting
518 ......With particular binder
519 ......With particular refractory material
27 ....Shaping plural separable mold parts
28 .....Including shaping core member
29 .....Cope and drag sections
30 ....Positioning or maintaining position of core relative to the mold
31 .....Utilizing plural cores
32 ......Maintaining cores in spaced relationship within single cavity
33 ....Lining mold surface
34 ...With destruction of pattern to disassociate
35 ....Extracting pattern in liquid state
36 .....Utilizing fluent extracting medium
37 ...By compacting material against shaping surface
38 ....Diverse pressure applications
39 ....Vibrating or jolting during shaping
40 ....Utilizing pattern as compacting member
520 ...Utilizing particular mold materials
521 ....Self-hardenable molding material
522 ....Water soluble mold material
523 ....To perfect casting surface
524 ....To prevent casting oxidation
525 ....Particular binder material
526 .....Resin containing
527 ......And inorganic material
528 .....Inorganic material
529 ....Particular refractory material
44 ...Including pattern withdrawal
45 ..Pattern making
46 .Disposition of a gaseous or projected particulate molten material on a shaping surface
47 .Shaping liquid metal against a forming surface
459 ..Continuous or semicontinuous casting
460 ...Including product cutting or breaking
461 ...Forming a composite article
462 ...Forming filament, wire, or ribbon
463 ....Utilizing continuously advancing surface
464 ...Forming a hollow article
465 ....Using a core or mandrel
466 ...Utilizing magnetic force
467 ....Molten metal shaped by electromagnetic field
468 ....Applying electromagnetic stirring force to molten metal within mold or product
469 ...Utilizing electric arc or electron beam melting
470 ....Electric arc melting with slag or flux
471 ...Utilizing induction heating
472 ...Including lubricating of mold surface
473 ...Incorporating additional material or chemically reactive agent
474 ...Utilizing a vacuum
475 ...With inert or reducing gaseous atmosphere
476 ...With metal working
477 ...With diverse treatment
478 ...Having mold or product vibration or reciprocation
479 ...Having continuously advancing shaping surface
480 ....Utilizing roll couple mold
481 ....Utilizing endless plural belts
482 ....Utilizing wheel-band mold
483 ...Starting up or ending casting process
484 ...Specific product withdrawal
485 ...Specific mold or product cooling
486 ....Directly applying liquid coolant to product
487 .....Direct chill casting
488 ...Specific molten metal dispensing
489 ....Including flow stream deflection or other than vertical dispensing
490 .....Dispensing into horizontal mold
491 ...Adjusting mold size
48 ..Direct application of electrical or wave energy to work
492 ...To electrically heat work material
493 ....By electrical induction
494 ....By electron beam
495 ....By arc discharge
496 .....Composite article forming
497 .....With application of slag or flux
498 ...Utilizing magnetic energy
499 ....For stirring molten metal
500 ....In transporting molten metal
501 ...Utilizing sonic or supersonic wave energy

	PROCESS
	.Shaping liquid metal against a forming surface
53	..In situ reactive heating
54	...Composite article forming
55.1	..Incorporating addition or chemically reactive agent to metal casting material
56.1	...To scavenge
57.1	...Adding metal-containing material
58.1	....To produce casting having nonhomogenous composition
59.1	.....Utilizing preform body
61	..Utilizing a vacuum
62	...Applying diverse pressure
63	...To transport casting material to mold (e.g., vacuum forming, etc.)
65	...During introduction to metal
66.1	..Applying an inert or reducing gaseous atmosphere to work
67.1	...Atmosphere effected by chemical reaction
68.1	...While melting casting material
69.1	..With step of subdividing or removing material from product or preform (e.g., cutting, mechanically or by heat; sandblasting; chemical milling; etc.)
70.1	...With product trimming, cutting, or breaking prior to removal from mold
71.1	..With vibratory treatment of casting material
72	..Coating mold surface with a treating agent
74	...Gas producing coating
75	..With coating of preformed workpiece
76.1	..Combined
77	..Slush casting type
78	..Incorporating product dividing member
79	..Employing a pore producing agent
80	..Casting metal introduced into mold as a solid
81	..Utilizing a liquid shaping surface
90	..Forming product having interconnected movable parts
91	..Composite article forming
92.1	...Repairing or restoring article for use
93	...Co-molding diverse metals utilizing removable or fusible partition
94	...Sequential casting to form single product
95	....Different metals
96	.....Metals simultaneously molten
97	...Incorporating particulate material
98	...Shaping metal and uniting to a preform
99	....Co-molding diverse metals
100	....Including preconditioning preform
101	.....Chemical treatment
102	......By fluxing
103	.....Preheating
104	......Utilizing a liquid heat transfer agent
105	......Of preform in mold
106	....Cast metal reshapes preform
107	....Preform utilized to affect cast metal (e.g., to chill, to cap, etc.)
108	....Uniting plural preforms or spaced preform portions
109	.....Stacked planar lamina preforms
110	.....Discrete contacting preforms
111	....Preform particularly provided with means to provide interlock with cast metal
112	....Positioning or maintaining position of preform relative to mold surface
113	..Pressure forming
114	...By centrifugal force
115	....Plural constant speeds
116	....Tilting of axis of rotation
117	....Axially progressive casting
118	....Positive heating or cooling of mold
119	...By direct fluid pressure
120	...Pressure applied after introduction of metal
121	..Preconditioning of apparatus
122	..Controlling solidification (other than ambient cooling)
122.1	...Unidirectional solidification
122.2	....Single crystal formation
123	...By application of insulation to melt surface
124	...By direct application of flame or gas
125	...Localized or zone heat dissipation
126	....By utilizing a cooling liquid
127	....By utilizing a chill member
128	...By utilizing a cooling liquid
129	..Forming plural articles
130	...Sequentially
131	..Removing article from forming surface
132	...Core removal
133	..Introduction control or manipulation of charge
134	...Separation of unwanted component from melt
135	...Charge introduced as a plurality of streams
136	...By movement of mold, charger, or part thereof
137	..Assembling of mold parts
138	..Utilizing particular shaping surface material
139	APPARATUS FOR CASTING PRINTING PLATES (E.G., STEROTYPE, ETC.)
140	.Including means for severing or trimming product while associated with mold
141	.Including melting chamber
142	..Having valved gate
143	..Having pressure changing means
144	.Including positive mold heating or cooling means
145	.Including stripping means
146	INCLUDING MEANS TO DIRECTLY APPLY MAGNETIC FORCE TO WORK OR TO MANIPULATE OR HOLD SHAPING MEANS
147.1	.By electromagnetic means
502	..In continuous casting apparatus
503	...Electromagnetic mold
504	...Electromagnetic stirring means
148.1	..For holding or assembling shaping parts
149	MEANS LUBRICATING RELATIVELY MOVING AND CONTACTING APPARATUS PARTS
150	WITH SIGNAL, INDICATOR OR INSPECTION MEANS
151	.Pressure indicating means
152	WITH SAFETY CONTROL MEANS
153	.Apparatus safety means
154	CONTROL MEANS RESPONSIVE TO OR ACTUATED BY MEANS SENSING OR DETECTING A CONDITION OR VARIABLE (AUTOMATIC CONTROL)
155	.Control of feed material enroute to shaping area
449	..Responsive to material level in continuous casting apparatus
450	...Including electrode or float sensor
156	..Including electrode or float sensor responsive to material level

CONTROL MEANS RESPONSIVE TO OR ACTUATED BY MEANS SENSING OR DETECTING A CONDITION OR VARIABLE (AUTOMATIC CONTROL)

413 .Control of product withdrawal means in continuous casting apparatus

414 .Control of coolant applied to continuously cast product

157 WITH CONTROL MEANS RESPONSIVE TO INDEPENDENT TIMING MEANS

158 WITH POSITIVE CLEANING MEANS FOR APPARATUS

159 MEANS TO SHAPE A FORMING SURFACE

160.1 .Including means applying vacuum directly to mold material

160.2 ..And means to apply consumable shielding film to shaping surface

161 .Including means for sweeping or cutting forming surface

162 ..Means for shaping sprues or risers

163 ..Including rotating core bar

164 ..Rotatable pattern

165 .Shell type mold making machine

166 ..Including plural distinct forming stations

167 .And separate metal casting means

168 ..Including means for assembling shaped mold parts

169 .Including means for compacting particulate fluent mold materials

170 ..Flexible or deformable pressure means

171 ...Utilizing contiguous or independent diaphragms

172 ..Plural rammers

173 ...Fluid pressure actuated means

174 ..By die expressing

175 ..By centrifugal means

176 ..Pipe mold type forming means

177 ...By moving pattern to effect shaping

178 ....Rotating

179 .....Bead forming type

180 ..Having means for withdrawing forming surface from shaping means

181 ...Withdrawing station downstream of compacting station

182 ...Means withdrawing pattern plate intermediate cope and drag member

183 ...Having means for inverting pattern, flask, or shaping member

184 ....Means rotating press head and mold support

185 ....Rock-over type machine

186 ...Core making machine

187 ...Pattern member acting as compressing member

188 ....Including stripping plate

189 ...Utilizing vibrating means

190 ...Stripping plate

191 ...Drop pattern plate or support

192 ..Including means for feeding material by gravity

193 ...Means for delivering measured charge

194 ...Distinct feeding and compacting stations

195 ..Diverse means for applying pressure forces

196 ...Vibrating and squeeze type

197 ....Integral vibrator and squeeze head

198 ..Sand slinger type compactor

199 ...With boom-mounted slinging means

200 ..Blow type compactor

201 ...Including means for relatively moving blow means into engagement with shaping member

202 ...Including foraminous blow discharge means

203 ..By vibrating means (e.g., jarring, jolting, etc.)

204 ...Including cooperating static rammer means

205 ...Roll or rock-over type machine

206 ...By fluid actuated vibrator means

207 ..Press type compactor

208 ...Roller compacting means

209 ...Having invertible table

210 ...Plunger coacting with successively presented molds

211 ...Including a swinging press head

212 ...Fluid pressure means reciprocating or oscillating mold shaping member

213 .Including means for separating forming surface from shaping means

214 ..Means effecting parallel draw of cope and pattern plate respectively from each other and the drag

215 ..Means rotatably withdrawing pattern

216 ...Screw thread pattern

217 ..Utilizing a stripping plate

218 ...Pattern withdrawn vertically downwardly

219 ....Means effecting parallel motion

220 ....Including a mold material supporting stool

221 ....By lever and link

222 ..Including pattern having relatively moving parts

223 ..By vibrating means

224 ..Having means to invert flask or pattern

225 ..By drop pattern plate or support

226 ..By pin lifting arrangement for contacting mold

227 ..Means for displacing mold part from stationary shaping member

228 .Means for shaping core (e.g., core boxes, core molds, etc.)

229 ..Including character forming member (indicia)

230 ..Including means positioning preform part for forming composite core member

231 ...Preform part to be incorporated in cast product

232 ..Detachable or movable member for producing a recess or cavity in core member

233 ..Hinged core box sections

234 ..Including vent or vent forming means

235 .Pattern

236 ..Insert or chill supporting

237 ..Including flask member

238 ...Pattern or pattern holding member supported by aperture in flask or flask member

239 ...Pattern plate

240 ....Rotatable or pivotal pattern plate

241 ..Pattern plate

242 ...Gated pattern

243 ...Pattern mounted on both sides of plate

244 ..Sprue, gate or runner

245 ..To produce undercut

246 ...Destructible type pattern

247 ...Rotatable or pivotal pattern or pattern section

248 ...Loose piece type

249 ..Composite or plural part

250.1 MEANS TO DIRECTLY APPLY ELECTRICAL OR WAVE ENERGY TO WORK

505 .In continuous casting apparatus

506 ..Electron beam melting means

507 ..Induction heating means

508 ..Arc electrode melting means

509 ...Electroslag remelting type apparatus

510 .Electrical discharge knockout means

511 .High frequency vibration means

MEANS TO DIRECTLY APPLY ELECTRICAL OR WAVE ENERGY TO WORK
512 .Electron beam melting means
513 .Induction coil means
514 .Arc electrode
515 ..Electroslag remelting type apparatus
253 MEANS TO APPLY VACUUM DIRECTLY TO WORK OR TO HOLD OR MANIPULATE SHAPING MEANS
254 .Means applying vacuum or suction directly to molten casting material
255 ..Through porous mold body
256 ..Enclosed system including a receptacle and mold
257 ...Vacuum or suction means for feeding molten metal into charging chamber receptacle
258 ...Including melting chamber receptacle
259 MEANS PROVIDING INERT OR REDUCING ATMOSPHERE
415 .In continuous casting apparatus
260 INCLUDING VIBRATOR MEANS
416 .In continuous casting mold
261 .Fluid pressure type
262 WITH PRODUCT SEVERING OR TRIMMING MEANS
263 .Associated with continuous casting means
264 .Gate member acting as severing means
265 .Punch out type gate severing means
266 WITH METAL REFINING MEANS
267 WITH COATING MEANS
268 .Associated with a continous or semicontinous casting means
269 WITH MEANS FOR HANDLING EXPELLED CAST PRODUCT
270.1 COMBINED
417 .Including continuous casting apparatus
271 MEANS TO SHAPE METALLIC MATERIAL
272 .Metal revolving or tumbling type shaping means
418 .Continuous or semicontinuous casting
419 ..Including means to convey preformed product part to mold
420 ..Plural distinct shaping outlets
421 ..Hollow casting
422 ...Rotary mold
423 ..Filament or wire casting
424 ..Including shape-perfecting means
425 ..Including starter bar
426 ...Disconnectable
427 ..Continuously advancing mold part
428 ...Roll couple mold
429 ...Endless shaping means
430 ....Articulated segments (e.g., caterpiller type, etc.)
431 .....With plural belts of flexible material
432 ....Plural belts of flexible material
433 ....Casting wheel and flexible band
434 .....With dispensing feature
435 ..Having deformable mold wall or thermal expansion compensating means
436 ..Adjustable mold size
437 ..Including means to dispense or distribute metal charge
438 ...Movable dispenser
439 ...Mold contiguous wth or within dispenser
440 ....Dispensing into horizontal mold
441 ..Including product supporting or withdrawal means
442 ...Roller
443 ..Having casting material cooling means
444 ...Direct cooling of material
284 .Pressure shaping means
285 ..Including a pressure gas or pressure vapor generator
286 ..Centrifugal casting means
287 ...Having balancing means
288 ...Including means to hold or position preformed product part
289 ...Having mold radially disposed from axis of rotation
290 ....Plural mold cavities
291 ...Having mold expansion or warpage compensator
292 ...Having mold or mold part clamping means
293 ....Centrifugally actuatable
294 ....Including brake means
295 ...Including means to remove product from mold
296 ...Having plural mold cavities
297 ...Having coolant applying means
298 ...Horizontal or near horizontal axis of mold rotation
299 ....Including axial feeding trough
300 .....Rotatable around axis
301 .....Movable along axis during feeding
302 ..Including core means
303 ..Injection type
304 ...Including valved mold gate
305 ...Including means to vent die cavity or gate
306 ...Direct pneumatic charging means
307 ....Manually operated pressure generator
308 ....Flask sealing cap contains a pressure conduit
309 ....Hot chamber type
310 .....Including means to segregate a charge
311 ......Front loading nozzle
312 ...Piston-cylinder charger
313 ....Opposed piston injector
314 ....Hydraulic piston pressure means
315 .....Having multi-way valve control unit
316 ....Hot chamber type
317 .....Piston contains injection conduit
318 .....Fluid actuated piston
319 ..Inelastic compression means for confined metal
320 ...Core or internal compression member
321 ...Fluid pressure actuated
322 .Plural independent molds
323 ..Including mold translocating means
324 ...Endless serial mold circuit
325 ....Rotating table or wheel type translocating means
326 .....Having a vertical axis of rotation
327 ......Mold have separable part
328 ....Including cam means to control assembly or disassembly of parts
329 ....Chain conveyor
330 .....Molds having separable parts
331 .....Including mechanical ejector for product
332 .Including means to hold or position preformed product part in shaping area
333 ..Means for positioning plural preforms
334 ..Means other than mold surface supports preform
335 .Including ladle or crucible type melt receptacle
336 ..Rotatable with mold or dipper type dispenser
337 ..Having flow control or conduit means intermediate the receptacle and mold
338.1 .Including means to heat mold
338.2 ..In situ chemical reactive heating means
339 .Including means to assemble mold parts
340 ..Core positioning means
341 ..Having auxiliary means for locking assembled parts in place
342 ..Permanent mold parts

	MEANS TO SHAPE METALLIC MATERIAL
	.Including means to assemble mold parts
	..Permanent mold parts
343	...Fluid pressure means actuator
344	.Including means to eject or separate product from shaping surface
345	..Means to remove core
346	...Sectional or plural part core
347	..Utilizing ejector pin means
348	.Including means to apply coolant to mold or casting
349	.United particle type shaping surface (e.g., sand, etc.)
350	..Mold having individual mold cavities for forming plural products
351	...Including core in at least one cavity
352	..Including metal chill
353	...As part of shaping surface
354	....Chill is a core or core part
355	....Plural spaced chill sections
356	....Hollow annular center section chill (i.e., ring)
357	...Consumable chill
358	..Including apertured strainer means for separating unwanted component from casting material
359	..Including means to compensate for shrinkage (e.g., shrink head, etc.)
360	...Blind riser
361	..Shell type mold
362	..Having means to restrict turbulence of flow during casting
363	..Bottom gate or side pouring mold
364	..Comprised of separable parts
365	...Including a core
366	....Having embedded sand reinforcing, aligning, or supporting component
367	.....Hollow component
368	....Plural cores or core having plural parts
369	..Core
370	...Having integral alignment means
371	.Chill, shaping type
372	..Vented
373	..Circular
374	FLASK OR FLASK SECTION
375	.Including roll or rock-over means
376	.Investment type (e.g., dental, etc.)
377	.Size adjustable
378	..Height adjustable
379	.Including means to retain or reinforce mold sand or to position reinforcement
380	..Sand strip
381	...Mechanically retractable
382	..Depending reinforcement (e.g., gagger, etc.)
383	..Flask wall surface construction retains sand
384	.Plural part flask or flask section
385	..Including guide means to align superposed flask sections
386	...Including locking means to prevent vertical displacement
387	...Within and surrounded by flask wall
388	...Guide means is adjustable or elastic
389	....Resilient or flexible guide means
390	....By bolt movable in a slot
391	...Hinged type superposed sections
392	..Having separable sides (e.g., snap-type, etc.)
393	...At least one side joint hinged
394	MOLD JACKET OR SLIP BOX
395	.Having size adjustment feature
396	..Self adjusting type
397	CORE CENTERING OR SUPPORTING MEANS
398	.Chaplet
399	..Having anchor means
400	.Collapsible or knock down type core bar
401	STRIPPER OR EJECTOR
402	.Including means for inverting pattern
403	.Fluid actuated pattern stripping means
404	.Means to separate cast product from shaping surface
405	..Ingot strippers
406	...By stripping pin projecting through bottom of mold
407	...Means moving mold vertically upwardly during stripping
408	....Fluid pressure type stripper
409	MEANS TO INVERT A PATTERN PLATE OR A MOLD (E.G., TURN-OVER DEVICE, ETC.)
410	VENT OR VENT FORMING APPARATUS
411	REINFORCEMENT FOR MOLD MATERIAL
445	STARTER BAR
446	.Disconnectable
447	PRODUCT-SUPPORTING OR WITHDRAWAL MEANS FOR CONTINUOUS CASTING APPARATUS
448	.Roller
412	MISCELLANEOUS, APPARATUS

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CROSS-REFERENCE ART COLLECTION

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900	RHEO-CASTING

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DIGESTS

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DIG 1	Battery
DIG 2	Bearing
DIG 3	Centrifugal
DIG 4	Dental
DIG 5	Electron beam
DIG 6	Ingot
DIG 7	Melt
DIG 8	Piston
DIG 9	Piston-vacuum
DIG 10	Rotor
DIG 11	Slush
DIG 12	Thermit
DIG 13	Valve
DIG 14	Wheel
DIG 15	Precision casting

CLASS 165 HEAT EXCHANGE

1 PROCESS
2 .Heating and cooling
3 ..Humidity adjusting
4 REGENERATOR
5 .Cleaning
6 .Movable heat storage mass with enclosure
7 ..With fluid handling system
8 ..Rotary heat collector
9 ...Seals
9.1 .Checker brick structure
9.2 ..Gradated flow area, heat capacity or heat resistance
9.3 ..Having gas supply or exhaust manifold structure
9.4 ..In casing
10 .Heat collector
11.1 WITH ALARM, INDICATOR, SIGNAL, REGISTER, RECORDER, TEST OR INSPECTION MEANS
11.2 .Remotely controlled inspection means
12 TIME OR PROGRAM ACTUATOR
13 AUTOMATIC CONTROL
14 .Heating and cooling
15 ..With cabin pressure control
16 ..With ventilation control
17 ..Defrosting
18 ..With control of heat storage
19 ..With gas and liquid contact fluid flow control
20 ...By humidity sensor
21 ..With humidity sensor controlling humidity
22 ..Correlation of plural zone controls and central system control
23 ..Responsive to vehicle body motion
24 ..With manual control
25 ...Manual selector modifies automatic control
26 ..Single sensor controls both heating and cooling
27 ..Selective heating or cooling
28 ...Room and ambient temperature sensors
29 ..Heat pump with supplemental heat source controlled
30 ..Opposed compensating heating and cooling
31 ..Pressure response or control
32 .Temperature or pressure
33 ..With correlated manual actuation
34 ..Branched flow of exchanging fluid
35 ...By-pass of heat exchanger
36 ....Mixture temperature sensing
37 .....With pressure response
38 ....Pressure controlled
39 ..Flow of one heat exchanging material controlled by the condition of another
40 ..Flow of heat exchanging material controlled by its own condition
41 WITH VEHICLE FEATURE
42 .Heating and cooling
43 ..Vehicle contained common power and heat supply
44 .Utilizing motion of vehicle
45 GEOGRAPHICAL
46 FLEXIBLE ENVELOPE OR COVER TYPE
47 STRUCTURAL INSTALLATION
48.1 .Heating and cooling
48.2 ..Solar
49 ..Radiant building panel
50 ..Room heat exchangers with central fluid supply
51 .Engine
52 ..Exchange between engine supply and exhaust lines
53 .Related to wall, floor or ceiling structure of a chamber
54 ..In a chamber connected passage traversing the structure
55 ..Projecting shield forms passage with the structure
56 ..Hollow or recess in the structure connected for exchange fluid flow
57 ...Ported to the chamber
58 HEATING AND COOLING
59 .With ventilation
60 .Gas-liquid contactor
61 .Heating and cooling of the same material
62 ..Refrigerating system conversion
63 ..Refrigeration producer
64 ..Heat generator
65 ..Heater and cooler serially arranged
66 ...Heat exchange between supply and exhaust lines
67 WITH EXTERNAL SUPPORT
68 .Legs
69 RESILIENT VIBRATION DAMPER ISOLATING EXCHANGER ELEMENT
70 WITH LEAKAGE COLLECTOR
71 WITH PURGE, OR DRAINAGE, COCK OR PLUG
72 COVERED ACCESS OPENING
73 .Cover is, or carries, heat exchanging means
74 ..Heat exchanging means projects into the covered chamber
75 .Heating or cooling means within the covered chamber
76 WITH REPAIR OR ASSEMBLY MEANS
77 .Hinge
78 .Guide
79 .Positioner or retainer for settable material
80.1 WITH RETAINER FOR REMOVABLE ARTICLE
80.2 .Electrical component
80.3 ..Air cooled, including fins
80.4 ..Liquid cooled
80.5 .Including liquid heat exchange medium
81 EXPANSION AND CONTRACTION RELIEVING OR ABSORBING MEANS
82 .Relieving or absorbing means supports temperature modifier in heat exchanger
83 ..Flexible fluid confining wall
84 WITH MEANS FLEXING, JARRING OR VIBRATING HEAT EXCHANGE SURFACE
85 AGITATOR OR IMPELLER MOTOR OPERATED BY EXCHANGE FLUID
86 MOVABLE HEATING OR COOLING SURFACE
87 .Hollow screw type impeller
88 .Rotor carrying separate chambers for two exchanging fluents
89 .Rotary drum
90 ..With means applying fluids for exchange through drum wall
91 ...With drum surface scraper
92 .Hollow strirrer or scraper
93 ..Material advancer in shelf to shelf device
94 WITH SCRAPER REMOVING PRODUCT FROM TEMPERATURE MODIFYING SURFACE
95 WITH CLEANING MEANS FOR HEAT EXCHANGER
96 WITH ADJUSTOR FOR HEAT, OR EXCHANGE MATERIAL, FLOW
97 .Flow reversed or crossed within temperature modifying zone
98 .Adjustable radiator face covering means
99 ..Discharge grille or diffuser
100 .Branched flow
101 ..Controls flow through parallel heating or cooling means
102 ..Tortuous and straight through branches within heating or cooling drum
103 ..By pass of heating or cooling means

104.11	INTERMEDIATE FLUENT HEAT EXCHANGE MATERIAL RECEIVING AND DISCHARGING HEAT
104.12	.Reversible chemical reaction
104.13	.Plural intermediate fluent heat exchange materials
104.14	..Always out of direct contact with each other
104.15	.Solid fluent heat exchange material
104.16	..Fluidized bed
104.17	..Utilizing change of state
104.18	..Including means to move heat exchange material
104.19	.Liquid fluent heat exchange material
104.21	..Utilizing change of state
104.22	...Including means to move heat exchange material in liquid state
104.23	....By direct application of electrical energy to heat exchange material
104.24	....By application of heat other than in heat receiving area
104.25	....By application of mechanical energy
104.26	...Utilizing capillary attraction
104.27	...With pressurizing means or degassifying means
104.28	..Including means to move heat exchange material
104.29	...Utilizing formed bubble
104.31	...By application of mechanical energy
104.32	..With pressurizing means or degassifying means
104.33	..Cooling electrical device
104.34	.Including means to move gaseous heat exchange material
108	RECIRCULATION
109.1	WITH AGITATING OR STIRRING STRUCTURE
110	WITH FIRST FLUID HOLDER OR COLLECTOR OPEN TO SECOND FLUID
111	.Separate external discharge port for each fluid
112	..With downstream pressure or temperature modifier
113	...Surface-type heat exchanger
114	..With baffle at inlet to less dense fluid discharge port
115	.Trickler
116	..Shelf to shelf
117	..Pipe exterior to pipe exterior
118	..Vertical cone or drum
119	WITH SOLIDS SEPARATOR FOR EXCHANGE FLUID
120	WITH IMPELLER OR CONVEYOR MOVING EXCHANGE MATERIAL
121	.Mechanical gas pump
122	..Heating or cooling means and gas pump in housing
123	...With injector-type gas pump
124	...Verging gas flow
125	....Radial flow through annular heating or cooling means
126	....Single inlet, plural outlets
127	.....Gas pump for each outlet stream
128	THERMOSYPHONIC FLUE TYPE
129	.Heating or cooling means within distinct flue forming enclosure
130	.Flue formed between facing second fluid containing conduits
131	.Flues formed by vertical corrugations of heat transmitter
132	HEATING OR COOLING MEANS IN OPEN COMMUNICATION WITH RESERVOIR
133	WITH COATED, ROUGHENED OR POLISHED SURFACE
134.1	WITH PROTECTOR OR PROTECTIVE AGENT
135	WITH THERMAL OR ACOUSTICAL BLOCKER
136	.Insulation and temperature modifier within barrier member
137	CONVERTIBLE
138	COMBINED
139	INTERNALLY BRANCHED FLOW, EXTERNALLY PORTED
140	THREE NON-COMMUNICATING FLUIDS
141	.Concentric flow chambers
142	SPUR TUBE PROJECTS INTO ENCLOSURE
143	PLURAL CASING-CONDUIT UNITS< LINE OR COMMON HEADER CONNECTED
144	LINE CONNECTED CONDUIT ASSEMBLIES
145	.In common casing
146	GRADATED HEAT TRANSFER STRUCTURE
147	.Tapered conduit means
148	RADIATOR CORE TYPE
149	.With edge cover or frame means
150	.Serially connected tube sections
151	.Side-by-side tubes traversing fin means
152	.Deformed sheet forms passages between side-by-side tube means
153	..With tube manifold
154	NON-COMMUNICATING COAXIAL ENCLOSURES
155	.With communicating coaxial enclosure
156	.Helical conduit means
157	CASING OR TANK ENCLOSED CONDUIT ASSEMBLY
158	.Manifold formed by casing section and tube sheet of assembly
159	.With distinct flow director in casing
160	..Longitudinal
161	...Additional transverse baffle
162	.With support in casing
163	.Conduit coiled within casing
164	FLOW PASSAGES FOR TWO CONFINED FLUIDS
165	.Interdigitated plural first and plural second fluid passages
166	..Stacked plates or shells form interplate passages
167	...With plate traversing passages interconnecting alternate spaces
168	CONDUIT WITHIN, OR CONFORMING TO, PANEL OR WALL STRUCTURE
169	.Wall forms enclosure
170	.Opposed plates or shells
171	.Means spanning side-by-side tube elements
172	SIDE-BY-SIDE TUBULAR STRUCTURES OR TUBE SECTIONS
173	.With manifold type header or header plate
174	..With internal flow director
175	..Inlet and outlet header means
176	...Side by side
177	TUBULAR STRUCTURE
178	.With support or flow connector
179	.Projecting internal and external heat transfer means
180	.Diverse materials
181	.With discrete heat transfer means
182	..With means spacing fins on structure
183	..Longitudinal extending
184	...Helical
185	HEAT TRANSMITTER
186	MISCELLANEOUS
	********************************
	CROSS-REFERENCE ART COLLECTIONS
	********************************
900	COOLING TOWERS
901	HEAT SAVERS
902	HEAT STORAGE
903	CONVECTION
904	RADIATION
905	MATERIALS OF MANUFACTURE
906	REINFORCEMENT
907	POROUS
908	FLUID JETS
909	REGENERATION
910	TUBE PATTERN
911	VAPORIZATION
912	COMBINED OR CONVERTIBLE HEAT EXCHANGE MODES
913	CONDENSATION

914	FILMING
915	FOAMING
916	OIL COOLER
917	PRESSURIZATION AND/OR DEGASSIFICATION
918	HEATED AND COOLED FOOD CABINETS AND/OR TRAYS
919	.WHEELED
920	PARTICULATE HEAT EXCHANGE
921	DEW POINT

335	SUBMERGED WELL
336	.Testing
337	..For leak
338	.Connection or disconnection of submerged members remotely controlled
339	..With provision for removal or repositioning of member without removal of other well structure
340	..Disconnection
341	..With orienting or aligning of member for connection
342	...Including removable, member mounted guide
343	...Including means to pull member into position
344	..Connection to provide fluid flow path
345	...Connection of riser-and-tubing assembly to other structure
346	...Yieldable tubing
347	...Connection of lateral flow line
348	..Connection of pipe hanging
349	..Connection of guide means
350	.Submerged, buoyant wellhead or riser
351	.Means removably connected to permanent well structure
352	..Surface vessel
353	...Having means to move vessel to precise location
354	...Having means to hold vessel at given location (e.g., anchor, etc.)
355	...With means to compensate for vessel movement
356	..Means to provide protective environment for operative access below surface of water
357	..Separator
358	..Drilling means
359	..Removable riser
360	..Well component assembly means
361	..Pipe cutting means
363	.With safety or emergency shutoff
364	.Including disaster feature
365	.With provision for disassembly
366	.Multiple wells
367	.Riser
368	.Wellhead
244.1	PROCESSES
245	.Specific pattern of plural wells
246	.Using microorganisms
247	.Nuclear energy or radioactivity for treating
248	.Electric current or electrical wave energy through earth for treating
249	.Vibrating the earth or material in or being placed in the earth pores
250	.With indicating, testing, measuring or locating
251	..Including in situ combustion
252	..Including production of earth fluid by driving fluid
253	..Indicating the location, presence or absence of cement
254	..Determining position of earth zone
255	..Determining position of object in well
256	.In situ combustion
257	..Injecting while producing by in situ combustion from same well
258	..Plural distinct superimposed formations
259	..Including fracturing or attacking formation
260	..Injecting specific fuel or catalyst for burning into formation
261	..Injecting specific material other than oxygen into formation
262	..Solid fuel or particles in well
263	.Cyclic operation of plural wells
264	.Sampling well fluid
265	.Separating material leaving well
266	..Injection and producing wells
267	..Separating outside of well
268	.Injection and producing wells
269	..Fluid injected from longitudinally spaced locations in injection well
270	..Introduced materials chemically inter-react in formation pores or surfactant produced in situ
271	..Including fracturing or attacking formation
272	..Including heating
273	..Three or more separate fluids injected
274	..Two separate fluids injected
275	..Injected fluid comprises water and material other than inorganic gas
276	.Providing porous mass of adhered filter material in well
277	.Repairing object in well
278	.Graveling or filter forming
279	.Material placed in pores of formation to treat resident fluid flowing into well
280	.Specific propping feature for a fracture
281	.Separate steps of (1) cementing, plugging or consolidating and (2) fracturing or attacking formation
282	.Specific low fluid loss feature for fluid attacking formation
283	.Specific low fluid loss feature for fracturing fluid or cement causes fracture
284	.Fluid flow causes pellet to block opening in wall of conduit
285	.Cementing, plugging or consolidating
286	..Tamping, vibrating, exploding or using receptacle
287	..Removable molding or forming means
288	..Including heating
289	..Discharging cement from casing at different levels
290	..By tubing which is subsequently lifted
291	..With piston separator
292	..Using specific materials
293	...Cement or consolidating material contains inorganic water settable and organic ingredients
294	...Cement or consolidating material is organic or has organic ingredient
295	....Organic material is resin or resinous
296	.Preventing flow into strainer while lowering by blocking openings
297	.Perforating, weakening, bending or separating pipe at an unprepared point
298	..Perforating, weakening or separating by mechanical means or abrasive fluid
299	.With explosion or breaking container to implode
300	.Chemical inter-reaction of introduced materials
301	.Freeing stuck object, grappling or fishing in well
302	.Heating, cooling or insulating
303	..Placing preheated fluid into formation
304	.Dissolving or preventing formation of solid oil deposit
305.1	.Placing fluid into or fracturing the formation
306	..Fluid enters and leaves well at spaced zones
307	..Attacking formation
308	..Fracturing
309	.Producing foam or gas in well by foaming or gas producing material

	PROCESSES
310	.Entraining or incorporating treating material in flowing earth fluid
311	.Cleaning or unloading well
312	..Liquid introduced from well top
313	.Parallel string or multiple completion well
369	.Producing the well
370	..Including varying downhole pressure
371	..Including non-expulsive material placed in well
372	..By fluid lift
373	.Operating valve, closure, or changeable restrictor in a well
374	..Operated by fluid pressure controlled above ground
375	...By auxilliary fluid control line
376	.Destroying or dissolving well part
377	.Disassembling well part
378	.Assembling well part
379	..Above ground parts
380	..Conduit
381	.Placing or shifting well part
382	..Providing support for well part (e.g., hanger or anchor)
383	..By fluid driven piston
384	..With bending of tubing
385	..Flexible cable or wire
386	..Fluid flow control member (e.g., plug or valve)
387	..With sealing feature (e.g., packer)
50	WELLS WITH LATERAL CONDUITS
51	MEANS FOR FORMING FILTER BEDS (E.G., GRAVEL PLACING)
52	PLURAL WELLS
53	AUTOMATIC
54	.Float controlled valve
54.1	WITH MEANS FOR SEPARATELY PUMPING FROM PLURAL SOURCES IN WELL
54.5	MEANS FOR CUTTING CABLE OR ROPE BELOW GROUND
54.6	.Cutting means actuated by contacting element suspended in well by cable or rope
55	MEANS FOR PERFORATING, WEAKENING, BENDING OR SEPARATING PIPE AT AN UNPREPARED POINT
55.1	.With disparate below ground feature
55.2	.Perforating or splitting cutter
55.3	..Wedge or cam actuated
55.6	.Cutter rotates circumferentially of pipe
55.7	..Internal
55.8	...Tool moved radially by fluid pressure
56	SCREEN AND OUTSIDE CLEANING PIPE
57	WITH HEATING, REFRIGERATING OR HEAT INSULATING MEANS
58	.Fuel supply or hot billet in well
59	.Burner in well
60	.Electrical heater in well
61	.Heater surrounding production tube
62	.With eduction pump or plunger in well
63	WITH EXPLOSIVE OR GAS GENERATING MEANS IN WELL
64	WITH TIME OR DISTANCE MEASURING, TEMPERATURE RESPONSIVE OR COUNTING MEANS
65.1	WITH ELECTRICAL MEANS
66	.Indicating
66.4	.Electrical motor (e.g., solenoid actuator)
66.5	.Magnetic
67	WITH BELOW AND ABOVE GROUND MODIFICATION
68	.Eduction pump or plunger in well
68.5	..With above ground (1) motor carried by casing or casing support or (2) well fluid pump
69	.With receptacle for insertion into well
70	.Head for tool, piston or cleaner (e.g., cement head)
71	.With above ground casing sinking means
72	.Above ground actuating means for below ground device
73	..Tubing or casing actuated
74	.With below ground screen
75.1	ABOVEGROUND APPARATUS
76	.Convertible
77	.Forcing tubing or cable into an existing well
77.5	.With means facilitating connecting or disconnecting tubing or rod sections
78	.With tube rotating means
79	.With transporting means or unconnected cap
80	.Retractable pipe section extending through valve
81	.Fluid catcher around pipe coupling
82	.Releasable seal or cleaner for inner member
83	..Radially inwardly releasable latches
84	.With seal for reciprocating member
85	.With assembly or disassembly means (e.g., handling, guiding or tool feature)
86	.Inner member anchor or seal with valve
87	..Axially movable valve
88	.Inner member anchor or seal with lateral port
89	..Plural inner pipes
90	.With nozzle for inserting fluid
91	.With flow restrictors (e.g., chokes or beans)
92	.Cap or head pivoted to tube or casing
93	.Split cap or head
94	.Laterally adjustable cap or head
95	.Central valve or closure and lateral port
96	.External anchoring or bracing means
97	.With valve on cap or head
97.5	.Parallel pipes extending along distinct paths through wellhead
98	GRAPPLE AND WELL ANCHORED LIFTING MEANS
99	WITH JUNK RETRIEVING MEANS
100	LATERAL PROBE OR PORT SEALED AGAINST WELL WALL
101	PACKER OR PLUG AND PUMP OR PLUNGER MEANS EXERTING OUTWARD PRESSURE
102	CONVERTIBLE
104	WITH MOTOR FOR ROTARY OR OSCILLATING MOTION
105	WITH EDUCTION PUMP OR PLUNGER
105.1	.Having sediment trap or deflector
105.2	..Carried by reciprocating plunger or plunger rod
105.3	..Sediment trap formed in pumping chamber
105.4	..In pump discharge flow path
105.5	.Having liquid-gas separator
105.6	..Gas fed to entrainment type pump
106	.With packer or plug
107	.Receptacles
108	..Piston actuates foot valve
109	..Telescoping
110	..Lateral port always below piston and used in well
111	..Bail engaging piston rod
112	.With leak means
113	COMBINED (E.G., WITH NON-ELECTRICAL INDICATING)
114	CENTRAL MEMBER WITH PRE-SET PACKER OR PLUG IN SAME CONDUIT
115	CENTRAL CHAMBER SEALED WITH RESPECT TO PREPOSITIONED MODIFIED SURROUNDING CONDUIT
116	.Surrounding conduit carries packer or plug

117	RECEPTACLE OR PART THEREOF LEFT IN WELL
117.5	MEANS FOR GUIDING INSERTABLE ELEMENT LATERALLY OF WELL AXIS (E.G., WHIPSTOCK)
117.6	.Secured in operative position by movable means engaging well conduit (e.g., anchor)
117.7	MEANS ANCHORED AGAINST ROTATION IN ONE CONDUIT SECTION FOR RELATIVELY ROTATING ANOTHER SECTION
118	PACKER OR PLUG WITH EXPANDING ANCHOR
119	.Relatively movable packers or plugs
120	.Anchor actuated by fluid pressure
121	..Pressure transmitted by cup type packer or plug seal
122	..Pressure transmitted by packer or plug expanded by confined fluid from central chamber, pump, or plunger
123	.With detachable setting means
124	..Screw threaded
125	..Radially movable latch
126	.With controllable passage between central chamber and space below packer
127	..Spaced packer or plug seals
128	..Passage controllable by movement of central chamber
129	.With controllable bypass outside central conduit
130	..Packer expanded by upper valve
131	.With controllable passage between central conduit and space above packer or plug
132	.Portion extends beyond end of surrounding conduit
133	.With controllable passage through packer
134	.Support and holddown expanding anchors
135	.Plug
136	.Spring set anchor
137	..Spring moves anchor slip relative to wedge or cam
138	.Wedge or cam and friction drag
139	..Threaded element rotated
140	..Anchor above packer or plug seal
141	PACKER OR PLUG SEALING PORTION CLOSES PORT BETWEEN CENTRAL PIPE AND OUTSIDE SPACE WHEN UNEXPANDED
142	PACKER WITH CONTROLLABLE PASSAGE BETWEEN CENTRAL CHAMBER AND SPACE BELOW PACKER
143	.Central conduit detachable
144	..Bottom supported casing or screen section
145	.Bypass closing and passage opening to upward flow contrained to occur simultaneously
146	.Passage connects with space below packers and continuously open passageway connects with space between packers
147	.Passage connects with space between packer or plug seals
148	.Upwardly biased check valve and means for opening or bypassing it
149	.With passageway between central chamber and space above packer
150	..Passageway controllable by movement of central chamber
151	..Passageway valve directly responsive to fluid pressure
152	.Passage controllable by movement of central chamber
153	PISTONS, FLUID DRIVEN INTO WELL (E.G., CEMENTING PLUGS)
154	.Surrounding conduit valve or closure opened by piston
155	.With downflow past piston
156	.With stop
157	SCREEN WITH WASHING POINT OR SHOE
158	.Detachable wash pipe
162	RECEPTACLES
163	.With separate air chamber having openable passage
164	.With destroyable closure and valve
165	.With valved or closed top
166	.Valve control means contacting well conduit wall
167	.Bottom receiving and side discharge valves
168	.Readily releasable bottom valve
169	.Lateral ports used in well
170	BRUSHING, SCRAPING, CUTTING OR PUNCHING-TYPE CLEANERS
171	.Perforation cleaners
172	.Bow spring type
173	.On tubing or casing
174	.Retractable on support while lowering
175	.Reciprocable relative to central member extending from well top
176	.On sucker rod
177	AGITATING, WIPING, VIBRATING OR FRACTURING MEANS
178	WITH JAR MEANS FOR RELEASING STUCK PART
179	PACKERS OR PLUGS
180	.Adjustable over pipe or set over prepositioned pipe
181	.With detachable setting means
182	..Packer or plug locked expanded
183	.With controllable bypass outside central conduit
184	.With controllable passage between central conduit and space above packer or plug
185	.With central conduit and fluid port to space outside
186	..Port between sealing portions and bypass around
187	.Expanded by confined fluid from central chamber, pump or plunger
188	.Controllable passage through packer
189	.For non-concentric members
191	.Spaced sealing portions
192	.Plugs
193	..Free falling type (e.g., dropped ball)
194	...With sleeve valve
195	.Deformable portion engages conduit restriction
196	.Central support has shoulders expanding sealing portion, or telescopes
202	.Cup type
203	.Non-deformable type
205	SCREEN WITH VALVE, CLOSURE, CHANGEABLE RESTRICTOR OR PORTION REMOVABLE IN WELL
206	EXPANSIBLE ANCHOR OR CASING
207	.Expansible casing
208	.Liner hanger
209	.Set by wedge or cam at any point by drop only (e.g., tubing catcher)
210	..With friction drag for setting by turning movement also
211	..With spring
212	.Fluid pressure actuated
213	.Bowed anchor means
214	.Spring set
215	..Spring moves anchor slip relative to wedge or cam
216	.With wedge or cam and friction drag
217	.Expansible means translated by wedge or cam
222	WHIRLING OR LATERAL DISCHARGE OR PROJECTABLE NOZZLES
223	.Rotary or projectable
316	VALVES, CLOSURES OR CHANGEABLE RESTRICTORS
317	.Destructible element

VALVES, CLOSURES OR CHANGEABLE RESTRICTORS
318 .Operated by dropped element
319 .Fluid operated
320 ..Variably opened
321 ..Fluid pressure biased to open position position
322 ...Retrievable
323 ...Locked open or closed
324 ...With fluid pressure equalizing means
325 ..One way, e.g., check valve type
326 ...Flexible valve element
327 ...Shoes with check valve
328 ....Loose ball closure
329 ..Loose ball closure with limited reverse flow
330 .Rotated operator
331 ..Lug in branched slot, e.g., "J" slot
332 .Longitudinally movable operator
333 ..Contact with bore bottom
334 ..Vertical movement of conduit
227 SCREENS
228 .Porous material
229 .Inserted screen plug
230 .Woven mesh
231 .Spiral
232 ..With spacing lug for adjacent turns
233 ..With perforated pipe
234 .Strip or rod
235 .Stacked annular sections
236 .Concentric pipes
237 DETENTS OR CLUTCHES
238 .Flow permitting means bridging fluid conduit
239 .Operated by dropped weight
240 .Lug in closed branched slot
241 CENTERING OR FRICTION DRAG MEANS
242 CONDUIT WALL OR SHOE STRUCTURE ONLY
243 MISCELLANEOUS (E.G., ANCHOR PIPES)

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CROSS-REFERENCE ART COLLECTIONS

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901 WELLS IN FROZEN TERRAIN
902 FOR INHIBITING CORROSION OR COATING

CLASS 168 FARRIERY

1 OVERSHOES
2 .Medicating
3 .Swamp
4 SHOES
5 .Ox
6 .Hoof spreading
7 ..Hinged sections
8 ...Spring
9 ...Stretching bar
10 ..Wedge
11 .Auxiliary tread plate
12 .Cushioned
13 ..Soft tread
14 ...Sole pad
15 ..Spring heels
16 ..Interference pads
17 .Fastenings
18 ..Boots
19 ..Clamped sections
20 ..Inclined flange
21 ..Side spurs
22 ..Toe and heel straps
23 ..Nails and screws
24 .Shape
25 .Weights
26 SOLE PADS
27 .Medicating
28 .Elastic
29 CALKS
30 .Creeper section
31 .Removable
32 ..Bolt
33 ..Bolt and lug
34 ..Clamped
35 ..Dovetailed
36 ..Hooked lug and pin
37 ..Hooked lug and wedge
38 ..Nail calk
..Tenoned
39 ...Button head
40 ...Cross pinned
41 ...Friction
42 ...Screw threaded
43 ...Wedged
44 SHOEING STANDS
45 TOOLS
46 .Calk sharpeners
47 .Hoof and shoe expanders
48.1 .Hoof cleaner or trimmer
48.2 ..Rotary

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DIGESTS

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DIG 1 Nonmetallic
DIG 2 Traction shape

CLASS 169 FIRE EXTINGUISHERS

DECEMBER 1990

43	PROCESSES
44	.With mixing of extinguishing compounds
45	.Of preventing fire
46	.Of extinguishing fire
47	..By projecting extinguishant directly onto seat of fire
48	APPARATUS WHICH ISOLATES FLAMES FROM NON-BURNING AREA
49	.With means to isolate fire from atmosphere and extinguish
50	..Acted upon by operator in use
51	MOUNT, CABINET OR GUARD
52	.Movable relative to fire
53	..On air-borne vehicle
24	..Fire engines
25	..Water towers
54	SPECIAL APPLICATIONS
55	.For railway car heaters
56	.Condition responsive control
57	..Having fusible plug, support, or holder
58	..Having frangible extinguishant holder
59	..Fusible cable
60	..Sensor, control and actuator
61	...Electrical control
62	.For vehicles
63	.For motion picture apparatus
64	.For mine
65	.For cooking installation
66	.For storage tank
67	..Extinguisher having transport or erection means
68	..With specific extinguishant applying means
69	.For oil or gas well
70	.With specific extinguishant applying means, or means for providing access to fire
5	FLUID SYSTEMS
6	.Chemical pressure generating
7	..Automatic
8	...Pressure controlled
9	.Gas-pressure discharge
10	.Gravity
11	.Gas
12	..Combustion products
13	.Pump supply
14	.Plural source, mixing in transit
15	..Stream impregnating
16	.Distributing systems
17	..Dry pipe
18	..Hand controls
19	AUTOMATIC VALVES
20	.Pressure controlled
21	..Lever system
22	..Differential area
23	ALARMS
26	AUTOMATIC RECEPTACLES
27	.Chemical mixing
28	.Explosive
29	.Mechanical discharge
30	PORTABLE VESSELS
71	.Gas pressure
72	..With means facilitating total discharge
73	...By collapsing chamber holding agent
74	..With particular outlet structure
75	..With means preventing accidental discharge, relieving pressure, or indicating condition within vessel
76	..With means permitting repeated discharge
77	..Power extinguishant
78	..Produced by chemical mixing
79	...Upon inversion of internal container
80	...Upon inversion of vessel
81	....Breaks reactant container
82	....Reactant container closure released by gravity
83	...Upon breaking internal container
84	..Produced by combustion
85	..Pressurizing agent stored apart from agent
86	...With means to prevent freezing of expanding gas
87	...Vessel inverted to release gas
88	...Lever or trigger operated to release gas
89	..Discharge head
33	.Piston discharge
34	.Buckets
35	.Tubes
36	.Grenades
37	SPRINKLER HEADS
90	.Shut off valve
38	.Collapsible strut
39	..Compound
40	.Lever
41	.Direct support
42	FUSIBLE CONNECTIONS
91	MISCELLANEOUS: E.G., BLOWERS
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	DIGESTS
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DIG 1	Floats
DIG 2	Ablative fluids
DIG 3	Trip mechanisms

CLASS 171 UNEARTHING PLANTS OR BURIED OBJECTS

1 METHODS OF RECOVERING BURIED OBJECTS
2 PLURAL ALTERNATELY USABLE UNEARTHING UNITS
3 STABILIZING COLTER OR FIN
4 WITH ADDITIONAL EARTH OR PLANT ROLLING IMPLEMENT
5 WITH VERTICAL CUTTER FOR VEGETATION
6 WITH EARTH MARKER OR TRAILING EARTH CONDITIONER
7 PERIODIC DUMPING IN PILES
8 DRIVE TRIGGERED BY DESIRED OBJECT
9 SUPPORT OVERLOAD RELEASE AND RESET; DRIVE OVERLOAD RELIEF; OR AUTOMATIC CONTROL
10 WITH PRELIMINARY REMOVAL OR UNDESIRED EARTH MATERIAL
11 REMOVABLE OR ALTERNATE COLLECTION RECEPTACLES
12 WITH APPARATUS CLEANER IN NONRECOVERY ZONE OF UNEARTHING UNIT
13 WITH TOOTHED MOVING STRIPPER OR PICK-OFF FOR UNDESIRED OBJECT
14 RECOVERED OBJECT PASSES THROUGH SEPARATOR INTERSTICES
15 .Assorting by size
16 RAILROAD BALLAST REMOVAL AND ASSORTING OR SEPARATING
17 SEPARATION OR ORIENTATION BY FLUID CURRENT OR SUSPENSION
18 SEPARATION BY PHYSICAL CHARACTERISTICS
19 WITH RAKE OR LATERAL DEFLECTOR FOR GROUND CONTACTING RECOVERED OBJECTS
20 WITH MANUAL OPERATION STATION (E.G., TOPPING, SEPARATION INSPECTION)
21 HOLDING AND SEVERING PLANT PORTION IN SITU
22 .Plural level cutters
23 WITH SELECTIVE DELIVERY TO ALTERNATE LOCATIONS (E.G., BY-PASS)
24 WITH COMMINUTING OR MULTIPLE CUTTING OF RECOVERED PLANT PART
25 WITH CLEANING OF RECOVERED OBJECT BY BRUSHING OR WIPING
26 WITH ABOVE-GROUND MEANS FOR DETACHMENT OF PLANT PART
27 .Detachment by pulling, beating, shaking or crushing
28 ..By opposed rotary gripping elements
29 .Separate successive topping stations
30 .By non-driven rotatable cutter (e.g., rolling)
31 .Conveyer feed to or from cutter
32 ..Cutter positioned by gauge
33 ..With driven gauge
34 ..With gauge
35 ...Moved into transverse horizontal position for cutting
36 ..Held by conveyer during cutting
37 ...With lateral disposal of cuttings
38 ...Opposed belt conveyers
39 ...Wheel-like conveyer
40 .With deflector or conveyer for detached plant part
41 .Moving topping cutter
42 ..Rotary or endless
43 COMBINED OR CONVERTIBLE
44 POWER MEANS TO SHIFT UNEARTHING UNIT PART
45 TRACTOR POWERED TRAILING UNEARTHING UNIT
46 UNEARTHING UNIT DETACHABLE FROM VEHICLE CHASSIS
47 UNEARTHING UNIT LATERALLY SHIFTABLE ON SUPPORT
48 SEPARATE DRAFT CONNECTIONS TO UNEARTHING UNIT AND UNEARTHING UNIT SUPPORT
49 MOVED OBJECT VOID FILLING OR EARTH HOLD DOWN
50 EXTRACTOR
51 .With agitator for extractor or extractor-carried object
52 .With movable stripper
53 .Plant impaling or snagging (e.g., roots or tops)
54 ..Retractible to strip
55 .Opposed plant engagers
56 ..Jaw means relatively movably mounted on carrier means
57 ..Screw
58 ..Disc or roller
59 ..Claw type
60 ..One a belt or belt carrier member
61 ...Opposed belts or belt carried members
62 .With digger or root cutter
63 STONE GATHERING AND/OR UNEARTHING BY IMPELLING ABOVE-GROUND PLANT OR OBJECT PORTION
64 .With underground stalk or root severing
65 .Impeller inclined to line of draft
66 GROUND ENGAGING CHAIN SEPARATORS
67 WITH PRELIMINARY DEFLECTOR FOR SURFACE MATERIAL
68 .Driven deflector
69 .Moving deflector
70 TRANSVERSELY MOVING SINGLE TINE ROW
71 PLOW OR BLADE CONTINGUOUS TO VIBRATING SEPARATOR
72 .With resilient support or drive connection
73 .Transversely curved or inclined separator
74 .With side walls or guides
75 .Plural separator sets of with articulated elements
76 ..Relatively moving interdigitated sets
77 .Non-circular rolling support for a separator
78 .Ground supported trailing separator
79 .Supported on longitudinally spaced links
80 .Swinging about longitudinal or inclined axis
81 .Shifting laterally
82 UNEARTHING UNIT ROCKING OR FULCRUMED ON GROUND
83 LEADING PLOW OR CUTTER WITH CONTIGUOUS, FIXED INCLINED SEPARATOR
84 SEPARATING DIGGER (E.G., VERTICAL COLLECTING TINES)
85 .Moving impeller with cooperating circular arcuate guide
86 .Movable on supporting frame (e.g., pivoted)
87 ..With ejector on digger or digger carrier
88 ..Plural cooperating moving diggers
89 ..Moving diggers with intercepting moving stripper or conveyer
90 ..Moving digger with intercepting stripper or chute
91 ..Moving digger carrier with relatively moving digger
92 ..Separator or collector within annular or endless digger
93 ..Rolling or coaxial with traction wheel
94 ..Carried by endless flexible member
95 ..Rotary
96 ...Conical digger portion
97 ...Horizontal axis (e.g., longitudinal axis)
98 ....Transverse axis
99 ..Cyclic
100 ..Pivoted about ground wheel axle
101 .Separating digger intercepted by moving conveyer or impeller
102 .Laterally deflecting diggers

SEPARATING DIGGER (E.G., VERTICAL COLLECTING TINES)
103 .Spaced, inclined shares or guides (pairs)
104 .Inclined lifting surfaces
105 ..Tines (e.g., forks)
106 ..Vertically stepped transverse elements
107 .Tooth or tine arrangements or details
108 TRACTION WHEEL DRIVE DETAILS FOR UNEARTHING UNIT PART
109 UNEARTHING UNIT OR VEHICULAR BREAK-FRAME
110 DIGGER AND MOVING CONVEYER UNIT ADJUSTABLE RELATIVE TO CHASSIS
111 EARTH REMOVAL AND SEPARATION
112 .Rolling screen or sieve (e.g., wheel or belt)
113 .Spiral conveyer for excavator or separator
114 .With impeller or clod breaker for excavator or separator
115 ..Transversely moving rotary member
116 ..Rotary
117 ..Endless belt type impeller or breaker
118 ...Opposed endless members
119 ...Excavator or separator within confines of endless impeller or breakers
120 ...Endless impeller or breaker above excavator or separator
121 ..Impeller or breaker driven through cyclic path
122 .Clod pulverizer outside separating zone
123 .Conveyer disposed below separator
124 .Moving conveyer, digger or separator
125 ..Rolling nonseparating elevator or conveyer
126 ..Moving open separator or separating conveyer
127 ...Compound motion (e.g., with agitator)
128 ...Rotary cylinder with radially extending separating elements
129 ...Rotary drum type
130 ...Plural, successive, endless belt type
131 ...Plural successive separators, one a belt
132 ...Moving screen or grate (e.g., shaker)
133 ...Relatively moving separator elements (e.g., rollers)
134 ..Moving digger and separate separator
135 .Separator formed in collector receptacle
136 .Digger and fixedly interconnected contiguous separator
137 WITH PROTECTIVE GUARD OR CASING
138 WITH MATERIAL REDIRECTING CONVEYER OR CHUTE
139 UNEARTHING UNIT FIXED ON VERTICALLY SHIFTABLE VEHICLE FRAME
140 UNEARTHING UNIT WITH GAUGE RUNNER OR WHEEL
141 LIFTING OR TILTING MEANS FOR UNEARTHING APPARATUS
142 DRIVE DETAILS (E.G., CLUTCH OR GEARING)
143 FRAMES AND/OR WHEELED CHASSIS
144 MISCELLANEOUS (E.G., HOPPER OR COLLECTOR)

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DIGEST

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DIG 1 Peanut digger

CLASS 172 EARTH WORKING

1	PROCESSES
2	AUTOMATIC POWER CONTROL
3	.Motive power control
4	.Constant depth type
4.5	.Land leveller type
5	.Obstruction sensing type (includes plant sensing)
6	..Electrical
7	.Draft responsive
8	..Variable rate responsive
9	..With manual actuator to select type of condition sensed
10	..Sensitivity adjustment
11	..With excess draft release
12	..Overload lift type
13	LAWN EDGER
14	.With or convertible to non-earth working implement
15	.Rolling or driven cutter
16	..With fixed cutter or furrower
17	.With wheel or roller
18	.Impact or grapple
19	SOD CUTTER
20	.With means for vertical transverse cutting while moving
21	LAWN AERATOR OR PERFORATOR, OR PLUG REMOVER
22	.Earth removing
23	DRIVEN FROM OR GUIDED BY STATIONARY OBJECT, OR ANCHORED
24	.Around tree or stake
25	.Rotatable about vertical axis
26	.Guided by surface track or previously formed shoulder
26.5	.Dragline scraper
26.6	..Scraper part rearranged upon reverse movement
27	WITH MEANS FOR CUTTING OR SHREDDING PLANTS WITHOUT SOIL DISTURBANCE
28	.Driven
29	WITH MEANS FOR SHIFTING SURFACE MATERIAL WITHOUT SOIL DISTURBANCE
30	.Driven shifting means
31	.Combined with rolling or vertically acting transverse cutter
32	WITH SEPARATING AFTER EARTH WORKING
33	WITH POWER DRIVEN MOLDBOARD, CONVEYER OR HANDLER
34	COMPLETE APPARATUS ADAPTED FOR USE UPSIDE DOWN
35	WITH DRIVE MEANS FOR TOOL OR CLEANER
36	.Subsurface shears or nippers
37	.Tool rotated by attendant
38	.With obstruction feeling device for moving or releasing implement
39	.With cleaner or comminutor spaced from ground surface
40	.Vibrating tool
41	.Attendant supported tool
42	.Guided by walking attendant
43	..With ground support vertically adjustable relative to frame
44	.Subsurface shaft or bar (e.g., rod weeder)
45	.Flails
46	.Coaxial tools oppositely rotated
47	.With specific relationship of mast-type hitch (i.e., three-point hitch) to implement
48	.Plural driven tools
49	..Contiguous cooperating or intermeshing rotary ground engaging tools
49.5	...Rotating about vertical axes
50	..Diverse tools
51	...All rotary
52	....Parallel axes
53	...Rectilinearly reciprocating tool
54	...Oscillating tool
54.5	..Tool reciprocates or oscillates within a generally horizontal plane
55	..Plural groups of disks
56	..Staggered tools
57	..Laterally spaced tools
58	...Longitudinal axes
59	...Vertical axes
60	...Transverse axes
61	.Intermittent drive for tool
62	..With spring return
63	.With non-driven tool (e.g., plow, harrow, drag, scraper, knife or roll, etc.)
64	..Non-driven furrow opener and driven dam former
65	..Interdigitating non-driven and driven tools
66	..Cooperating driven cleaner or comminutor and contiguous tool
67	..Driven comminutor at outlet of earth guide
68	..Rolling tool
69	...With tool drive from rolling tool
70	...Fore-and-aft non-driven tool
71	..Non-driven tool follows path of driven tool
72	...Leveling drag or furrow shaper
73	..Staggered driven and non-driven tool (e.g., cotton chopper, etc.)
74	.With power take-off from tool drive to adjust tool
75	.Interconnected tool lift and drive control
76	.Implement with ground support for depth control
77	..Vertically biased implement
78	..Vertically adjustable ground support
79	..Tool driven from prime mover on vehicle
80	.With wheel substitute (e.g., runner, etc.)
81	.With plant deflector or protector
82	.Driven tool selectively shiftable along line of travel
83	..Tool drive interrupted by shifting tool
84	.Simultaneously reciprocating and oscillating blade having elongated shank
85	..Transverse chopping type
86	...With plural cranks or cams driving each blade
87	...Means for varying contour of path of blade
88	..With plural cranks or cams driving each blade
89	..Means for varying contour of path of blade
90	.Irregular or off-center ground-engaging wheel or support
91	.Blade movable with respect to cyclically driven carrier
92	..With means for moving blade
93	...Rectilinearly reciprocating blade
94	...Blade oscillating arcuately or swivelly with respect to rotary carrier
95	...By cam or crank
96	..Blade flexible or with yieldable mount on carrier
97	.Compound motion for tool (e.g., reciprocating and oscillating, reciprocating and rotating)
98	.Tool mounted for lateral shifting
99	..About generally vertical axis
100	.Blade on endless driven belt or chain
101	.Tool guided for rectilinear reciprocation

	WITH DRIVE MEANS FOR TOOL OR CLEANER
	.Tool guided for rectilinear reciprocation
102	..Tool moves in horizontal, transverse path
103	.With overload relief or clutch in drive train (e.g., overload release, etc.)
104	..Unidirectional clutch in drive from ground wheel
105	.Driven from rolling or driven ground wheel
106	..Belt or chain drive
107	.Tool driven about horizontal, longitudinal axis
108	..Rotary driven tool
109	...Adjustable tooth or blade
110	.Tool driven about generally vertical axis (e.g., oscillating choppers, etc.)
111	..Rotary driven tool
112	.With deflector or shield for thrown material
113	..Laterally directed outlet flow
114	.Specific propelling means
115	..Tool steers implement
116	..Tool propels implement
117	.Tool freely or yieldably mounted on chassis
118	.Tool driven about axis transverse to draft line
119	..Screw or spiral rib, blade or tooth row
120	..Disk or planar cutter (e.g., saw, etc.)
121	..Laterally extending bar or blade with skeleton support (e.g., lawn mower type, etc.)
122	..Drum with teeth or blades
123	..Rotary driven tool
124	.Tool driven about diagonal axis
125	.Tool drive details
126	WITH EARTH MARKER
127	.Marker shiftable on turning
128	.Marker adjusted upon raising implement
129	.Ground wheel operated marker control
130	.Multiple interconnected markers
131	..Markers on laterally shiftable member
132	.Marker swingable about longitudinal axis to both sides
777	SCRAPER SUPPORTS NARROW DEPENDING TOOL
778	.Tool supporting clamp means engage upper and lower edges
779	SCRAPER POSITION AUTOMATICALLY CONTROLLED BY LINKAGE FOR LEVELLING
780	SCRAPER BETWEEN WIDELY SPACED FRONT AND REAR GROUND SUPPORTS
781	SCRAPER BETWEEN FRONT AND REAR GROUND SUPPORTS OF VEHICLE
782	.With laterally offset inclined shoulder forming tool
783	.With scraper attached ground support
784	.With diverse tool or portion
785	..Non-scraping tool precedes and spaced from scraper
786	.Plural scrapers
787	..Spaced and in same path
788	.Push frame for scrapers
789	.Actuator for bodily shifting scraper subframe draft connection
790	.Counterbalance means for scraper adjustment
791	.Three or more independently operable scraper actuators
792	..Scraper adjustable about vertical axis of annular support
793	...Actuator for laterally shifting support
794	.Spring biased into ground contact
795	.Specific actuator between frame and scraper
796	..For adjustment about vertical axis
797	..For adjustment about longitudinal axis
798	.Actuator for tilting wheel relative to vehicle frame
799	.Specific means for horizontally angling wheel relative to vehicle frame
799.5	TOWED SCRAPER WITH GROUND SUPPORT WHEELS
133	DIVERSE TOOLS
134	.One located in path of implement wheel
135	.One implement surrounds another
136	.Tools usable alternately only
137	.With means to vary spacing of tools upon turning
138	.With interconnected vertical adjustment
139	..Plow and colter
140	.With independent means for vertical movement
141	.Interconnected adjustment of horizontal angle of rolling and position of diverse tool
142	.Including spring formed tool or standard
143	.Including intermittently rolling tool
144	.Colter, jointer and plow
145	.Three or more diverse implements following same path (A, B, C, or A, B, A,)
146	..Four or more
147	...Alternately diverse (A, B, A, B)
148	..Longitudinally spaced like implements with intermediate diverse implement (A, B, A)
149	..Including rolling tool
150	...Smooth levelling roller
151	...Diverse rolling
152	.At least four alternately diverse laterally spaced tools (A, B, A, B)
153	..Alternate rolling and non-rolling
154	..All rolling
155	.Laterally spaced like tools with intermediate diverse tool (A, B, A)
156	..Spaced rolling with intermediate nonrolling
157	..Spaced non-rolling with intermediate rolling
158	..All rolling
159	..Spaced right and left hand tools with intermediate symmetrical tool
160	..Including spike tooth
161	.Including implement alternating for right or left hand operation
162	..Reversal of implement adjusts diverse tool
163	.Jointer and plow
164	..Rolling jointer
165	.Including colter
166	..Rolling colter
167	.Fixed point or share with rotary moldboard
168	.Rotating tool with fixed moldboard
169	.Including tool rotatable about vertical axis
170	.Including smooth levelling roller
171	..Spaced from moldboard side of plow
172	..With diverse rolling tool
173	..With teeth
174	.Rolling and non-rolling
175	..Following same path
176	...Furrowing or ridging implement followed by furrow or ridge roller
177	...Rolling tool has circumferentially spaced blades, tines or the like
178	...Including disk gang
179	...Non-rolling tool group with laterally co-extensive rolling tool

DIVERSE TOOLS
.Rolling and non-rolling
..Following same path
180 ...Rolling precedes non-rolling (same path)
181 ....Concave furrowing disk with trailing tool
182 ..Laterally spaced
183 ...With scissors or shearing action between adjacent faces
184 .Diverse rolling
185 ..Spaced on same axis of rotation
186 ..Plane and dished disks
187 ..Differing in size
188 .Runner attached
189 .Including fabric or flexible tool
190 .Including vertical, longitudinally oriented disc or blade (e.g., as stabilizer)
191 ..Plural
192 .Including horizontal knife or cutter
193 .First tool with spaced trailing sweep
194 ..Sweep adjustable
195 .Second implement follows path of first
196 ..Including subsoiler
197 ..Teeth and scraper, leveller or drag
198 ..Including teeth
199 ..Including drag, scraper or levelling blade
200 ...Proceeded by implement of different type
201 .Laterally spaced
202 ..Spaced from moldboard side of plow
203 ...Connected to moldboard or handle
204 ALTERNATING FOR RIGHT OR LEFT HAND OPERATION (OTHER THAN SCRAPER)
205 .Draft revoluble on transverse axis
206 .Interrelated tool shift and lateral movement of draft member
207 ..Draft member reversed
208 ..Draft member latch control
209 .Interrelated tool lift and shift
210 ..Mast type hitch
211 ..Lift by ground support manipulation
212 .Interrelated tool shift and ground support manipulation
213 .Tools oriented for movement in opposite directions
214 ..Wheeled frame with reversible draft member
215 ..Tilting beam
216 ..Pivoted about spaced transverse axes, or translated
217 ..With movable deflector
218 .Shiftable moldboard
219 .Tool shifted for opposite throw
220 ..Reversible disk with reversible cleaner
221 ..Plural tools shifted about individual vertical axes
222 ...With translational movement of axes
223 ..Moldboard type shiftable about longitudinal axis
224 .Axially rotatable implement
225 ..With actuator
226 ...Gearing
227 ....Chain or cable
228 .Parallel separate tools
229 ..Interconnected for simultaneous raising and lowering
230 ..Independently operable
231 ...Power derived from ground wheel
232 .Oblique axis in longitudinal vertical plane
233 WITH OBSTRUCTION FEELER FOR MOVING OR RELEASING IMPLEMENT TO AVOID OBSTRUCTION (INCLUDES DAM FORMER)
234 .Relatively movable
235 ..Latch releasing
236 GROUND ENGAGEABLE DRAFT RESPONSIVE LEVER
237 .Roll over type implement
238 GROUND SUPPORT MOVED VERTICALLY RELATIVE TO FRAME BY DRAFT MEANS
239 DRAFT, PITCH OR GROUND LEVEL RESPONSIVE DEPTH CONTROL
240 WITH GROUND SUPPORT ENGAGEABLE WITH GROUND FOR TRANSPORT ONLY
241 .Apparatus inverted to engage ground support with ground
242 .Implement tiltable on longitudinal axis
243 .Tool changeable to or replaced by ground support
244 .Tool and ground support moved together relative to frame
245 CONVERTIBLE; OR CHANGEABLE BY DISASSEMBLY OR ASSEMBLY
246 .To land vehicle with body
247 .To device classifiable in another class
248 .To different type of hitch
249 .Plural simultaneously usable tools to single tool
250 .Changeable by disassembly or assembly
251 ..Tool changeable to diverse tool
252 ...Tool plus added part forms diverse tool
253 ..Tool added or substracted
254 ..Tool rearranged on support structure
255 TURN LIFTS TOOL OFF OR LOWERS TOOL INTO GROUND
256 PROPULSION UNIT GUIDED BY WALKING ATTENDANT OR PART OF ARTICULATED VEHICLE
257 .Riding attendant
258 .Endless track or single driven wheel
259 .With vertically adjustable wheel
260 .With actuator for moving earth working element vertically
260.5 HAVING TOOL OVERLOAD SHIFT CONTROLLED BY A FLUID PRESSURE DEVICE
261 OVERLOAD SHIFTING
262 .Alternate tool brought into operation upon shift
263 .Actuator released
264 .Against spring return device
265 ..Swinging about fixed pivot axis
266 ...Including toggle linkage
267 ....Toggle adjustable
268 ....Toggle links at acute angle
269 .Resilient latch
270 .Friction lock
271 .Frangible lock (e.g., shear pin, etc.)
272 WITH MEANS TO FACILITATE MOUNTING OF IMPLEMENT ON MOTOR VEHICLE
273 .Tool forward of rear of motor vehicle
274 .Implement has ground support
275 .Self-coupling by horizontal movement
810 MOUNTING FOR PUSHED TOOL AT END OF MOTOR VEHICLE
811 .Transversely mounted blade (e.g., bulldozer, etc.)
812 ..With valve or pump for hydraulic control system
813 ..Fluid line specifically arranged, or shield for system component
814 ..Having means controlling drive for interconnected vehicles
815 ..Contiguous, relatively adjustable blades; or blade having relatively adjustable earth-engaging parts
816 ..Blade mounting includes resilient connection
817 ..Removable attachment for general purpose vehicle
818 ..Blade angle adjustable in a horizontal plane
819 ...Power-operated adjusting means

MOUNTING FOR PUSHED TOOL AT END OF MOTOR VEHICLE
.Transversely mounted blade (e.g., bulldozer, etc.)
..Blade angle adjustable in a horizontal plane
...Power-operated adjusting means
820 ....Blade angled about fixed, central, generally vertical axis
821 .....And tilt of blade adjustable in a generally vertical plane
822 ....And tilt of blade adjustable
823 ...And tilt of blade adjustable
824 ..Having adjustable tilt of angularly fixed blade
825 ...About a pivot axis fixed to mounting
826 ...Including adjustable length device between mounting means and upper corner portion of blade
827 ..Having means to prevent lateral movement of mounting or blade
828 ..With power means for raising and lowering blade
829 ...Including elongated flexible element (e.g., cable) connecting power means to tool or mounting means
830 ...Power means is fluid servomotor
831 ....Plural servomotors
832 ..With blade-carried ground support
833 .Tool prepares wheel path for passage of wheel
834 .With tool-carried ground support
278 WITH WHEEL STEERING OR ACTUATOR FOR HORIZONTALLY ANGLING WHEEL AXIS
279 .Implement part interconnected with motor vehicle steering means
280 ..Implement wheel steered
281 ..Transverse tool bar laterally shiftable
282 .Wheel on trailing implement responds to turning movement
283 ..Interconnected with adjustable tool
284 ..With additional angular adjustment of wheel
285 ..Rear wheel turned or controlled
286 .Wheel on non-propelled device
287 ..Wheel interconnected with tool
288 ..Plural interconnected relatively movable wheels
289 ...Transversely aligned stub shafts
290 ..Swinging axle
291 ..Wheel behind tool
292 SPECIFIC PROPELLING MEANS
293 SERIES OF LIKE ELEMENTS SEQUENTIALLY OPERATED BY POWER CYCLE
294 .Sequentially operated servo-motors
295 .Tool forward of rear of motor vehicle
296 .Shaft with spirally arranged projections
297 TOOL FORWARD OF REAR OF MOTOR VEHICLE
298 .With ground support
299 .Power actuator with cut-out or lock-out means
300 .With rearwardly mounted tool
301 ..Tools actuated by independent power units
302 ...Front and rear independent
303 .Power actuator with manual adjusting or supplemental manual actuating means
304 .Tools independently actuatable
305 .With means for moving tool laterally
306 .Connected to front axle
307 .Parallelogram type lift
308 .With push bar
309 .Pivoted on horizontal diagonal axis
310 PLURAL WHEELED IMPLEMENTS
311 .Outrigged implement adjustable inwardly
312 .Implement draft connection forwardly of rear of self-propelled vehicle
313 .Laterally spaced with separate draft tongues
314 .Implements in echelon (e.g., gang plows, etc.)
315 ACTUATOR ON TRAILING IMPLEMENT, CONTROLLED FROM PROPELLING VEHICLE
316 .Servo-motor on implement
317 ACTUATOR ON VEHICLE FOR RELATIVELY MOVING PARTS OF TRAILING IMPLEMENT
318 .Actuator on vehicle moves implement ground support vertically relative to implement frame
319 ..Interconnected means for moving hitch
320 .Disk gang angling
321 ACTUATOR ON VEHICLE FOR MOVING WHEELED IMPLEMENT
322 WITH ACTUATOR FOR ROCKING TOOL ABOUT WHEEL AXIS
323 .Unstable wheeled frame moved by actuator
324 WITH ACTUATOR ON TRAILING GROUND SUPPORTED FRAME FOR MOVING DRAFT MEANS LATERALLY OR VERTICALLY
325 .Tool rigidly connected to tongue
326 .Vertically
327 ..With vertically adjustable ground support
328 ...Interconnected means for adjusting draft means and ground support
329 GUIDED BY WALKING ATTENDANT; SUPPORTED, PROPELLED, OR HELD IN POSITION BY ATTENDANT
330 .With seat for moving hitch
331 .Hitch guided relative to supporting frame
332 .Tool manipulated with respect to mounting frame
333 ..Arched wheel frame (i.e., straddle row, etc.)
334 ...Seat counterbalanced beam
335 ...With spring biasing means
336 ....Spring biased upwardly during operation
337 ...Combined implement lift and wheel adjustment
338 ...Tongueless, animal draft
339 ....With balancing means
340 ...Multiple plant row type
341 ...With added intermediate tool
342 ...Cross connected drag bars
343 ...Foot operated
344 ...With support bracket for transport
345 ..Manipulated about longitudinal axis
346 ..Plural tools independently or oppositely manipulable
347 ..Spring biased
348 ..Vertically manipulated
349 .Rolling tool
350 ..Handle swingably mounted on axis of tool
351 .Guided or propelled by walking attendant and with ground support or draft means
352 ..With stepper propulsion means
353 ..With body harness or engaging means
354 ..With wheel
355 ...Alternately usable tools rocked about wheel axis
356 ...Plural longitudinally spaced wheels
357 ...Handle forward of tool
358 ...Tool forward of wheel
359 ...Tool and handle relatively vertically adjustable
360 ..With wheel substitute (e.g., runner, etc.)
361 ..Handle connected to tool or runner

GUIDED BY WALKING ATTENDANT; SUPPORTED, PROPELLED, OR HELD IN POSITION BY ATTENDANT
.Guided or propelled by walking attendant and with ground support or draft means
362 ..Tool standard connected to handle
363 ..Plural handles associated with relatively adjustable tools
364 ..Handle mounted tool adjusting, latching or locking mechanism
365 ..Tool and handle relatively adjustable
366 ...Vertically
367 ..Multiple handles connected to multiple longitudinal tool carrying beams
368 ..Plural handles connected to opposite sides of longitudinal beam
369 ...With brace member
370 .With attendant attaching means
371 .Hand tool
372 ..Adjustable
373 ...Plural tools relatively adjustable
374 ....At least one tool immovably secured to handle
375 ..Alternately usable diverse tools or parts
376 ..Loop type
377 ..Channel type
378 ..Plural prongs, teeth or serrations
379 ...Plural rows
380 ...Made from sheet material
381 ..Non-planar earth working portion
382 MULTIPLE LEVEL TOOLS
383 AXIS OF ROTATION OF WHEEL LOCKABLE OR ANGULARLY ADJUSTABLE
384 .With actuator for tilting in a vertical plane
385 .Adjustable stop
386 .Lockable against free swinging
387 WITH WHEEL SUBSTITUTE (E.G., RUNNER, ETC.)
388 .With wheel
389 .Spring tooth implement
390 ..Parallel pivoted tooth bars
391 .Spike tooth implement
392 .Plural runner supported implements relatively movable during operation
393 .Spaced parallel runners with tool mounted therebetween
394 .Disk type tool
395 WITH GROUND SUPPORT VERTICALLY ADJUSTABLE RELATIVE TO FRAME
396 .Vertically adjustable or selectively lockable hitch
397 .Tool land ground support moved together relative to frame
398 ..Linkage to tool
399 .With power take-off from plural wheels
400 .Actuator and interconnected means for adjusting wheels on different axles
401 ..Three or more adjustable wheels on different axles interconnected
402 ...With power take-off from self-adjusted wheel
403 ..With power take-off from wheel
404 ...Wheel adjusted by own power
405 ..One wheel translates another swings
406 ..With additional actuator changing relative position of wheels
407 .Power operated adjustment
408 ..Wheel actuates its crank axle mount
409 ...Wheel lockable to crank axle arm
410 ...Intermittently rotatable member swingable with crank
411 ...."Constant height" depth adjustment
412 ...Swingable arm engageable with wheel
413 ..Servo-motor adjusting means
414 .Flexible or lost motion connection to actuator
415 .Translating motion
416 ..One ground support translates and another swings
417 ..Parallel links
418 ..With actuator
419 ...Screw jack type
420 ...Rack and pinion or ratchet type
421 .Plural ground supports vertically adjustable relative to each other and the frame
422 .Crank axle with angularly spaced wheel carrying arms
423 .With actuator
424 ..Spring assisted
425 ..Gearing
426 ...Worm gear
427 ...Screw jack type
428 ...Rack and pinion or ratchet type
429 ..Manually operated lever rigid with crank axle
430 WITH INDICATING OR SIGHTING MEANS
431 WITH SEAT OR ATTENDANT'S STATION
432 .Plural
433 .Riding attachment
434 .Movable to non-use position
435 .Operator changes position or seat adjustable
436 .Mounted on transverse member connecting plural implements
437 WITH TOOL SHARPENER
438 COMBINED
439 MAST TYPE HITCH (E.G., THREE POINT HITCH, ETC.)
440 .Angled gangs liftable as a unit
441 ..Tandem gangs
442 ...With actuator for angling groups relatively
443 .Struts on trailer or between implement parts
444 .Hitch quadrilateral modified during lift
445 .With means operated by vertical hitch movement
445.1 .Including blade, scraper, or smoother
445.2 ..Angularly adjustable about vertical axis
446 .Laterally adjustable tool
447 ..Rockable about vertical axis
448 .With auxiliary vertical adjustment
449 .Tool movable relative to mast while earth working
450 .Sway limiting means or swayable tool
451 .With tool frame or bar extending beyond sides of vehicle
452 WITH ACTUATOR ADAPTED TO LIFT TOOL FOR TRANSPORT ON WHEELED FRAME OR BROADLY CLAIMED IMPLEMENT
453 .Actuator electrically powered
454 .Angled gangs lifted as a unit
455 ..Tandem gangs
456 .Central group liftable vertically, side groups movable inwardly
457 .With means to restrain lateral sway when raised
458 .Vertical movement interrelated with another
459 .Pivotable about longitudinal axis (e.g., lateral levelling, etc.)
460 ..Tool independently vertically adjustable at transversely spaced points
461 .Tool lifted with respect to stationary or relatively movable cleaner
462 .Plural tools, individually spring biased down, lifted as unit

WITH ACTUATOR ADAPTED TO LIFT TOOL FOR TRANSPORT ON WHEELED FRAME OR BROADLY CLAIMED IMPLEMENT
463 .Lift actuator moves with tool or forms removable unit therewith
464 .Servo-motor forces tool down
465 .Servo-motor with follow-up control (e.g., motion responsive position control, etc.)
466 .Tool held raised for relieving load on servo-motor
467 .With shiftable hitch causing vertical movement
468 .Plural tools, independently actuatable
469 ..By single selectively connectable actuator
470 ..With separate actuator for concurrent lift or with interlock
471 ..Three or more independent actuators
472 .Plural tools simultaneously raised, individually lowered
473 .Tool differentially or sequentially lifted at longitudinally spaced points
474 .Tool rocked about independently vertically adjustable transverse axis
475 ..Plural longitudinally spaced actuators
476 .With lateral adjustment
477 ..Tool adjustable about vertical axis
478 .Tool and lift actuator on opposite sides of transverse pivot axis
479 .Tool lifted forward of transverse pivot axis
480 .Tool swung about freely shiftable or delayed pivot
481 .With separate latch
482 .Tool swings about rock shaft axis
483 .Translatable tool
484 ..By parallel links
485 .Power actuator with manual adjusting or supplemental manual actuating means
486 ..Manual actuation coextensive with power
487 ..Constant height depth adjustment
488 .Single lift actuator for plural relatively movable tools
489 ..Tools relatively moved during lift
490 .Rotary drum actuator
491 .Servo-motor actuator
492 .With power take-off for actuator
493 ..Position controlled power disengagement
494 .Overcenter or toggle holding means
495 .Foot operated actuator
496 ..With combined or optional hand actuation
497 .Tool spring biased during operation
498 ..Biased to neutral position
499 ..Spring means alternately biases tool in opposite directions
500 ..Tool spring pressed downwardly
501 .Lost motion connection between actuator and tool
502 ..Flexible connector
503 .Actuator slidably connected to tool
504 .Screw actuator
505 .Tool connected to frame by bail
506 .Spring assisted or spring actuator
507 GROUND SUPPORT MOVABLE HORIZONTALLY
508 WITH GUARD, SHIELD OR PLANT DIVERTER
509 .Fender for deflected earth
510 ..Rotary
511 ..Perforated or screening type
512 ..Inverted U-shape
513 ..Laterally spaced fenders for inwardly thrown earth
514 .Weed turner or trash holddown
515 ..Spring biased or spring formed
516 ...Plural cooperating elements
517 .Plant deflector
518 ROLLING, ROTATING OR ORBITALLY MOVING TOOL
519 .Yieldable material rim (e.g., rubber, etc.)
520 .Tools on different axes in mutual driving relationship
521 .With power take-off from tool or wheel
522 .Axis substantially vertical
523 ..With vertically extending teeth
524 ...Positioning means engaging circumference
525 ...With weight
526 ...Plural tools
527 .Axis substantially longitudinal
528 .With means for stopping or retarding rotation
529 ..Positive stop
530 ...Wheel or motor controlled
531 .Wobble discs
532 .Screw or spiral
533 .Clutch between shaft and rotating element
534 .Wheel or roller with peripherally spaced plant saving means
535 .Detachable rim for disk
536 .Wheel, roller or gauge and axially adjacent tool on same axis
537 .Corrugated surface rollers
538 .Paired press rims (e.g., planter press wheels, etc.)
539 .Smooth roller with groove, rim or disk
540 .Tool has circumferentially spaced teeth, tines, blades or the like
541 ..With means for preventing ground engagement of teeth or blades
542 ..Tooth or blade on endless carrier
543 ..Spring tooth or blade
544 ..Spring moving or mounting means for tooth or blade
545 ..Blades or teeth change position relative to each other or rotating support during rotation
546 ...With means for causing movement
547 ..With cleaning means
548 ..Tooth or blade units on single axle
549 ...Tooth or blade units angularly adjustable on axle
550 ..Tooth or blade adjustable on carrier
551 ..Rolling tool spring biased into ground contact
552 ..Laterally extending bar or blade with skeleton support (e.g., lawn mower type, etc.)
553 ...Toothed bar or blade
554 ..Drum with axially spaced teeth or blades
555 ..Integral disk
556 ..Tooth or blade axially clamped to hub face (e.g., hoe wheel type, etc.)
557 .Rim with spokes
558 .With disk cleaning means
559 ..Rotatably mounted cleaning means
560 ..Cleaner for pair of converging disks
561 ..Cleaners for opposite sides of disk
562 ..Plural cleaners for single disk
563 ..Cleaners with common operator
564 ...Mounted on rock shaft
565 ...Operating means moves parallel to disk gang axis
566 ..Spring biased toward disk
567 .Disk gang and single disk on diverse axes
568 .Disk gang with movable or removable section

	ROLLING, ROTATING OR ORBITALLY MOVING TOOL
569	.Disks pivoted on vertical axes with interconnected means for moving them indentically
570	.With spring means other than for detent
571	..Spring is for tool group horizontal angling
572	..Spring acts to move tool vertically
573	...Plural tools, individually spring urged
574	.Plural disks with individual mount or axis
575	..Touching disks
576	..With interconnected means for adjusting a plurality of disks
577	.Reversible group
578	.With wheel (not on motor vehicle)
579	.Plural groups of disks
580	..Power operated actuator
581	..Groups changeable to different types of arrangements
582	..With independent lateral adjustment
583	..Vertically adjustable group
584	..Horizontally angularly adjustable group
585	...Groups of unequal length
586	...More than two laterally positioned groups
587	...Groups laterally spaced and unaligned
588	...Hitch longitudinally movable on tongue and groups abreast
589	...Turning connection offset from draft connection
590	....Latch responsive to tractor motion
591	...With manual actuator
592	....Concentric controls
593	....Separate handles for independent gang adjustment
594	....Double tandem groups
595	...Double tandem groups
596	...Tandem groups
597	....Toggle joint between groups
598	...Thrust means directly between group axles
599	.Disk gang
600	..Supported for tilting and horizontal angling adjustment
601	..Disks rotatable relative to axle
602	.Single disk freely swayable
603	.Disk horizontally angularly changeable
604	.Detailed disk structure per se
605	SHIFTABLE HITCH MOVES TOOL RELATIVE TO FRAME
606	WITH CLEANER
607	.Cleaner surrounds tooth
608	.Clearing roller
609	.For plural tools
610	.Scraper
611	WITH WEIGHT
612	FABRIC OR FLEXIBLE TOOL
613	PLURAL RELATIVELY MOVABLE TOOLS
614	.Tool pivots on pivoted member when member moves
615	..Tools connected to parallel pivoted bars
616	...Bars pivoted about vertical axis
617	....Also pivoted about horizontal axis
618	.Tools assume different angularity for opposite draft
619	.Plural tool groups relatively vertically movable because of operation
620	..Parallel transverse tooth bars
621	...Spring biased bars
622	...With actuator to vary inclination of teeth
623	..Groups abreast and in tandem
624	..Plural groups movably connected to forward transverse draft bar
624.5	...With parallelogram-type linkage
625	...With alternate draft means (spaced 90 degrees)
626	...Sectional draft bar
627	...Groups also connected to one another
628	..Similar groups arranged to form a triangular shape
629	..Three or more laterally spaced groups
630	..Groups pivoted to opposite sides of longitudinal draft member
631	..Groups movable about common longitudinal axis
632	..Group movable about oblique horizontal axis
633	..Group pivotal about intermediate transverse axis
634	.Parallel, pivotally adjusted tool bars
635	..With actuator
636	...Tools also adjustable about vertical or longitudinal axes
637	...Plural actuators, independently pivoted tool bars
638	...Gear
639	..Specific mounting for pivoted tool bar
640	.Tool group pivotally adjustable about horizontal axis
641	.Beam spreader of the pivoted yoke type
642	.Pair of tools cooperate to move earth to or from plant row
643	.Spring formed tool or standard
644	.Tools longitudinally adjustable to and from transverse alignment
645	.Tools relatively adjustable horizontally without causing vertical displacement
646	..Laterally adjustable tools, independently free to move vertically
647	..Tools simultaneously adjustable about their individual, spaced vertical axes
648	..Collapsible lazy tong group
649	..Tool groups relatively horizontally adjustable
650	...Also vertically adjustable
651	...Group pivoted about vertical axis
652	....V-shaped
653	.....Nested
654	..Main central beam, tools laterally adjustable relative thereto
655	..Tool adjustable vertically and laterally
656	..Tool laterally adjustable
657	.Relatively movable because of operation
658	..With interconnecting means to prevent independent lateral movement
659	.Adjustable about spaced horizontal axes
660	..Concurrent adjustment
661	.Vertically translatable tool
662	.Tool movable to non-use position
663	WITH ACTUATOR
664	.For relatively movable earth engaging parts
665	..Tool and runner
666	.For adjustment about longitudinal axis
667	.For lateral adjustment
668	.For vertical adjustment with respect to wheeled frame
669	WITH WHEEL; OR SUPPORTED ON WHEEL FRAME OR BROADLY CLAIMED IMPLEMENT
670	.All wheels on one side of tool
671	.Mounted on single longitudinal beam in tool path
672	..Wheel secured to tool
673	.Laterally adjustable tool
674	.With bracket to hold tool off ground

WITH WHEEL; OR SUPPORTED ON WHEEL FRAME OR BROADLY CLAIMED IMPLEMENT
675 .Vertically adjustable tool
676 .Tool follows wheel path
677 WITH DRAFT DETAIL
678 .Spring biased hitch
679 .Adjustable
680 ..Vertical
681 TOOL, STANDARD OR CONNECTION
682 .Tool flexed to change contour
683 .Latched in earth working position
684 .Tool pivots on member when member moves
684.5 .Frame-supported blade, scraper, or smoother drawn by vehicle
685 .Plural tools
686 ..Right and left hand type
687 ..Longitudinally spaced rows
688 ...Staggered
689 ..Closed geometrically shaped frame
690 ..V-shaped frame
691 ..Mounted on transverse or oblique tool bar
692 ...Angularly adjustable bar
693 ...Oblique bar
694 ..Laterally spaced tools
695 ...Tools in echelon (3 or more)
696 ...Tools on opposite side of longitudinal beam
697 ...Tools in transverse alignment
698 .Tool with laterally spaced standards
699 .Subsoilers
700 ..With separate vertically spaced earth working portion attached to same standard
701 .Ridgers
701.1 .Tool is transversely elongated blade (e.g., bulldozer)
701.2 ..Having removable corner bit
701.3 ..Having removable cutting edge
702 .Reversible part
703 ..Earth engaging means
704 ...Portion of earth engaging assembly
705 .Spring biased or formed tool or tool part
706 ..Plural earth engaging parts relatively movable during operation
707 ..Spring formed tool or standard
708 ...With separate or rigid earth working portion
709 ..Laterally biased
710 ..Pivoted tool biased beyond pivot
711 ..Leaf or torsion spring
712 .Tool assumes different position for opposite draft
713 .Tooth
714 .Plural earth engaging parts relatively movable because of operation
715 ..Rotary landslide
716 ..Movable moldboard for inverting furrow slice
717 ...Belt
718 ...Roller
719 .With add-on cutting or wearing element applied directly over, or onto, the original cutting element
720 .Subsurface blade (e.g., weeder, etc.)
721 .Non-rectangular, symmetrical type
722 ..Earth breaking part and separately attached wings
723 ...Draw cut point
724 ...Wings integral
725 ..With separable vertical cutter on centerline
726 ..Having separable parts jointed at centerline
727 ..With attached runner or depth gauge
728 ...With additional blades attached to runner
729 ...Adjustable
730 ..Winged
731 ..Lateral extent decreases upwardly
732 ..Triangular blade
733 ..Constant height and V-shape
734 .Adjustable
735 ..To present different working portion
736 ..Relatively adjustable earth engaging parts
737 ...Element adjusted for wear compensation
738 ...Relatively adjustable tool and runner
739 ..Adjustable about horizontal transverse axis
740 ...Tool adjustably connected to standard
741 ..Laterally adjustable
742 ...Adjustable about a vertical axis
743 ...Adjustable about a longitudinal axis
744 ..Vertically adjustable
745 .Welded
746 .With portion extended beyond landslide
747 .Specific material
748 .Pivoted tool
749 .Having separable parts interconnected without detachable fastening means
750 ..Self-engaging snap fastener
751 ..Captive fastener or wedge tightened or engaged after assembly
752 .With separable vertical planar longitudinal cutter (e.g., colter, etc.)
753 .Interlocked or interfitted parts
754 .Share and furrow slice inverting moldboard
755 ..Heating or lubricating
756 ..Skeleton
757 ..Furrow slice retainer
758 ..Furrow slice cutter or breaker
759 ..With additional element juxtaposed to moldboard
760 ..Specific moldboard shape
761 ..Serrated, toothed or notched point or share
762 .Specific tool and standard connection
763 .Specific standard and beam connection
764 .With separate runner, gauge, shoe or landslide
765 .Specific tool shape
766 ..Tool with parallel fingers or blades
768 ..Draw cut type
769 ..Separable parts
770 ..Angularly related tool surfaces
771 ..With curved surface
772 .Removable tool portion (e.g., replaceable cutting or wearing element for tool)
772.5 ..Portion is cutting edge
773 .Specific standard
774 ..With lateral offset
775 ..Braced
776 MISCELLANEOUS (E.G., FRAMES, ETC.)

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CROSS-REFERENCE ART COLLECTION

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900 PLANT THINNERS

CLASS 173 TOOL DRIVING OR IMPACTING

1 PROCESSES
2 AUTOMATIC CONTROL OF POWER OPERATED MEANS
3 .Responsive to condition of cleansing means
4 .Tool advance causing or controlling means
5 ..Responsive to torque or speed condition of drive
6 ...With additional control by means sensing condition of advance means
7 ...Drive motor motivating energy condition initiates control
8 ....Motive fluid flow or pressure condition of drive motor
9 ...Fluid flow or pressure operated advance means
10 ..Responsive to length of stroke of means reciprocating hammer head or tool
11 .Drive means responsive to condition of advance causing or controlling means
12 .Drive means responsive to torque or speed condition
13 DRIVE CONTROLLED BY RELATIVE AXIAL MOVEMENT OF TOOL
14 .Reciprocating drive member connected to pulsing fluid column
15 .Drive motor controlled
16 ..Modified internal motor operation
17 ...Motor piston movement modified relative to motive fluid port
18 DRIVE CONTROLLED BY RELATIVE MOVEMENT OF ADVANCE CAUSING OR CONTROLLING MEANS OR MANIPULATING HANDLE
19 SELF-ACTING ADVANCE AND RETRACTION CYCLE
20 WITH INDICATING OR SIGNALING MEANS
21 .Distance of advance
22 WITH VEHICLE SUPPORT FOR DRIVE
23 .Nontransporting means to support vehicle during tool operation
24 .Movement of vehicle causes tool advance
25 .Vehicle motor mechanically coupled to drive tool
26 ..Drive gearing displaced relative to source of power
27 .Vehicle motor and drive motor powered by same energy source
28 .Drive structure moved to nonuse position for transport
29 CONVERTIBLE
30 WITH MEANS ENGAGED BY PART OF HUMAN OTHER THAN HAND
31 WITH WORK ENGAGING MEANS SUPPORTING DRIVE
32 .Anchored to work
33 ..Balanced with respect to axis of tool advance
34 .Structure extends between opposed points
35 ..Tool advanced laterally of structure
36 .Structure engages work at point diametrically opposed to tool
37 .Relatively adjustable work engaging elements
38 SWINGING ARM CAUSES ADVANCE WITH MEANS TO GUIDE RECTILINEAR TOOL ADVANCE
39 WITH MEANS TO ADJUST POSITION OF AXIS OF TOOL ADVANCE
40 .Drive gearing displaced relative to source of power
41 ..With plural relatively displaced gearing sections
42 .Plural adjustments
43 ..Powered by motor or mechanism
44 .Adjustment powered by motor or mechanism
45 WITH MEANS TO SPACE AXIS OF TOOL ADVANCE RELATIVE TO PRIOR POSITION
46 COMBINED
47 DRIVE ADJUSTABLE TO COMPLETELY CHANGE KIND OF DRIVE
48 .Adjustable to impacting device
49 DRIVE BY MEANS REACTING TO ROTATING ECCENTRIC MASS
50 POWER PATHS TO PLURAL TOOLS FROM SINGLE DRIVE
51 .Drive plural means to reciprocate hammer heads or tools
52 SINGLE ADVANCE CAUSING OR CONTROLLING MEANS OR MANIPULATING FOR PLURAL DRIVES
53 HAMMER OR TOOL SHAFT RECIPROCATED BY GRIPPING MEANS WHICH RELEASE OR YIELD TO PERMIT ADVANCE
54 .With fixed means cyclically contacted by grip structure
55 ..Contact moves grips out of shaft engagement
56 .Means concurrently moving shaft about an axis
57 WORK CLEANSING
58 .Controlled by relative movement between drive and tool, advance causing or controlling means or manipulating means
59 .By motive fluid for drive motor or advance causing or controlling motor
60 ..Motive fluid does not contact work but induces flow of another fluid
61 ..Additional cleansing fluid source
62 ...With means providing for independent use of either fluid
63 ...Motive fluid for cleansing bypasses motor chamber
64 ..Supply for cleansing bypasses motor chamber
65 ...Controlled by motor inlet throttle valve
66 ..Fluid supplied through working chamber of idled cyclically operable drive motor
67 ...Supplied through distributor maintained in fixed position
68 ....Motor inlet throttle valve maintains distributor fixed
69 ....Motor exhaust throttled
70 ....Mechanically maintained in fixed position
71 ..With means to inhibit return of detritus into cleansing passage
72 ..Fluid supplied through chamber of advance causing or controlling motor
73 ..Directed into passage in tool
74 .Plural cleansing fluid sources
75 .Cleansing fluid pump operated by drive
76 ..Pump comprises hammer head or impact transmitting anvil
77 .Cleansing fluid controlled by control for drive or advance causing or controlling means
78 .Cleansing fluid passage through hammer head
79 .Drive motor or advance causing or controlling motor provided with passage for cleansing fluid
80 .Cleansing fluid passage in impact transmitting anvil
81 MEANS TO CONTROL ADVANCE AND CYCLICALLY RECIPROCATE A CABLE-OPERATED HAMMER OR TOOL
82 .With means to synchronize advance with reciprocating drive
83 .Advance means bodily reciprocated

MEANS TO CONTROL ADVANCE AND CYCLICALLY RECIPROCATE A CABLE-OPERATED HAMMER OR TOOL
84 .Hammer or tool cyclically disconnected from cable
85 .With plural cable drums
86 .Relatively elevated guide engaging cable between drive and hammer or tool
87 ..Drive is oscillating cable drum
88 ..Drive is oscillating cable engaging means
89 ...Drive permits hammer or tool to freely drop
90 IMPACTING DEVICES (E.G., HAMMERS)
91 .Selective axial direction of impact
92 .With means to grip and release tool in timed relation to impact
93 .With anvil arranged to transmit torsional impact to tool
93.5 ..Rotary tool drive having torque responsive impact
93.6 ...Hammer head reciprocates along rotary axis
93.7 ..Torque transmitted from hammer head traveling axially only
94 .Hammer head moves in arcuate path or rotates
95 ..Hammer head reciprocates along fixed transverse axis
96 ...Arcuate or rotary movement selectively releasable or variable independent of reciprocation
97 ...Arcuate or rotary movement transmitted to tool
98 ..Hammer head moves out of arcuate or rotary path
99 ...Movement out of path is about rotating pivot
100 ..Hammer head movement is oscillatory
101 .Plural relatively moved hammer heads
102 ..One impacts another
103 ..Concentric
104 .With means for rotating tool
105 ..Rotated by separate motor
106 ...Rotation motor exhaust is motive fluid for hammer motor
107 ...Motive fluid supplied to rotation motor is hammer motor exhaust
108 ...Reciprocating type separate motor
109 ..Rotated by hammer head or drive for hammer head
110 ...Rotation is intermittent or oscillatory
111 ....Rotary drive path is directly through hammer head
112 .With means to cause or control advance of hammer head
113 ..Advance operated by hammer drive or actuated in response to hammer vibration
114 .With means to reciprocate tool
115 .Length of cyclic travel of hammer head selectively adjustable
116 .Hammer head driven by pulsating fluid
117 .Hammer head driven by electric motor
118 .Spring bodily cyclically moved with hammer head
119 .Hammer head driven by spring
120 ..With means to adjust spring force
121 ..Spring retracts hammer head
122 .Hammer head driven by relatively moving motion transmitting element
123 ..Rotary cam
124 ..Cyclically disconnected from motion transmitting element
125 .Hammer head constitutes or fixed to drive motor cylinder
126 .Hammer head comprises plural parts or diverse materials
127 ..Piston of drive motor
128 .Impact transmitting anvil
129 ..Attachable at plurality of points along tool
130 ..Adapted to fit tool noncircular in cross section
131 ..Formed of plural transmitting part or separate layers
132 ..With means to directly connect anvil to tool
133 ..Anvil retained for limited movement
134 .Hammer head constitutes piston of drive motor
135 ..Motive fluid applied to striking face
136 ...Supplied through passage in striking face
137 ...Reduced area striking face
138 ..With means to conduct motive fluid to or from striking face
139 .With impact cushioning means
140 DRIVE GEARING ADVANCES RELATIVE TO SOURCE OR POWER
141 ADVANCE CAUSING OR CONTROLLING MEANS
142 .Operated solely by vibrations from reciprocating element in tool drive
143 ..Intermittent unidirectional rotation of advance element
144 .Reciprocatory drive and advance originate from same mechanical element
145 .Rotary drive and advance originate from same mechanical element
146 ..Friction clutch or torque yielding couple in connecting train
147 .Driven flexible member causes advance
148 .Tool advances relative to drive
149 ..Advance means engageable with tool shaft at any point
150 ..Advance motor working member coaxial with tool shaft
151 ..Cable means controls advance
152 .Motor causes or controls advance
153 ..Drive motor exhaust is motive fluid for advance motor
154 ..Drive motor generates advance motor motive energy
155 ..Advance motor exhaust is motive fluid for drive motor
156 ..With lock or brake operable during advance
157 ..Common control element for advance and drive motors
158 ...With relatively movable advance motor control element
159 ..Common energy supply for advance and drive motors
160 ..Advance means includes relatively movable transmission element
161 ..Advance motor control in tool drive manipulating handle
162.1 INCLUDING MEANS TO VIBRATIONALLY ISOLATE A DRIVE MEANS FROM ITS HOLDER
162.2 .Handle type holder
163 MEANS TO DRIVE TOOL ABOUT AN AXIS
164 .Means to hold and relatively rotate sections of tool shaft
165 .Relatively fixed drive for an advancing tool
166 ..With advance stopping means having selectively operable actuating mechanism
167 ..With advance stopping means adapted to grip tool shaft at any point
168 PASSAGE IN MANIPULATING HANDLE FOR DRIVE MOTOR MOTIVE FLUID

	PASSAGE IN MANIPULATING HANDLE FOR DRIVE MOTOR MOTIVE FLUID
169	.Motive fluid control valve in handle passage
170	DRIVE CONTROL OPERABLE BY HAND ENGAGING MANIPULATING HANDLE
171	MISCELLANEOUS
	********************************
	DIGESTS
	********************************
DIG 1	Operable submerged in liquid
DIG 2	Sound muffling
DIG 3	Lubrication
DIG 4	Liquid operated

CLASS 174 ELECTRICITY, CONDUCTORS AND INSULATORS

DECEMBER 1990

1	MISCELLANEOUS
2	LIGHTNING PROTECTION
3	.Rods
4 R	AIR TERMINALS
4 C	..Coated and radioactive
5 R	ELECTRIC SHOCK HAZARD PROTECTIVE DEVICES
5 SB	..Shock protection, body insulation
5 SG	..Shock protection, grounding devices
6	EARTH GROUNDS
7	.Driving type
8	WITH FLUIDS OR VACUUM
9 R	.Current conductive fluid and/or vacuum
9 F	...Conductive fluid
10	.With cable or conduit preinstallation devices
11 R	.With fluid-condition responsive and/or indicating means
11 BH	...Bushings
12 R	.With expansion and contraction means
12 BH	...Expansion bushings
13	..Built into conduit or cable
14 R	.With fluid maintenance or conditioning means
14 BH	...Bushings
15.1	.With cooling or fluid feeding, circulating or distributing
15.2	..By heat pipe
15.3	..For bushing or pothead
15.4	..Superconductive type
15.5	...For cable, conductor or joint
15.6	..For cable, conductor or joint
15.7	..For welding or furnace cable
16.1	..By ventilation or gas circulation
16.2	...Of bus bars or bus ducts
16.3	...With heat sink
17 R	.Boxes and housings
17 LF	...Liquid filled
17 GF	...Gas filled
17 SF	...Solid filled
17 VA	...Venting, absorption, expansion
17 CT	...Closures, terminals, gaskets
17.05	..Hermetic sealed envelope type (e.g., with exhaust stem)
17.06	...Liquid seal
17.07	...Combined lead-in and exhaust tube
17.08	...With electric connector
18	..With bushing, terminal or lead-in
19	.Conduit or cable end structure
20	..With fluid stops
21 R	.Conduit or cable joints
21 JS	...Joints: separable
21 JR	...Joints: rotatable
21 JC	...Joints: rotatable, coaxial
21 C	...Joints: coaxial
21 CA	...Joints: coaxial angle expansion
22 R	..With fluid stops
22 C	....Concentric
23 R	.With fluid stops
23 C	...Compositions
24	.Conduits, cables and conductors
25 R	..Impregnated insulation type
25 C	....Impregnating compositions
25 G	....Gas filled
25 P	....Processes
26 R	...Multiple conductor
26 G	......Gas filled
27	..Parallel or twisted conductors
28	..Coaxial or concentric type
29	...With spiral spacer
30	.Insulators
31 R	..Axial passage and/or through wall or plate
31 S	....Spark plugs
31.5	...Liquid sealed joint
32	ANTI-INDUCTIVE STRUCTURES
33	.Conductor transposition
34	..Conduit or cable structure
35 R	.Shielded or screened
35 C	...Connectors and joints
35 SM	...Spark plugs, manifolds
35 GC	...Gaskets, covers
35 CE	...Coils, anti-eddy-current
35 MS	...Materials, stock and screen rooms
35 TS	...Radio tube shields
36	..Conductor only
37	UNDERGROUND
38	.Distributing and/or combined with overhead
39	.Street, sidewalk, gutter or curb structure
40 R	OVERHEAD
40 CC	..Ground clamps and cable clips
40 TD	..Tension devices
41	.With messenger cable
42	.With conductor vibration damping means
43	.Distributing and/or plural point support
44	.With connector or wire fanning arrangements
45 R	.Towers, poles or posts
45 TD	...Tension devices
46	HANDLES
47	COMBINED FLUID CONDUIT AND ELECTRICAL CONDUCTOR
48	WALL MOUNTED CONDUITS AND/OR HOUSINGS
49	.Plural outlet and/or conduit
50	BOXES AND HOUSINGS
50.5	.Hermetic sealed envelope type
50.51	..With covering or casing for envelope
50.52	..With electrical connector
50.53	...Envelope portion forms connector
50.54	...With mounting means for a device within envelope
50.55	..Hollow lead surrounding another lead (e.g., concentric type)
50.56	..Lead-in insulated from metal wall
50.57	..Stem or sealing disk attached to envelope neck
50.58	...By fused-type seal
50.59	..With shield for lead-in seal or between the lead-in conductors
50.6	..Plural lead-in
50.61	..With bonded seal for conductive member (e.g., glass to metal)
50.62	...With cement or plastic
50.63	...Metal disk or ring-type seal
50.64	...Foil or flat lead-in
51	.With grounding means
52.1	.With electric device or mounting means therefor
52.2	..Potted or encapsulated
52.3	..Sealed
52.4	...Flat housing for electronic device (e.g., flat pack, dual-in-line package)
52.5	...Header, mounting stud, or can-type housing for semiconductor or crystal
52.6	...Pellet type housing
53	..Plug receptacle or wall switch type
54	...With fixture coupling or mounting means
55	...Unitary with face plate
56	....External
57	...Adjustable
58	...With box or housing mounting means
59	..With connectors
60	...Cable or conduit terminal casings
61	..Fixtures coupling or mounting means
62	...Stud or nipple
63	....With box supporting means
64	....With conduit or cable coupling means
65 R	.With conduit or cable opening, coupling means or hole closures
65 SS	...Sealed stuffing-gland type
65 G	...Grommet type

66	COVERS OR FACE PLATES
67	.With closure for face plate opening
68.1	CONDUITS, CABLES OR CONDUCTORS
68.2	.Bus bars or bus ducts (Residual)
68.3	.Single duct conduits
250	.Preformed panel circuit arrangement (e.g., printed circuit)
251	..With encapsulated wire
252	..With cooling means
253	..Micropanel
254	..Convertible shape (e.g., flexible) or circuit (e.g., breadboard)
255	..With particular substrate or support structure
256	..With particular material
257	...Conducting (e.g., ink)
258	...Insulating
259	...Adhesive/bonding
260	..With electrical device
261	..With particular conductive connection (e.g., crossover)
262	...Feedthrough
263	....With solder
264	....Voidless (e.g., solid)
265	.....Preform in hole
266	....Hollow (e.g., plated cylindrical hole)
267	...Termination post
268	..With single conductive plane (e.g., tape, cable)
69	.Extensible
70 R	.Combined
70 S	...Submarine repeater housings
70 B	...Bus bars
70 C	...Conduits or strips
70 A	...Aerial cable
71 R	..Branched
71 B	....Bus bars
71 C	....Coaxial
72 R	...Multi-duct conduit and/or plural branch
72 A	.....Wire harness
72 B	.....Bus bars
72 C	.....Casing, moldings
72 TR	.....Ribbon type
73.1	..With joint or end structure conductive stress distributing means
74 R	..With end structure
74 A	....Insulating cap or sleeve
75 R	...With joint
75 B	.....Bootleg
75 D	.....With detachable joint (e.g., potheads)
75 F	.....Flexible spring type
75 C	.....Coaxial
76	...Plastic filled
77 R	...Sealing
77 S	.....Spark plugs
78	...With grounding means
79	...With supporting means
80	...With insulator skirts
81	...Elbow or hood outlet type
82	...End cap outlet type
83	...Lining thimble
84 R	..With joints
84 C	....Crimped
84 S	....Separable
85	...Axially insulated joint sleeve sections
86	...Angularly movable or adjustable
87	...Angular
88 R	...Plural conductor and/or duct
88 B	.....Bus bars
88 C	.....Coaxial
88 S	.....Separable
89	...Radially spread or flanged sheath or conduit
90	...Stranded conductor
91	...Divided joint sleeves
92	....Longitudinally
93	...Sleeve and end cap-type casing
94 R	...Bare-conductor
94 S	.....Separable
95	.Plural duct
96	..Embedded conduit-ducts or conductors
97	..Grooves or channels
98	.With embedded conduit-duct or conductor
99 R	.With interior conductor or cable supports
99 B	...Bus bars
99 E	...Expansion
100	..Vertical conductor or cable
101	.Removable wall
101.5	.Buoyant
102 R	.Conductive armor or sheath
102 A	...Alloys
102 SC	...Semiconducting
102 C	...Sheath coated
102 SP	...Strip, type, perforated, slotted
102 P	...Powdered insulation
102 D	...Corrugated
102 E	...Rope
103	..Plural individually sheathed or armored conductors
104	...Embedded in shield
105 R	..Plural, insulated
105 SC	....Semiconducting
105 B	....Segmental
106 R	..Plural, conductively contacting or composite
106 SC	....Semiconducting
106 D	....Corrugated
107	..Protected by nonconductive layer
108	..Spirally applied
109	...Overlapping or interlocking
110 R	.Insulated
110 A	...Oxide
110 P	...Cellulose
110 AR	...Rubber
110 SR	...Synthetic resin
110 SY	...Styrene
110 B	...Isobutylent
110 N	...Polyamide (Nylon)
110 PM	...Polyethylene (including "Mylar")
110 D	...Dacron
110 V	...Vinyl
110 FC	...Fluorocarbons (teflon, Kel-f, FEP-Teflon)
110 S	...Silicones
110 F	...Foam
110 E	...Epoxy
111	..With beads or disc
112	..With identifying means
113 R	..Multiple conductor
113 A	....Radially compressed
113 AS	....Air-spaced
113 C	....Insulating core
114 R	...Split conductor
114 S	.....Segmental reentrant
115	...Dissimilar or auxiliary conducting elements
116	...With filler insulation
117 R	...Assemblies of noncircular section
117 F	.....Flat or ribbon type
117 FF	.....Conductor itself is flat
117 M	.....Mesh
117 AS	.....Air-spaced
117 A	.....Adhesive
118	..With powdered or granular material
119 R	..Composite or noncircular strand section
119 C	....Coated, compositions
120 R	..Plural or impregnated layers
120 C	....Coated or impregnated
120 FP	....Fluid-type cable paper
120 SC	....Semiconducting

	CONDUITS, CABLES OR CONDUCTORS
	.Insulated
	..Plural or impregnated layers
120 AR	....Rubber
120 SR	....Synthetic resin
121 R	...Fibrous or fabric with plastic or coating materials
121 A	.....Flame, weather or mold proof
121 B	.....Cellulose
121 AR	.....Rubber
121 SR	.....Synthetic resin
122 R	...Fibrous or fabric
122 G	.....Glass
122 C	.....Coated
124 R	..Fibrous or fabric
124 G	....Mineral-glass
124 GC	....Mineral-glass, coated
125.1	.Superconductors
126.1	.Conductor structure (nonsuperconductive)
126.2	..Composite
126.3	..Corrugated or slotted
126.4	..Metal coated on insulation
127	..Corona prevention
128.1	..Plural strand
128.2	...Bundle conductors
129 R	...Assemblies of noncircular section
129 B	.....Bus bars
129 S	.....Segmental, reentrant
130	...Annular
131 R	....With wall support
131 A	......Insulating core
131 B	......Synthetic, coated
133 R	..Noncircular strand section
133 B	....Bus bars
135	.Accessories
136	..Anti-abrasion devices
137 R	INSULATORS
137 A	..Coated
137 B	..Compositions
138 R	.Special application
138 A	...Antennas
138 C	...Compositions
138 S	...Spark plugs
138 B	...Pull chains
138 D	...Studs, rods, and joints
138 E	...Slot liners and spacers
138 F	...Terminal covers
138 G	...Component mounting pads, spacers and holders
138 H	...Neon tube type
138 J	...Resistor or heater type
139	.Combined
140 R	..With conductive arcing or stress distributing means
140 C	....Coated
140 H	....Hood type
140 S	....Strain type
140 CR	....Corona ring
141 R	...Strings or stacks
141 C	.....Coated
142	...Bushing type
143	....Condenser type
144	...Arcing or grading devices
145	..With connector
146	.Mid-line spacers
147	..Cross-over
148	.Multiple insulator assemblies
149 R	..Multiple conductor
149 B	....Bus bars
150	..Strings and stacks
151	.Through wall or plate
152 R	..Bushing type
152 A	....Antennas
152 E	....Electric space discharge device
152 S	....Spark plugs
152 G	....Grommets or tubes
152 GM	....Glass-to-metal seal
153 R	...Opposed wall engaging means
153 A	.....Antennas
153 G	.....Grommets
154	.Insulator and conductor embracing holder
155	..Divided insulator
156	.Divided insulator
157	..Aligned through aperture
158 R	.With insulator-supporting or attaching means
158 F	...Fence post insulators
159	..Insulated nail or staple type
160	..Strand engaging suspension means
161 R	..Adjustably or movably mounted
161 F	....Fence post insulators
162	..Double arm
163 R	..Support and/or insulator embracing or clamping
163 F	....Fence post insulators
164	..Support penetrating
165	...Penetrating element socketed in insulator
166 R	...Through aperture, penetrating element clamped
166 S	.....Stand-off insulators
167	.With conductor receiving aperture or bushing type
168	.With conductor holding means
169	..Fitting or terminal type
170	...Hooks
171	...Special conductor form
172	..Insulator embracing
173	...Tie wires
174	..Insulator structure
175	...Self-retaining
176	.With terminal elements
177	..Plural
178	...Multi-part, sectional or composite insulator
179	....Protected rod type
180	....Pin and opposed overlapping terminal
181	...With insulated reinforcing or interlocking element
182	...Cap and pin
183	...Overlapping
184	....Interlinking
185	....Pin and opposed terminal
186	...Caps
187	..Ventilating
188	..Cap type
189	...Plastic material adhered
190	...Divided cap
191	...Clamps or clasps
192	...Rings or wedges
193	...Screw or bayonet
194	..Pin type
195	...Multi-part insulators
196	...Plastic material adhered
197	...Clamps or clasps
198	...Rings or wedges
199	...Expanded
200	...With thimble in socket
201	...Through pin
202	...Screw or bayonet type
203	....Strand thread
204	....Sheet material thread
205	....Soft yielding material pin
206	...Sockets
207	..Link or clevis
208	.Link type
209	.Sectional, multi-part, composite, or coated
210	..Pin socket type
211	.With moisture or dirt removing or shedding
212	.Surface configuration

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DIGESTS

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DIG 1	Anti-tracking
DIG 2	Ballasts
DIG 7	Sodium conductors, connectors, etc.
DIG 8	Shrinkable tubes, etc.
DIG 9	Pull-out cabinet or drawer with retractable cable
DIG 10	Bushings with current transformers
DIG 11	Zipper tubes
DIG 12	Helical preforms

CLASS 175 BORING OR PENETRATING THE EARTH

1	WITH SEISMIC SHOCK GENERATING
2	BORING WITH EXPLOSION IN INACCESSIBLE HOLE
3	.Severing formed core by explosion
3.5	.Explosive charge carried by projectile
4	.Driving core receiver by explosion or with receptacle collecting material in bore
4.5	.Directing successive projectiles or charges in same path
4.51	.With position orienting or indicating
4.52	.With wall engaging packer or anchor
4.53	.Firing chamber movable in bore relative to carrier or another firing chamber
4.54	.With bore condition firing control, or compensating means
4.55	.Independent firing of plural charges
4.56	.Firing control mechanically actuated in bore
4.57	.Projectile forms bore
4.58	..With means to initially restrain projectile for pressure build-up
4.59	..With means to prevent preliminary bore fluid contact
4.6	.Concave-shaped charge
5	BORING A SUBMERGED FORMATION
6	.Boring with underwater tool drive prime mover
7	.Boring from floating support with submerged independent anchored guide base
8	.Boring from submerged buoyant support
9	.Boring from nonbuoyant support
10	.Boring with submersible vertically movable guide
11	BORING BY DIRECTLY APPLYING HEAT TO FLUIDIZE OR COMMINUTE
12	.Combustion of the formation material
13	.With introduction of slag forming flux
14	.Combustion is confined chamber having restricted discharge orifice
15	.Rotating the heating tool
16	.Electrically produced heat
17	WITH HEATING OR COOLING (1) WITHIN THE BORE, OR (2) DRILLING FLUID
18	ICE BORING
19	BORING WITHOUT EARTH REMOVAL (I.E., COMPACTING EARTH FORMATION)
20	.Combined with earth removal (e.g., removing sample)
21	.Fluid passage to exterior of drive point
22	.Drive point detached from shaft to form cased bore or with installation of casing
23	..Drive point retracted through shaft or casing
24	AUTOMATIC CONTROL
25	.Of fluid pressure below ground
26	.Of boring means including a below-ground drive prime mover
27	.Of advance or applied tool weight
38	.In response to drilling fluid circulation
39	WITH BIT WEAR SIGNAL GENERATING
40	WITH SIGNALING, INDICATING, TESTING OR MEASURING
41	.Ray energy detection or measuring
42	.Indicating agent released in drilling fluid
44	.Providing identifiable indication of core position in situ for core sample orientation
45	.Tool position direction or inclination measuring or indicating within the bore
46	.Signaling or indicating condition of cutting in cuttings retainer
48	.Measuring or indicating drilling fluid (1) pressure, or (2) rate of flow
49	.Transparent inspection feature
50	.Indicating, testing or measuring a condition of the formation
51	WITH SELF-ACTING CYCLIC ADVANCE AND RETRACTION OF TOOL OR TOOL SHAFT
52	WITH MAGAZINE FOR SUCCESSIVELY MOVING UNCONNECTED, ORIENTED TOOL OR SHAFT SECTIONS TO USE POSITION
53	ENLARGEMENT OF EXISTING BORE REQUIRING ACCESSIBILITY TO OPPOSITE ENDS OF THE EXISTING BORE
54	BORING BY BELOW GROUND RECIRCULATION OF UNSUPPORTED ELEMENTS (E.G., SHOT)
55	TOOL ACTUATION BY REACTION OF ROTATING ECCENTRIC MASS
56	NATURAL VIBRATION CHARACTERISTIC OF AN ELEMENT OF BORING MEANS RELATED (1) TO NATURAL VIBRATION CHARACTERISTIC OF ANOTHER ELEMENT, OR (2) TO FREQUENCY OF AN IMPOSED MOTION
57	PROCESSES
58	.Sampling of earth formations
59	..Retaining fluid or taking separate fluid sample
60	..Transporting sample to surface by fluid
61	.Boring curved or redirected bores
62	.Boring horizontal bores
64	.Chemical reaction with earth formation or drilling fluid constituent
65	.Boring with fluid
66	..Treating spent or used fluid above ground
67	..Boring by fluid erosion
68	..Anti-agglomeration treatment of gaseous drilling fluid
69	..Combined liquid and gaseous fluid
70	..Plural liquids
71	..Gaseous fluid or under gas pressure
72	..Prevention of lost circulation or caving
73	MEANS TRAVELING WITH TOOL TO CONSTRAIN TOOL TO BORE ALONG CURVED PATH
74	.Sectional guide or shaft having means to lock sections in angular relation while boring
75	.Normally curved guide or shaft
76	.Axially spaced opposed bore wall engaging guides
77	SIDE WALL TOOL FED LATERALLY WITHOUT ROTATION FROM INACCESSIBLE HOLE
78	MEANS CARRIED BY HOUSING INSERTABLE IN INACCESSIBLE HOLE TO ADVANCE SIDE WALL TOOL LATERALLY
79	TOOL SHAFT ADVANCED RELATIVE TO GUIDE INSERTABLE IN INACCESSIBLE HOLE TO CHANGE DIRECTION OF ADVANCE
80	.Tool telescopes over guide having surface set at angle in hole
81	.With anchor for guide engaging hole side wall
82	.Guide carried by shaft to operative position
83	..With clutch means acting between shaft and guide
84	WITH ABOVE-GROUND CLEANER FOR BORING MEANS
85	WITH ORIENTING OR RACKING MEANS FOR UNCONNECTED TOOLS OR SECTIONS OF SHAFT OR CASING
86	WITH BELOW-GROUND PERSONAL ACCOMMODATION
87	CONVERTIBLE
88	WITH MEANS CARRYING CUTTINGS LATERALLY OF BORE AXIS COMPRISING (1) CHUTE, (2) CONVEYER, OR (3) VEHICLE

89	TOOL ELEMENT OR CONTINUOUSLY DRIVEN FLEXIBLE OR ARTICULATED ENDLESS MEMBER
90	.Flexible or articulated member carried on support swingable or laterally movable relative to bore axis
91	BORING MEANS INCLUDING A CONTINUOUSLY ROTATING BIT DESCRIBING A NONCIRCULAR CROSS-SECTIONAL BORE
92	WITH BELOW-GROUND TOOL DRIVE PRIME MOVER
93	.Below-ground (1) generation of motive fluid, or (2) storage of motivating energy
94	.With below-ground feed means
95	.Plural below-ground drive prime movers
96	..Plural cutter elements driven by individual prime movers
97	.With means to anchor prime movers support to bore wall
98	..Expansible anchor
99	...Fluid-operated
100	.Discharge passage for motive fluid directed toward bore entrance
101	.With positive connection between tool and support shaft for rotary below-ground motor
102	.With below-ground conveyer or impeller for removal of cuttings
103	.With above-ground means
104	.Electric
105	..Reciprocating
106	.With mechanical motion-converting means
107	.Fluid rotary type
108	COMMON DRIVE OR ADVANCING MEANS FOR CONCURRENTLY BORING ALONG LATERALLY SPACED AXES
113	WITH MEANS TO SIMULTANEOUSLY FEED AND ROTATE TOOL FROM A SINGLE MECHANICAL ELEMENT
114	.Constant rotation rate permitted regardless of (1) release of feed force, or (2) change in feed rate
118	.With feed anchor in earth wall being bored
121	.Rotary drive for relatively advancing feed screw
122	WITH MEANS TO FEED DRIVE
135	WITH ABOVE-GROUND MEANS TO IMPACT AN EARTH-PENETRATING MEANS
161	WITH ABOVE-GROUND MEANS TO MOVE TOOL TO A DUMPING LOCATION OFFSET FROM BORE
162	WITH ABOVE-GROUND MEANS TO FEED TOOL
170	WITH TOOL DRIVE PRIME MOVER OR ABOVE-GROUND MECHANICAL MOTION CONVERTING DRIVE MEANS
171	.With installing casing
172	.With endless flexible conveyer
173	.With diversely operated shafts extending into bore
189	.Drive reciprocates tool
195	.Rotary drive for a relatively advancing tool (e.g., rotary table)
202	ABOVE-GROUND MEANS FOR RELATIVELY MOVING BELOW-GROUND TOOL ELEMENTS
203	WITH ABOVE-GROUND MEANS TO ADVANCE OR RETRACT BORING MEANS
205	WITH MEANS PROVIDING PRESSURIZED GAS CONTACT WITH DRILLING LIQUID
206	WITH ABOVE-GROUND MEANS FOR PREPARING OR SEPARATING DRILLING FLUID CONSTITUENTS
207	WITH ABOVE-GROUND MEANS FOR HANDLING DRILLING FLUID OR CUTTING
208	.Fluid spray
209	.Fluid or cuttings directing or receiving means engaging bore entrance
210	..Anchored to bore wall
211	..Axially supported by tool shaft
212	.Pressurized gas supply
213	.With suction pump inlet communicating with bore bottom
214	.Fluid head on tool shaft having lateral port and axial passage with seal for means reciprocable in the head
215	.With tool shaft having plural passages for drilling fluid
216	.Standpipe
217	.With pump
218	.With valve
219	WITH PARTICULAR ACCOMMODATION FOR PERSONNEL (E.G., SEAT OR PROTECTOR)
220	WITH ABOVE-GROUND GUIDE FOR RELATIVELY ADVANCING TOOL
226	WITH SAMPLE COVERING OR COATING MEANS (1) DISPENSED INTO SAMPLE RECEIVER, OR (2) FLUENT
227	WITH STORAGE MEANS FOR BIT LUBRICANT CARRIED BY BIT OR SHAFT
228	.With fluid pressure-actuated feed means
229	.Rotation of bit actuates lubricant feed means
230	WITH EXPANSIBLE BORE WALL ANCHOR
231	WITH MEANS MOVABLE RELATIVE TO TOOL BELOW GROUND TO CONTROL ECCENTRIC FLUID EMISSION
232	WITH MEANS MOVABLE RELATIVE TO TOOL BELOW GROUND TO STOP FLOW TOWARD BORE BOTTOM
233	.Movable to seal sample receiver at bore bottom pressure
234	.With longitudinally spaced valve seats
235	..Seat engaged to stop upward flow
236	.In sample receiver removable through below-ground tool shaft
237	.Means comprises dropped element
238	.Flow-stopping means includes relatively movable cutter element
239	.With undisturbed core receiver
240	..Movable means adapted to underlie severed core
241	.Stops flow by movement about fixed pivot
242	..Pivot transverse to tool axis
243	.Resiliently biased or composed of flexible material
244	WITH MEANS MOVABLE RELATIVE TO TOOL TO RECEIVE, RETAIN, OR SEVER UNDISTURBED CORE
245	.Core bit closure relative upwardly movable by core
246	.Receiver removable through below-ground tool shaft
247	..With fluid pressure-responsive means to remove receiver or operate latch
248	..Core forming cutting edge or element on receiver
249	.Core-retaining or severing means
250	..Fluid-actuated
251	..Actuated upon relative movement between tool and tool shaft
252	...Relative rotary movement
253	..With element holding retaining or severing means inactive
254	..Mounted on transverse pivot
255	..Sliding wedge type (e.g., slips)
256	WITH RELEASABLE MEANS NORMALLY HOLDING JOINTED SHAFT SECTIONS IN ANGULAR RELATION
257	TOOL REMOVABLE OR INSERTABLE THROUGH OR AROUND DRIVING OR DRIVEN SHAFT OR CASING
258	.Laterally shiftable cutter element movable through shaft
259	..Plural cutter elements longitudinally relatively movable into transverse alignment

TOOL REMOVABLE OR INSERTABLE THROUGH OR AROUND DRIVING OR DRIVEN SHAFT OR CASING
.Laterally shiftable cutter element movable through shaft
260 ..Cutter element engages torque transmitting abutment on shaft when expanded
261 ...With additional torque transmitting abutment on bit head and shaft
262 .Tool movable exteriorly of shaft
263 CUTTER ELEMENT LATERALLY SHIFTABLE BELOW GROUND (E.G., EXPANSIBLE)
264 .With separable means holding tool collapsed above ground only
265 .Plural cutter elements longitudinally relative movable into transverse alignment
266 .Plural selectively shiftable cutter elements
267 .Cutter element shifted by fluid pressure
268 ..With dropped element
269 ..Fluid pressure acts against spring biased part
270 .Cutter element shifted by dropped element
271 .With latch operated by fluid pressure or dropped element
272 .Cutter element shifted by relatively longitudinally movable threaded elements
273 .Cutter element shifted by cam or gear axially rotatable relative to shaft
274 .With shifting mechanism spring biased to operative position
275 ..With separate latch
276 ...Frangible or discardable element
277 ...Latch holds mechanism retracted
278 ....Latch return shifting mechanism to inoperative position
279 ..Cam or gear means movable to shift cutter element
280 ...With forwardly extending noncutting portion
281 ..Cutter element substantially longitudinally movable on shaft
282 ...Plural elements expanded into single socket
283 ...With forwardly extending noncutting portion
284 .Cutter element shifted by longitudinally relatively movable parts
285 ..Toggle or linkage between movable parts
286 ..Cam or gear engaging cutter element
287 ...With separate latch holding cutter element in shifted position
288 ...Cutter element substantially longitudinally movable on shaft
289 ...Cutter element spring biased to retracted position
290 .With latch
291 .Spring biased
292 .Pivoted about substantially longitudinal axis
293 BELOW-GROUND (1) HAMMER, OR (2) IMPACT MEMBERS
294 .Combined with safety joint
295 .With noncutting portion forwardly of sleeve impact member having a cutting portion (e.g., reamer)
296 .Fluid-operated
297 ..Restricted orifice for initially delaying escape of restraining fluid
298 .Continuous unidirectional rotary motion of one telescoping member effects consecutive impacts
299 .Resiliently biased
300 .With releasable means to detachably retain telescoping members against axial reciprocation
301 ..Frangible
302 ..Condition for release adjustable
303 ...Adjustable below ground
304 ..Resiliently biased latch
305 .Telescoping members relatively rotatable
306 ..With means to couple members to prevent relative rotation
307 WITH CUTTING EDGE COVER
308 WITH RECEPTACLE
309 .Removable or insertable through below-ground tool shaft
310 .With helical conveyer
311 .Suspended below bit
312 .Sieve or strainer
313 WITH MECHANICAL CLEANER FOR BIT OR CUTTER ELEMENT
314 WITH WELL-TYPE SCREEN
315 COMBINED
316 WITH RELATIVELY MOVABLE PARTS TO FACILITATE CLEANING WITHOUT DISASSEMBLY
317 WITH MEANS MOVABLE RELATIVE TO TOOL OR SHAFT TO CONTROL BELOW-GROUND PASSAGE
318 .Valve prevents upward flow
319 BELOW-GROUND MECHANICAL MOTION CONVERTING MEANS RELATIVELY MOVING PLURAL CUTTING EDGES
320 WITH TOOL SHAFT DETAIL
321 .Axially telescoping shaft section
322 ..Telescoping motion related to relative axial rotation or oscillation
323 .Helix or helically arranged structure
324 .Means other than tool structure to induce fluent flow
325 .Bore wall engaging means mounted on shaft
326 ..Engaging means advances in adjacent hole
327 BIT AND BIT ELEMENT
328 .Magnetized or with magnet
329 .Bit includes diamond
330 ..Core forming type
331 .Rolling cutter bit or rolling cutter bit element
332 ..Core forming-type bit
333 ...With core-breaking means
334 ..Bit with leading cutter forming smaller diameter initial bore
335 ...Leading fixed cutter
336 ..Rolling cutter bit with fixed cutter
337 ..With drilling fluid supply to bearing
338 ..With rotary or endless carrier
339 ..With drilling fluid conduit details
340 ...Fluid conduit lining or element (e.g., slush tube or nozzle)
341 ..Plural rolling cutters with intermeshing teeth
342 ..Adjustable cutter element
343 ..Wobbling cutter
344 ..Noncutting portion forwardly of rolling cutter (e.g., reamer)
345 ...Longitudinal axis cutter
346 ....Separable support for cutter axle
347 ....Removable axle or bushing
348 ..Longitudinal axis cutter
349 ...With transverse axis cutter
350 ..Laterally offset cutter axis
351 ...Disk blade
352 ....Plural coaxial cutters
353 ...Cone or frustum rolling cutter

BIT AND BIT ELEMENT
.Rolling cutter bit or rolling cutter bit element
354 ..Axle rotatable with cutter
355 ..Circumferentially displaced cutter axes
356 ...Stub axle only
357 ...Detachable multiaxis support or spider
358 ...Mutually contacting cutter supports
359 ....With bearing or seal details
360 ..Cross axle with stub axle
361 ..Cross axle
362 ...Vertically disaligned cross axle sections
363 ...Separable supports
364 ...Removable cross axle or bushing
365 ..Outwardly directed stub axle
366 ..Separable support for stub axle
367 ..Detachable stub axle, bushing or bearing
368 ...Releasable cutter securing device
369 ..Stub axle cutter securing means
370 ...Released by antifriction bearing disassembly
371 ..With bearing or seal details
372 ...Antifriction type
373 ..Disk cutter
374 ..Specific or diverse material
375 ...Welded
376 ..Nonsymmetrical bit (e.g., nontracking)
377 ..Spiral rib or tooth row
378 ..Irregular tooth cutter row
379 .Cutting edge self-renewable during operation
380 .Unsupported abrading particle type (e.g., shot)
381 .Cutting edges relatively longitudinally movable during operation
382 .Adjustable cutter element
383 ..Adjustment presents different cutting edge
384 ..Radially adjustable
385 .Bit with leading portion (e.g., pilot) forming smaller diameter initial bore
386 ..Leading portion is separable starter
387 ..Leading portion is core forming type
388 ..Leading portion is a screw
389 ..Impact type
390 ...Plural larger diameter steps
391 ..Plural larger diameter steps
392 ..Leading portion is forked rotary type
393 .With fluid conduit lining or element (e.g., slush tube)
394 .With helical-conveying portion
395 ..Impact type
396 .Axially parallel side wall with transverse cuttings retaining portion
397 .Forked rotary nontracking
398 .Nonsymmetrical bit
399 ..With bore wall engaging guide
400 ..Nonsymmetrical arrangement of opening for cuttings or fluid
401 .Cutting edges facing in opposite axial directions
402 .Casing shoe type
403 .Core forming type
404 ..With core-breaking means
405 ..Impact type
406 .Noncutting portion forwardly of cutting portion (e.g., reamer)
407 ..Impact type
408 .With bit guide or bore wall compacting device
409 .Specific or diverse material
410 ..Insert
411 ..Welded
412 .Plural separable cutter elements
413 ..Independently attachable
414 .Impact type
415 ..Combined with rotary
416 ..Noncircular bore cutter
417 ..With internal-fluid passage
418 ...Plural openings
419 ...Cruciform
420 ..Cruciform
421 .Symmetrical forked rotary type (e.g., fishtail)
423 WEDGING SLIP ASSEMBLY FOR SUPPORTING A PIPE OR ROD
424 MISCELLANEOUS (E.G., EARTH-BORING NOZZLE)

CLASS 177 WEIGHING SCALES

DECEMBER 1990

1	PROCESSES
2	WITH RECORDER
3	.With computing or totalizing means
4	.With recording of a factor additional to weight
5	..Weight identification
6	.Of both gross and tare on one record receiver
7	.Responsive to means sensing removal of material
8	.With record receiver advance
9	..By weigher
10	.External marker operator
11	..Recorder element mounted on poise
12	..Responsive to timer, or completion of weighing operation
13	.Weigher sets type
14	SELECTIVELY PRESET CYCLE FLOW TERMINATOR
15	WITH TOTAL REGISTER
16	.Integrator of steadily flowing fluent material
17	.Of distinct successive loads
18	.Cycle totalizer
19	..Single totalizer operated by plural weighers
20	...By preliminary translation of rotary weighers
21	...By intermittently used one of plural weighers
22	..Weigh beam operated
23	..Discharge valve operated
24	..Weigh chamber operated
25.11	COMPUTER
25.12	.Electrical
25.13	..Digital
25.14	...Multiplying or dividing scales
25.15	....Price
25.16	....Calorie counting
25.17	....Counting
25.18	...Combinatorial scales
25.19	..Weight history
26	.Computer and weigher independently operated by common load holder
27	..Weighing beam dial and computing beam dial with separate poises
28	...Separately pivoted beams
29	...Tabular-type computer
30	.Ancillary weigher
31	.Independent computer scale and index
32	..With adjustable linkage to weight offsetting means
33	...Coaxial pointers
34	.Tabular-type computer
35	..Slidable poise moves table
36	..Weigher moves table
37	...Rotatable drum
38	....With manually operated reading assistance
39	....With additional reading window in drum housing
40	...Encased disc
41	...Externally movable table
42	...Axially rotatable
43	..Calibrated index arm
44	..Table integral with balance beam
45	WITH ALARM OR SIGNAL
46	.In unbalance
47	.In balance
48	..Electric
49	.Of additional counterpoise
50	WITH TESTING
51	.Coin size
52	WITH CONVEYING MEANS HANDLING SUCCESSIVE RECEIVERS
53	.Receiver presence responsive
54	.Rotary
55	..Separate weigh chamber
56	.Separate weigh chamber
57	..Simultaneously operated weigh chambers
58	PLURAL WEIGHERS ON ROTARY SUPPORT
59	DISCHARGE FROM WEIGHER TO RECEIVER
60	WEIGHER RESPONSIVE MATERIAL CONTROL
61	.Translatable among plural sources
62	.Remote discharge station
63	.With additional material-presence responsive means
64	..Controlling feed
65	...To alternating weigh chambers
66	...And discharge
67	....Overload removal
68	.Flow terminator requiring external reset
69	..Plural feed, simultaneous cutoff
70	..Sequential feeding, plural ingredients
71	..Feed and discharge
72	...Manually initiated discharge
73	..Receiver operated reset
74	..Latch release
75	...Sequential latch release
76	...With magnetic operator
77	....With serially connected switch
78	...Reciprocating closure
79	..Holding magnet
80	.With external intercontrol
81	..Initial partial charge
82	.Overload removal
83	.Rotary
84	..Power-driven
85	..Electromagnetic latch release
86	..With preliminary translation
87	...Initiates feed control operation
88	....By cam on weigh chamber
89	.Stationary weigh chamber
90	.Alternating weigh chambers
91	..Divided unit
92	...With relatively oscillating partition
93	....Pivoted feed diverter
94	...Oscillating
95	....Valve means correlated with weigh chamber
96	.....Opened by gravity
97	.....Mounted externally of weigh chamber
98	..Feed diverter
99	...With discharge valve
100	..Valved discharge
101	..Siphon discharge
102	..Oscillating
103	.Plural chambers
104	..With simultaneous discharge
105	.Discharge valve or gate
106	..Opening initiated by feed terminator
107	..Closing initiates feed
108	..Power actuated
109	...Clutched
110	....Magnetically operated
111	..Mechanically interconnected with feed valve
112	..With linkage operator
113	..Latch release
114	.Correlated feed and discharge
115	..Oscillating weigh chamber
116	.Feed
117	..Weigh chamber placement initiates flow
118	..With receiver retainer
119	..Conveyer
120	...With feed cutoff
121	...Variable speed
122	..Sequentially actuated flow control means
123	...Distinct controllers
124	WITH LOCK OR SEAL
125	CHECK CONTROLLED
126	COLLAPSIBLE, FOLDABLE, KNOCKDOWN
127	.With carrying case
128	WITH REPAIR OR ASSEMBLY MEANS
129	CONVERTIBLE

CONVERTIBLE
130 .Hand truck
131 .Hand manipulatable load pickup device
132 STRUCTURAL INSTALLATION
133 .Geographic
134 ..Pit
135 ...With guard or shield
136 .Vehicle
137 ..Running gear springs
138 ...With indicator disconnect means
139 ..Unitary load transferrer and weigher
140 ..Hand truck
141 ..Hydraulic weigher
142 .Building
143 .Refrigerator
144 .Furniture or room fixture
145 WITH WEIGHER LOADING OR UNLOADING MEANS
146 .Jack
147 .Hoist
148 .Hand manipulatable weigher
149 ..Container type
150 EQUAL-ARM BEAM TRANSFER MECHANISM
151 LOAD-HOLDER TRANSFER MECHANISM
152 .Unitary with weigher
153 ..Transmission disconnect means
154 MEANS HOLDING LOAD-DRIVEN ELEMENT AGAINST MOTION
155 .Separates bearing parts
156 .At transmission mechanism
157 .Balance beam
158 ..Plural beams
159 .At indicator
160 SACK SUPPORT
161 LOAD GUIDE
162 .Chute
163 .Rail
164 PRESET
165 .Responsive to load receiver
166 .Ancillary pointer
167 .Fixed index or dial
168 .Spring support
169 ..Effective length of spring
170 ..Lever
171 .Lever balance-type beam
172 ..Load-arm length
173 .Indicator structure
174 ..Rack connection
175 .In transmission
176 ..Counterweight
177 ILLUMINATED
178 .Projected
179 WITH BEARING SHIELD
180 WITH CASING CLOSURE OR SHIELD
181 .Transparent
182 ..Lens
183 LUBRICATOR
184 SHOCK ABSORBER, DAMPER
185 .Electrical or magnetic
186 .Indicator mechanism
187 .Load-holder transmission mechanism
188 ..Fulcrumed lever
189 .Load holder
190 EQUAL ARM TYPE
191 .With counterweight manipulating means
192 ..Elongated flexible counterweight
193 .With indicator tower
194 .With bias toward balance
195 ..By spring
196 ...Torsion bearing type
197 .With longitudinally movable poise
198 .With check link
199 PLURAL DISTINCT LOAD HOLDERS WITH COMMON EVALUATOR
200 .Load comparing type
201 SELF-POSITIONING
202 .Offsets over or under load
203 .Supplemental weight offsetting means
204 ..Transferred responsive to self-positioning means
205 ..Remote indicator
206 ..Slidable weight
207 .Buoyancy type
208 .Fluid transmission to pressure gauge
209 ..Interconnected load-supporting expansible chamber
210 R .Electrical current generating or modifying
210 C ...Capacitors
210 EM ...Electromotive or electromagnetic force
210 FP ...Frequency changes or pulse counts
211 ..Strain gauge
212 .Repositioning in response to deflection under load
213 ..Electrically actuated poise
214 ...With indicator of poise position
215 ...Speed control of poise
216 .Pendulum
217 ..Plural opposed
218 ...Translatable
219 ...Tape-driven
220 ..Drives indicator through transmission mechanism
221 ...Flexible member
222 ...Gearing
223 ....Rectilinear rack
224 ..Pointer fixed to pendulum
225 .Spring
226 ..Temperature compensator
227 ...Modifies leverage
228 ...Acts on spring
229 ..Cantilever
230 ..Force modifier connects spring and load-holder
231 ..Load-holder steadying structure and spring carried by casing
232 ..Coil spring in sleeve casing
233 ...With vertical pointer slit
234 ..Magnified indication of spring deformation
235 .Counterweight type
236 ..Variable fulcrum
237 ..Progressive counterweight pickup
238 WITH CASING
239 .Base
240 ..With standard
241 ...Carrying additional housing
242 ....Access opening in cylindrical wall
243 ...Penetrated by load-holder support
244 ASSEMBLY SUPPORT
245 COMBINED
246 BEAM
247 .Coarse and fine sliders
248 .Plural counterweight pickup
249 .Transmission interconnected with slidable counterweight
250 .Counterweight retention
251 .Adjustable load-arm connection
252 .Plural counterweights
253 LOAD HOLDER
254 .Fluid transmission
255 .Sway or tilt prevention
256 .Pivotally interconnected transmission levers
257 ..Integrated force delivered by lever extension from interconnection
258 ..Separate lever loaded by load-holder levers
259 ...With additional serially connected lever
260 .Adjusting means
261 .Movably mounted pivot
262 .Scale pan
263 ..Suspended
264 MISCELLANEOUS

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DIGESTS

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DIG 2	Digitizers mechanical
DIG 3	Digitizers electrical
DIG 4	Digitizers non-sensing
DIG 5	Magnets
DIG 6	Photoelectric
DIG 7	Pneumatic controls
DIG 8	RR motion
DIG 9	Scale bearings
DIG 10	Telemetric
DIG 11	Vibrators

CLASS 178 TELEGRAPHY

DECEMBER 1990

1	MISCELLANEOUS
2 R	SYSTEMS
2 A	..Simplex-reversing periodic
2 B	..Code changers
2 C	..Way stations; party lines
2 D	..Round robins
2 E	..Satellite
2 F	..Coin-controlled, connecting, recording
3	.Automatic
4	..Printing
4.1 R	...Remote control
4.1 A	.....Radio-controlled
4.1 B	.....Called station identification answer back system
4.1 C	.....Revertive signaling
15	..Photographic recorder
16	..Current reversing
17 R	..Transmitters or recorders
17 A	....Tape and/or keyboard
17 B	....Tape control
17 C	....Keyboard
17 D	....Light, capacity, pneumatic sensing
17 E	....Overlap
17.5	...Storing
18	.Writing
19	..Alternating current
20	..Variable direct current
21	.Stenographic
23 R	.Printing
23 A	...Error detection in printers
24	..Bulletin
25	..Page
26.1	...Translators
27	...Selectors
28	...With type-wheel recorder
29	....Recorders
30	..Character elements
31	..Multiple-line circuit
32	...With type-wheel recorder
33 R	..Selectors
33 MP	....Monopulse
33 A	....Double selectors
34	...With type-wheel recorder
35	..With type-wheel recorder
36	..Recorders
37	...Privacy (e.g., mechanical packaging or covering of printed message)
38	...With type wheel
39	....Multiple
40	.....Shifting devices
41	....Unisons
42	...Paper guiding or feeding
43	.Space induction
45	.Loaded circuit
46	..Loading coils
47	.Harmonic or reed
48	..Recorders and receivers
49	.Superposed current
62	.Chemical
63 R	.Cable or capacity
63 A	...Cable repeaters
63 B	...Cable transmitters
63 C	...Cable receivers
63 D	...Cable mechanical structure
63 E	...Distortion correction and artificial lines
63 F	...Direction reversing
64	.Coil transformer
65	.Dynamo
66.1	.Alternating or pulsating current
116	..Spark gap or arc discharge
117	..Coherer
66.2	..Transmitter keying
67.1	..Modified semicycle
69 R	.Line-clearing and circuit maintenance
69 M	...Frequency measuring and compensating
69 N	...Precorrectors
69 A	...Distortion measuring
69 B	...Interference neutralizing
69 C	...Balancing duplex cables
69 D	...Zero wander neutralizers
69 E	...Leakage compensation
69 F	...Neutralizing line capactive discharge
69 G	...Monitoring, alarm and pilot signals
69 H	...Reiterative
69 K	...Misc. gas-filled tube circuits
69 L	...Check back
69.6	.Call
70 R	REPEATERS
70 A	..Relays only
70 B	..Vibrating relays
70 C	..Rotary distributors
70 D	..Mechanical
70 E	..Tuning forks
70 F	..Vacuum tubes
70 G	...With rotary distributors
70 H	..Gas tubes
70 K	...And distributors
70 M	..Magnetic
70 N	..Magnetron repeaters
70 P	..Photocell
70 Q	..Piezoelectric
70 J	..Generator
70 S	..Having a carrier wave input
70 T	..Oscillatory
70 TS	..Using transistors
71 R	.Automatic in either direction
71 A	...Multiplex to simplex and vice versa
71 B	...Multiplex channels
71 C	...Subscriber's equipment in A.C. multiplex
71 D	...A.C. and vacuum tubes
71 E	...Distributor
71 F	...Mechanical
71 G	...Relays only
71 H	...Artificial lines and relays
71 J	...Vacuum tubes and relays
71 K	...Vacuum tubes and gas magnetrons
71 L	...Code transformers
71 M	...Oscillatory
71 N	...One-way repeater switched
71 S	...Generators
71 P	...Magnetic amplifiers
71 Q	...Piezoelectric
71 T	...Supervisory, alarm, monitor
72	..Mechanical circuit retainer
73	..Multiple line
74	CIRCUITS
75	.Manipulating switch
76	.Retarded closer
77	COMBINED INSTRUMENTS
78	.Portable sets
79	CODE TRANSMITTERS
80	.Combined instruments
81	..With typewriter
82 R	.Automatic dot
82 B	...With electromagnet
82 A	...And dash
83	.Rotary contact
84	..Drum
85	.Oscillating contact
86	.Reciprocating contact
87	.Stylus and tablet
118	RECEIVERS
89	.Code recorders
90	..Photographic
91	..Siphon
92	..Indenting or perforating
93	..Polarized
94	..Pyrographic
95	..Stop mechanisms
96	..Inking devices
97	..Double-tape movement
98	.Sounders
99.1	..Private (e.g., acoustically shielded)
100	..Augmenting

RECEIVERS
119 .Optical member
120 .With electron tube or solid-state device
101 KEYS
102 .Multiple contact
103 .Multiple line
104 .Self-closing
105 .Reversible
106 .Shifting contact point
107 .Knife-edge pivot
108 .Horizontal swing
109 .Spring pivot
110 .Finger buttons
111 TAPES
112 .Perforated
114 INSTRUMENT TABLES
115 LEARNERS' INSTRUMENTS

164	WITH POWERED MEANS FOR CREATING FLUID FORCE TO ATTRACT VEHICLE TO SURFACE OF TRAVEL
116	SURFACE EFFECT VEHICLES (I.E., GROUND EFFECT MACHINES)
117	.Having propulsion or control means
118	..Responsive to instability condition
119	..Surface contacting control
120	..Integrated with working fluid
121	...With plural cushions
122	...With dynamic seal or fluid curtain
123	.Spray deflector
124	.Expansible chamber
125	.Fluid bearing or fluid pad
126	.Rigid side walls
127	.Flexible skirt
128	..Having outlet for working fluid
129	.Dynamic seal or fluid curtain
130	..Recirculating
165	WITH FLUID OR MECHANICAL MEANS TO ACCUMULATE ENERGY (I) DERIVED FROM MOTION OF VEHICLE OR (II) OBTAINED FROM OPERATION OF VEHICLE MOTOR, AND GIVE UP THE ENERGY (1) WHEN NEEDED FOR VEHICLE ACCELERATION OR (2) TO POWER AN AUXILIARY SYSTEM OF THE VEHICLE
166	WHEELED INFANT CARRIAGE OR CRIB WITH DRIVEN MEANS FOR RECIPROCATING IT LONGITUDINALLY
2.1	MOTOR SUPPLIED WITH POWER FROM EXTERNAL SOURCE
2.2	.Source comprises or includes energy derived from force of nature (e.g., sun, wind)
167	WITH MEANS FOR CONTROLLING OPERATION RESPONSIVE TO ELECTROMAGNETIC RADIATION, MAGNETIC FORCE, OR SOUND WAVES RECEIVED FROM SOURCE, OR REFLECTED FROM OBJECT OR SURFACE, LOCATED APART FROM VEHICLE
168	.Having controlling means adapted to interact with stationary means which describes course of vehicle's travel
169	.Radiation, force, or waves reflected from external object or surface
170	WITH MEANS RESPONSIVE TO SPEED OF VEHICLE FOR MAINTAINING SPEED AT, OR PREVENTING IT FROM EXCEEDING, A PARTICULAR VALUE
171	.Including device to signal to operator existence of unusual or unintended speed
172	.Including device responsive to centrifugal force
173	..And means to prevent tampering or unauthorized use
174	..Having electrical switch
175	.Including fluid pressure actuated servomechanism
176	..And electrical quantities comparison means for development of input pressure
177	..And one or more electrical components for establishing or regulating input pressure
178	.Including electrically actuated servomechanism
179	..And electrical quantities comparison means for development of electrical input
180	SKI- OR SKATE-TYPE VEHICLE FOR IMPARTING MOVEMENT TO A PERSON STANDING THEREON
181	.With power means or a portion thereof affixed to or built into the ski or skate
182	INCLUDING ONE OR MORE SKI-LIKE OR RUNNER MEMBERS
183	.Member substitutable for wheel type support structure
184	..With propulsion element of endless track type
185	...Track comprises substitute for or addition to propulsion element of traction wheel type
186	.With at least one surface-engaging propulsion element
187	..Element shuffles along support surface
188	..Spiral type element
189	..Plural elements connected to and spaced along the plural throws of a common crankshaft
190	..Endless track type element
191	...Protruding from member
192	...Plural tracks with interconnected drive or support means
193	...With vertically movable track support located intermediate the forward and rearward extremities of the track
194	..Plural discrete elements protruding from a wheel, hub, or shaft
195	...Each element moves relative to wheel, hub, or shaft
196	..Element comprises traction wheel
197	WITH MEANS FOR DETECTING WHEEL SLIP DURING VEHICLE ACCELERATION AND CONTROLLING IT BY REDUCING APPLICATION OF POWER TO WHEEL
198	PORTABLE CARRIER SUPPORTS MOTOR VEHICLE IN TOTO AND IS PROPELLED THEREBY
199	WITH POWERED, GROUND-ENGAGING MEANS FOR PRODUCING, OR ASSISTING IN THE PRODUCTION OF, LATERAL MOVEMENT OF THE VEHICLE (E.G., FOR PARKING)
200	.Comprising rotatably driven auxiliary wheel or endless track
201	..Driven by frictional engagement with tire of vehicle traction wheel
202	..Driven by auxiliary electric or fluid motor
203	.Comprising reciprocably driven stepper or rotatably driven cam
204	WITH DEVICE FOR PROGRAMMABLY OPERATING VEHICLE'S STEERABLE WHEELS DURING PARKING MANEUVER THEREOF
6.2	STEERING BY DRIVING
6.24	.Combined with manual steering
6.26	..Interlocked
6.28	...Electrical
6.3	...Fluid
6.32	...Lever and/or linkage
6.34	....With controller cam
6.36	....Lost motion type
6.38	....Geared
6.4	....With flexible and/or yieldable link
6.44	.Auxiliary steering motor
6.48	.Independently operable drive motors
6.5	..Electrical
6.54	.Variable contact
6.58	.Controlled from rotatably mounted superstructure
6.6	..Steering responsive to rotary movement of superstructure
6.62	.Combined
6.64	.Swinging traction frame responsive to differential drive
6.66	.Reversing drive to traction element
6.7	.Endless flexible track
7.1	SPECIAL DRIVING DEVICE
7.2	.Spiral type element
7.3	.Reaction jet propulsion
7.4	.Propeller type
7.5	.Vehicle mounted winch for pulling vehicle
8.1	.Stepper

	SPECIAL DRIVING DEVICE
	.Stepper
8.2	..Step or abutment ascending/desending type vehicle
8.3	..Wheel and stepper type
8.4	...Nonsupporting pusher type stepper
8.5	..With alternately lifted supporting base and leg
8.6	..With alternately lifted feet or skid
8.7	..Endless or rotary type
9	.Portable track
9.1	..Endless, flexible
9.21	...Track substituted for drive wheel
9.22	...Guided by walking attendant
9.23	...With attendant station
9.25	....Rider straddles vehicle (e.g., motorcycle)
9.26	...Convertible from wheel type
9.28	....Track remains with vehicle
9.3	.....Wheel or track contacts ground
9.32	...With auxiliary obstacle surmounting means
9.34	...With ground wheel
9.36	....Opposite and laterally spaced
9.38	....Steering
9.4	...With hitch
9.42	...Combined
9.44	...With track-related steering means
9.46	....Pivoted track frame
9.48	...Laterally extendable track
9.5	...Track support mounted for vertical movement
9.52	....Adjustable
9.54	....With spring
9.56	.....Longitudinally extending coil spring
9.58	.....Leaf or torsion spring
9.6	......Transversely extending
9.62	...Toothed wheel drive
9.64	....Belt or chain driven
10	..Annular
11	MOTOR-CARRYING ATTACHMENTS
12	.Driven steering wheel type
13	..Single wheel
14.1	VEHICLE TRAINS
14.2	.Motorized trailer
14.3	..All motors supplied from power plant of a single vehicle
14.4	.Drive means betwen vehicles through coupling
14.6	.Tractor drive effort varied by pull exerted by trailer
14.7	.Vehicle drive drives other vehicle wheel
14.5	.Overload release
15	ADDITIONAL TRACTION WHEEL
16	TRACTION WHEEL ATTACHMENTS
19.1	STEERED BY WALKING ATTENDANT
19.2	.Who steerably controls steerable wheel
19.3	.Handle movement controls vehicle drive
20	WITH ROLLERS
21	SPECIAL WHEEL BASE
22	.Five or more wheels
23	..Driven steering wheel type
24	...Stub-axle type
24.01	..Having tandem steerable or translatable wheels or wheel sets
24.02	..Displaceable wheel shifts or proportions load
24.03	..Independently rotatable side-by-side dual wheels
24.04	..With differential housing integrally fixed to vehicle frame
24.05	..Rocker beam houses drive means
24.06	..Plural propelling motors
24.07	...Separate driving motor for each drive wheel
24.08	..Each wheel positively driven
24.09	..With interaxle differential
24.1	..With drive interrupt means to either tandem drive wheel
24.11	..Driven tandem wheels
24.12	...One serially driven by other
24.13	..Spring rocker beam
205	.With mechanism of occupant-powered type for developing torque for supplementing, alternating with, or replacing torque of motor
206	..And means for controlling motor in response to either operation of occupant-powered mechanism or vehicular movement resulting therefrom
207	..Including member utilized in common by occupant-powered mechanism and by motor for transmitting torque output of each to wheel
208	.Collapsible or knockdown for storage or transport
209	.With means for changing number of supporting wheels, or for adjusting relative location thereof
210	.Having only three wheels
211	..Including steerable and driven wheel
212	...All wheels motor driven
213	...Having motor mounted to swing with steerable wheel
214	....Electrical-type motor
215	..Including two wheels driven and having common axis of rotation
216	...Electrical-type motor
217	...Including endless element for transmitting drive to wheels
218	.Having only two wheels
219	..Arranged in tandem
220	...Electrical-type motor
221	...Including rotating element for frictionally engaging and driving a wheel
222	....And means for steering that wheel
223	...Including steerable and driven wheel
224	....Both wheels motor driven
225	...Having frame element or fender constituting also exhaust or fuel passageway or fuel reservoir
226	...Including longitudinally extending shaft for transmitting drive to wheel
227	...Including resilient means for mounting driven wheel
228	...Including resilient means for mounting motor
229	...With means for cooling motor
230	...With change-speed means between motor and driven wheel
231	...Including endless element for transmitting drive and means for adjusting tension of element
36	STEAM TRACTION ENGINES
37	.Driven steering wheel type
38	..Four wheels driven
39	.With boiler leveler
40	.Spring mounted on axle
232	WITH MEANS FOR (1) PROTECTING MOTOR FROM IMPACT OF COLLISION, (2) UTILIZING MASS OF MOTOR TO ABSORB FORCE THEREOF, OR (3) PROTECTING OCCUPANT REGION OF VEHICLE FROM IMPACT-INDUCED SHIFTING OF MOTOR
41	WITH LEVELING DEVICE
233	HAVING FOUR WHEELS DRIVEN
234	.With means for steering all driven wheels

HAVING FOUR WHEELS DRIVEN
.With means for steering all driven wheels
235 ..Comprising articulated frame and means for pivoting one portion of frame relative to other portion about vertical axis located centrally of vehicle
236 ..In a path of travel other than that produced by turning the front wheels and the rear wheels substantially equally and oppositely
237 ..Comprising swingable, plural-wheel-carrying axles on individual, vertical axes of pivot
238 ...At least one axle being offset from its pivotable axis
239 ...Including longitudinally extending, endless element for transmitting drive to wheels
240 ..Including rotatable shaft extending longitudinally from wheels at one end of vehicle to wheels at other end for transmitting steering force thereto
241 ..Including longitudinally extending, endless element for transmitting drive to wheels
242 .Including pump and fluid motor, or generator and electric motor, for driving one or more wheels
243 ..And another means for driving the remaining driven wheels
244 .With means for braking either (1) one or more driven wheels or (2) structure transmitting drive to wheel
245 .Including separate mechanical assemblies for transmitting drive to each of two wheels at one end of vehicle
246 ..And assemblies for each of two wheels at other end, also
247 .With manually operated means for disengaging drive to one or more, but fewer than all, of the four wheels
248 .With differential means for driving two wheel sets at dissimilar speeds
249 ..And means for locking out the differential means
250 ...Manually operated type of lockout means
251 .Including longitudinally extending, endless element for transmitting drive to wheels
252 HAVING AT LEAST ONE WHEEL BOTH DRIVEN AND STEERABLE
253 .Steerable wheel has exclusive axis of pivot (i.e., stub-axle type)
254 ..Including flexible, axially rotatable means having one portion fixed to vehicle and another portion pivotable with wheel for transmitting drive thereto
255 ...Pivotable portion of means has additional structure of gearlike nature in driving engagement with corresponding structure on wheel
256 ...Means comprises rotatable shaft containing plural universal joints
257 ....Having at least one joint located on each side of axis of pivot
258 ...Pivotable portion of means includes ball or socket element of ball-and-socket type universal joint
259 ....Joint includes intermediate ball, floating in groove, for positively engaging ball with socket
260 ...Pivotable portion of means includes gear element of intermeshing gear type universal joint
261 ....Joint includes at least one gear element rotatable on axis of pivot and intermeshing with gear element on pivotable portion
262 .....Joint also includes gear element on fixed portion engaging gear element on axis of pivot and vertically offset from gear element on pivotable portion
263 ...Having axis of pivot disposed between parallel planes defined by opposite sides of wheel
264 .With driven axle, mounting two or more wheels, swingable about axis of pivot, and motor mounted to swing therewith
265 ..Having axle offset longitudinally from axis of pivot
266 .With driven axle, mounting two or more wheels, swingable about axis of pivot, and swingable also about a horizontal axis
267 .With driven axle, mounting two or more wheels, swingable about axis of pivot, and shaft for transmitting drive coincident with axis
268 WITH BELT OR HARNESS FOR RESTRAINING OCCUPANT, AND MEANS WHEREBY THE BELT OR HARNESS CONTROLS, OR IS CONTROLLED BY, THE FUNCTIONING OF A VEHICLE SYSTEM OR COMPONENT
269 .System comprises transmission or element thereof
270 .System comprises ignition circuit or starter circuit or element of one or other
271 WITH MEANS FOR PROMOTING SAFETY OF VEHICLE, ITS OCCUPANT OR LOAD, OR AN EXTERNAL OBJECT
272 .Responsive to absence or inattention of operator, or negatively reactive to attempt to operate vehicle by person not qualified mentally or physically to do so
273 ..Utilizing weight, or lack thereof, of operator on seat or other support to determine presence or absence
274 .Responsive to engagement of portion of perimeter of vehicle with external object
275 ..And causing application of vehicle brake
276 ...Brake comprises or includes element moved or deformed into engagement with ground
277 ...And also interruption of at least one operational system of the vehicle or its motor
278 ....System comprises clutch
279 ..And causing interruption of an electrical system of the vehicle or its motor
280 ..And causing operation of vehicle steering system
281 .Comprising either movable closure member or fastening device therefor responsive to forward or rearward movement, or variations therein, of vehicle
282 .Responsive to sensing of acceleration, deceleration, or tilt of vehicle
283 ..And causing interruption of ignition circuit
284 ...And also impeding flow of fuel

WITH MEANS FOR PROMOTING SAFETY OF VEHICLE, ITS OCCUPANT OR LOAD, OR AN EXTERNAL OBJECT
.Responsive to sensing of acceleration, deceleration, or tilt of vehicle
285 ..And causing disruption of drive train between motor and wheels
286 .Comprising vehicle system or component responsive either to position of movable closure member or to status of fastening device therefor
287 .By preventing unauthorized or unintended access or use
288 ..Reponsive to failure of taxicab operator to activate fare meter upon boarding of passenger
289 ..Comprising device, mechanism, or system for either repositioning a movable or removable closure member or operating a fastening device therefor
290 .Responsive to weight of cargo load transported by vehicle
53.1 MOTOR AS SOURCE OF POWER FOR OTHER MACHINE
53.2 .Other machine is creeper drive on motor vehicle
53.3 .Other machine is mounted by three point hitch (i.e., Ford-Ferguson hitch)
53.4 .Hydraulic drive to other machine
53.5 .Electric drive to other machine
53.6 .Drive to other machine by power take-off (PTO) driven by wheel or axle of motor vehicle
53.61 ..PTO mounted directly on or engaging drive wheel to rotate therewith
53.62 ..PTO constantly driven with wheel selectively driven
53.7 .Drive to other machine by power take-off (PTO) at front end of vehicle
53.8 .Other machine is vehicle accessory
54.1 POWER
54.2 .With spring powered motor
55 .On lower running gear
56 ..Rear axle and body
57 ...Longitudinal shaft
58 ..Frame
59 ...Pivoted support on axle
60 ...Electric
61 ..Pivoted support on axle
62 ..Rear axle
63 .Motor moved by axle
291 .Having specific motor-to-body-frame relationship
292 ..Including change-speed gearing, or clutch, mounted in common with motor
293 ...With member or mechanism for controlling gearing or clutch, and means for minimizing transfer of movement, caused by operation of motor, to member or mechanism
294 ...With means enabling repositioning of motor and gearing or clutch
295 ...With wheeled auxiliary frame, resiliently joined to body frame, for supporting motor and gearing or clutch
296 ..Including means on body frame or motor for handling exhaust
297 ..Having motor shaft parallel to rotational axis of driven wheel
298 ..Including means enabling repositioning of motor
299 ..Including auxiliary frame for motor and resilient means for connecting auxiliary frame to body frame
300 ..Including means of nonsupporting nature for minimizing operation-induced movement of motor
65.1 .Electric
65.2 ..Combined with nonelectric drive means
65.3 ..With means on vehicle for generating power for the electric motor
65.4 ...Generating means is driven by a prime mover
65.5 ..With motor in or moveable with wheel
65.6 ..With gearing between electric motor and drive wheel
65.7 ...Gearing is a changeable ratio gearing
65.8 ..With electronic devices (logic gates, semi-conductors, vacuum tubes, etc.) in control circuit
301 .Including traction motor of turbine type driven by fluid product of combustion
302 .Including traction motor of kind driven by expansible fluid from source external of motor
303 ..Gas is product of treatment of a volatile fluid (e.g., gas is steam)
304 ...With means to condense gas discharged from motor
305 .Including traction motor of kind driven by noncompressible fluid received under pressure from a pump
306 ..Vehicle includes another system operated by same fluid
307 ..Having variable displacement type motor or pump
308 ..Having separate motor for each driven, surface-engaging member
309 .With means for handling motor exhaust
310 .With means to generate steam for a propulsion purpose
68.1 .With means to guide and/or control air for power plant cooling
68.2 ..With further means to utilize power plant cooling air for other purposes
68.3 .With means to guide and/or control combustion air for power plant
68.4 .Radiators and condensers, mounting
68.6 ..With protector for the radiator or condenser
68.5 .Battery mountings and holders
69.2 .Hoods
69.21 ..Pivoted about horizontal axis extending transversely of vehicle (e.g., alligator type or front end pivot)
69.22 ..With noise suppression means
69.23 ...Noise suppression means prevents hood from vribrating (i.e., anti-rattlers)
69.24 ..With access openings having moveable or removeable closures
69.25 ..Water deflectors
69.3 .With means to increase idle speed of internal combustion engine to compensate for accessory load
69.4 .With fuel supply for internal combustion engine
69.5 ..Engine uses gaseous fuel
69.6 .Vehicle has plural power plants
69.1 .Underpans
337 TRANSMISSION MECHANISM
338 .Condition responsive (e.g., responsive to speed, load, etc.)
339 .With temperature control, lubrication or sealing
340 .With laterally movable wheel
341 .Wheel drives parallel wheel
342 .Tire directly driven
343 ..With particular gear structure
344 .Assembly feature

	TRANSMISSION MECHANISM
345	.Traction aid
346	.With protective guard or casing
347	.Mechanical movement transmission
348	.Final drive axle movable
349	..Rigid axle
350	...Belt or chain drive
351	....With tensioning means
352	...With lateral support between the differential or axle housing and the vehicle frame
353	...With sprung differential
354	....And differential support feature
355	....And final gear drive
356	...And final gear drive
357	..Belt or chain drive
358	..Swinging axle, single pivot
359	..With sprung differential
360	...And differential support feature
361	...And final gear drive
362	...And transverse leaf spring suspension
363	..And final gear drive
364	.Variable speed or direction
365	..Plural
366	..Belt or chain
367	..Fluid drive
368	..Friction drive
369	..Planetary
370	.With brake
371	.Final gear drive at each of two parallel wheels
372	..Planetary
373	..Belt or chain
374	.Gear transmission relationship to frame or axle
375	..Transmission is differential
376	.Shaft relationship to frame or shaft
377	.Transmission support
378	..Differential or axle housing
379	..Shaft
380	...With propeller shaft casing, (e.g., torque tube)
381	...Vibration damping
382	..Flexible support
383	.With particular drive coupling
384	..Relative axial movement
385	..Drive connection to wheel
76	COMPENSATING DEVICES
314	WITH PLURAL FUEL TANKS
315	MANUALLY ACTUATED CONTROLLING DEVICES
316	.By other than hand or foot of operator
317	.On mine car vehicle
318	.On delivery-type vehicle
319	.With rein means
320	.With vehicle control extension
321	.With plural control stations
322	..Side-by-side
323	..For single control means
324	..With tool or equipment control
325	..Braking controllable by passenger
326	.With movable control station or seat position
327	..Movable cab
328	...Tilting
329	..Simultaneously movable seat and control
330	..Seat on seat portion movable to alternate positon
331	...With tool or equipment control
332	.With tiller-type handle
333	.Multiple vehicle functions controllable by single device
334	.With adjustable operator engageable control
335	.With fuel or air throttle control
336	.With transmission control
78	.Steering shaft
79	STEERING GEAR
131	.Steering by terrestrial guide
132	.With fluid power assist
133	..With alternate emergency power means (e.g., pump, gearing etc.)
134	..Between articulated wheeled vehicle sections
135	...Combined with another steering mode
136	...Reciprocating power assist
137	....Including flexible power transmitting means
138	....Including interengaging gear means
139	....Plural working members
140	..Each wheel steerable
141	..With condition modulated steering
142	...Electrical control
143	...Speed condition only
144	..With swinging vehicle frame transversing axle
145	..Including flexible power transmitting means
146	..Steering column supported
147	...Including rack gear means
148	..With rack and pinion gearing intermediate steering shaft and power assist
149	..Having rotary working member
150	..Having flexible working member
151	..Steering linkage includes interengaging gear means
152	..With plural working members
153	...Working member movement traverses vehicle path
154	..Working member movement traverses vehicle path
155	...Moves separate rod for each wheel steering arm
156	....Via intermediate pivoted member
157	.....With link member interconnecting pivoted member and rod
158	....Working member is moving cylinder
159	...Working member part engages wheel steering arm
160	...Working member part engages tie rod
161	..Movable working member engages wheel steering arm
162	..Movable working member is moving cylinder
163	..With linkage intermediate working member and wheel steering arm
79.1	.With electric power assist
79.3	.With mechanical power assist
79.4	..Swinging axle
79.5	..Truck
64	DUST GUARDS
89.1	BODIES
89.11	.With passenger compartment having article receiving or removing means
89.12	.Tractor and similar vehicle cabs
89.13	.Movable cab or operator's station
89.14	..Tilting
89.15	...Via power or power enhancing means
89.16	..Overmotor cab
89.17	.Movable body portion facilitating engine access
89.18	..Cab portion
89.19	.Overmotor cab
89.2	.With means for handling exhaust of a motor
90	.Dashboards
90.6	.Footboards and pedal guards
311	FRAME
312	.With structure adapted to receive or support a motor, change-speed gearing, or other power train element
313	MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS
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900	ARGICULTURAL-TYPE TRACTORS
901	DEVICES FOR TRAVERSING VERTICAL SURFACES
902	SHOCK OR VIBRATION ABSORBING OR TRANSMITTING MEANS BETWEEN WHEEL SUSPENSION AND MOTOR
903	AIRSTREAM REACTIVE VEHICLE OR VEHICLE STRUCTURE
904	TRACTION DOLLIES FOR AIRCRAFT (Cross Reference Art Collection created in companion project)
905	AXLES
906	ADJUSTABLE AXLES
907	MOTORIZED WHEELCHAIRS
908	MOTOR VEHICLES WITH SHORT WHEELBASE

0.5	MISCELLANEOUS
	SPEAKING TUBES
18	.Systems
19	.Alarms and indicators
20	.Combined mouth and ear pieces
21	.Mouthpieces
22	.Tubes
30	AUDITORIUM
101	GEOPHYSICAL OR SUBSURFACE EXPLORATION
102	.Well logging
103	..Programmed or timer-controlled
104	..Directional source or detector
105	..Bore hole or casing condition
106	..Seismic wave generation
107	.Programmed or timer-controlled
108	.Seismic source and detector
109	..Aerial
110	..Underwater
111	..Plural sources
112	..Plural detectors
113	.Seismic wave generation
114	..Vehicle-mounted
115	..Bubble suppression or control
116	..Explosive
117	...Gas
118	....Underwater
119	..Fluid means
120	...Underwater
121	..Moving weight
122	.Seismic wave detection
123	ECHO SYSTEM
124	.Altitude or depth detection
125	SOUND LOCATION
126	ANATOMIC OR PROSTHETIC RELATION
127	.Dentiphone
128	.Ear and mouth
129	..Ear
130	..Auditory canal insert
131	...Stethoscope
132	...With diaphragm
133	...Deflector type
134	...Eardrum
135	...Ear insert
136	..Deflector type
137	..Receiver
138	MECHANICAL TELEPHONE
139	WAVE GENERATION AND DETECTION
140	WITH VESSEL
141	COMBINED
142	WAVE GENERATION
143	MOVING SOUND PRODUCER OR DEFLECTOR
144	PLURAL DIAPHRAGM SOUND SOURCES
145	.Plural chambers
146	.With sound-asborbing means
147	.Three diaphragms
148	DIAPHRAGM AND ENCLOSURE
149	.Moisture proof
150	.Recessed (e.g., wall-mounted, etc.)
151	.With sound-absorbing means
152	.With horn
153	.Rounded enclosure (e.g., curved, etc.)
154	.Inclined diaphragm
155	.Reflector baffle
156	.Reflex baffle
157	DIAPHRAGM
158	.Microphone type
159	.With horn
160	.With resonant chamber
161	.With direct mechanical connection to drive unit
162	..Stylus bar
163	.Plural dependent diaphragms
164	.Sectional diaphragm
165	..Concentric annular section
166	.With damping means
167	.Critically defined material or coating
168	..Metallic material
169	..Fibrous material
170	..Laminated type
171	.Mounting or suspension means
172	..Elastic suspension means
173	.Particular shape
174	..Variable thickness
175	SOUND-MODIFYING MEANS
176	.Lens
177	.Intensifying horn
178	..Collapsible
179	..With particular mounting structure
180	..Material
181	..With vibratory filaments
182	..With resonant chamber
183	...Double wall
184	..Having apertures in walls
185	..With sound-path restriction
186	...Adjustable
187	..Plural intensifying portions
188	...Similar portions
189	..Multisection housing
190	...Separable
191	..With external sound deflector
192	..Particular shape of the horn
193	...Spiral sound path
194	...Doubly folded sound path
195	...Wide angle annular outlet
196	.Within tubular means
197	..Adjustable
198	.Housing or enclosure (e.g., sound confining and absorbing)
199	..Speaker type
200	..Machine type enclosure
201	...Offfice type devices (e.g., typewriters, teleprinters, etc.)
202	...Electical type devices (e.g., transformers, motors, etc.)
203	...Reaction engine test chamber
204	...Internal-combustion engine
205	...Partial enclosure or shroud
206	.By wave interference
207	.Mechanical vibration attenuator
208	..Damping of flexural structure
209	..Relatively moving parts
210	.Sound absorbing fence or screen (e.g., jet engine or vehicle noise)
211	.Combined
212	.Muffler, fluid conducting type
213	..Reaction engine type
214	...Upstream (e.g., intake silencer)
215	...With adjustable outlet nozzle
216	....Longitudinally adjustable section
217	...Removable silencer unit (e.g., mobile)
218	...Ground installation silencer
219	...With adjustable internal baffles
220	...With disparate fluid mingling
221	....Liquid
222	...With sound absorbing material
223	..Silencer for firearms
224	..Sound absorbing ventilating duct or curb (e.g., a/c, heat, air flow type)
225	..With fan to assist fluid flow
226	..With adjustable fluid flow
227	..Pipe-muffler (e.g., tail pipe type)
228	..With exhaust pipe
229	..Carburetor, burner, or compressor intake silencer
230	..Pneumatic type motor (e.g., air hammer, etc.)
231	..With solid particle separator (e.g., spark arrestor, vacuum cleaner, etc.)
232	..Separate distinct units serially connected
233	..Liquid motion silencer
234	...Water-closet type
235	..Underwater discharge

SOUND-MODIFYING MEANS
.Muffler, fluid conducting type
236 ..With muffler cut-out
237 ..With pressure relief safety valve
238 ..Multiple distinct inlets and/or outlets
239 ...Outlets
240 ..Manifold type
241 ..Adjustable muffler (i.e., internal or external parts)
242 ..Mouthpiece (e.g., telephone, microphone, etc.)
243 ..With repair, replacement, or quick disassembly
244 ..Corrosion prevention
245 ...Internally coated parts
246 ...Nonmetallic
247 ..Straight-through passage
248 ...Continuous conduit
249 ....With expansion chamber
250 .....And side branch
251 .....And multi-passage
252 ...With sound absorbing material
253 ...With muffler bypass
254 ....Valve controlled
255 ...Expansion chamber
256 ..With sound absorbing material
257 ...And multi-passage
258 ...Pervious material interposed in flow path
259 ..With disparate fluid mingling
260 ...Liquid
261 ....Sprayed
262 ...Induced by suction
263 ....Motion induced
264 ..With baffle or baffle structure
265 ...Retroverted
266 ....And side branch chamber
267 ...Coaxial foraminous walls
268 ...Multi-passage
269 ...Expansion chamber type
270 ....With alternating partial baffles along the length of casing
271 ....With adjustable or flexible wall
272 ....Plural chambers
273 ....And side branch chamber
274 ....With centrifugal flow
275 ....And multi-passage
276 ...Side branch
277 ...Movable baffle
278 ....Biased
279 ...Spiral
280 ....Helical
281 ...Perpendicular and/or oblique
282 ...Casings
283 ....Air or liquid cooled
284 .Sound absorbing panels
285 ..Load bearing block type structure
286 ..Specific acoustical properties or dimensions
287 ..Movable/foldable panels
288 ..Cellular
289 ..Light permeable
290 ..Multilayer panel or wall structure
291 ...With membrane outer layer
292 ...With perforated or porous face and honeycomb-like core
293 ..With channels or cavities in surface layer
294 ..Materials
295 .Space absorbers
296 .Methods
****
CROSS-REFERENCE ART COLLECTIONS
****
400 WAVE COUPLING
401 .Earth
402 .Liquid
403 REFRIGERATOR COMPRESSSOR MUFFLER
404 HOBBY CRAFT ENGINE MUFFLER

CLASS 182 FIRE ESCAPES, LADDERS, SCAFFOLDS

1	MEANS MAINTAINING STEP LEVER ON HORIZONTALLY PIVOTED LADDER
2	MEANS MAINTAINING PLATFORM LEVEL ON ANGULARLY MOVABLE SUPPORT
3	TORSO HARNESS
4	.Window washer type
231	.Attached to strand wound on reel, and means for retarding unwinding of strand
232	..Including spring for rewinding strand
233	..Fluid resistance brake
234	..Movable, friction brake element applied by centrifugal force
235	..Friction brake and occupant-operated mechanism for applying brake during descent
5	.Strand-engaging, with descent retarder
6	..Leg or loop type
7	..With seat
8	.Ladder-associated
9	.With pole encircling or grasping means
10	INCLINED CABLE SUPPORTING CARRIER TRAVELING THEREALONG
11	.Occupant-controlled
12	HORIZONTAL TRAVERSING - ACTUATION, CONTROL, OR RESPONSE
13	.Occupant actuation or control
14	..Occupant-controlled ascent or descent
15	..Holding means
16	.With handle or steering means
17	.Holding means
18	WITH INDICATOR, SIGNAL OR ALARM
19	AUTOMATIC CONTROL
20	CONVERTIBLE
21	.Ladder
22	..Ladder of different type
23	...Stepladder prop pivoted to inverted position
24	....Stile and prop end abutting
25	....With spreader or tie
26	...Stepladder type with variable prop and ladder connection
27	..Scaffold
28	..Table
29	...Ironing board
30	....Board as pivoted ladder prop
31	.....Crossed leg board support
32	...Wash stand
33	..Chair or stool
33.2	...Bottom and legs invert to unveil ladder
33.3	...Steps on chair back
33.4	....Fixed steps
33.5	...Step withdraws from beneath seat
33.6	....End-for-end turnout
34	..Bed
35	.Furniture
36	TRAVERSING, TRACK-MOUNTED
37	.With occupant elevating or lowering means
38	.With vertically spaced second track
39	.Ground- or floor-engaging
40	UPWARDLY EXTENSIBLE FLEXIBLE LADDER OR ESCAPE
41	.Self-rigidifying
42	ENDLESS CONVEYER ESCAPE
43	.Top and bottom support
44	..With pivoted or folding attached carrier
45	PITCHED ROOF CONFORMING SCAFFOLD
46	WITH INSULATION
47	.Fire or heat shield
48	CHUTE OR ESCAPE TOWER FOR PERSONNEL
49	.With ladder
50	WITH PROJECTOR OR PROJECTILE
51	WITH FLUID HANDLING
52	.Conduit is support
53	DETACHABLE WINDOW SEAT TYPE
54	.With step or additional platform
55	.Platform below window
56	.Extensible platform
57	.Interior wall-engaging means
58	..Depending
59	...Saddle
60	....Wall-clamping means
61	....Exterior strut
62	..With outside strut or brace
62.5	WITH EXTENSIBLE VERTICAL AND NONVERTICAL SECTIONS
63	WITH TRANSPOSITIONING AND ERECTION MEANS
64	.Ladder rotatably mounted on supporting base (e.g., vehicle)
65	..Base rotates on vertical axis
66	...Reciprocating ladder section
67	....Extending section stiles supported on fixed section stiles
68	..Pivotally mounted extension ladder on horizontal axis
69	...Lazy tong-extending means
70	WITH STORAGE DEVICE FOR SUPPLE ESCAPE
73	.Reel
74	..Escape of ladder type lowers upon release of latch
75	...With retarder or brake on reel
236	..With means for retarding unwinding of strand type escape
237	...Including spring for rewinding strand
238	...Fluid resistance brake
239	...Movable, friction brake element applied by centrifugal force
240	...Friction brake and occupant-operated mechanism for applying brake during descent
71	.Occupant weight-actuated descent device
72	.Occupant-controlled descent retarder
76	.Wall-embedded
77	DOOR AND LADDER
78	.Door operates ladder
79	..Guided rigid ladder
80	...Guide on wall or frame
81	..Door and ladder on opposite sides of wall
82	WALL- OR FLOOR-ATTACHED
83	.Wall-mounted platform, with ladder
84	..Movable platform with movable ladder
85	..Movable ladder
86	...Pivoted
87	.Embedded scaffold support member
88	.Retractable or collapsible beneath floor, track-mounted
89	.Spring-biased pivoted step or ladder
90	.Independent rung or step
91	..Pivoted
92	..Readily detachable
93	.Ladder
94	..Wall penetrating operating means
95	..Folding, rigid components
96	...Parallelogram type
97	..Pivoted
98	...Normally counterbalanced to inoperative position
99	..With portion overhanging roof
100	.Single pole or strand
101	LADDER WITH VERTICALLY MOVING PLATFORM OR ESCAPE
102	.Ladder supports platform
103	..Stile or prop-guided carriage
104	PIVOTALLY CONNECTED LADDERS, MUTUALLY SUSTAINING
105	.Central upright ladder section supported therebetween
106	WITH HANDRAIL OR GUARD FOR LADDER
107	SAFETY DEVICE FOR GROUND-SUPPORTED LADDER
108	.Terminal foot or shoe
109	..Diverse ground-engaging means

SAFETY DEVICE FOR GROUND-SUPPORTED LADDER
.Terminal foot or shoe
110 ..Suction cup
111 ..Pivotal component
112 SAFETY DEVICE, PLATFORM ASSOCIATED
113 .Railing
114 WITH SUCKER ROD SUPPORT
115 LADDER AND PLATFORM
116 .Platform with ladder as support
117 ..Between spaced ladders
118 ...Facing ladders
119 ....Readily detachable platform
120 ..Detachable step, single ladder
121 ...Plural rung-engaging
122 ....Stile-contacting
123 ..Plural platforms
124 ..Ladder with pivoted ladder prop and pivoted platform
125 ..Platform positioned by ladder and prop divergence
126 ..Prop-pivoted platform
127 LADDER WITH LAND VEHICLE
128 SCAFFOLD SUPPORTED INTERNALLY ON SHAFT
129 COMBINED
130 PLURAL PLATFORMS, COMMON SUPPORT
131 .Mounted for relative motion
132 .Stepped
133 POLE OR STRAND GRASPING-TYPE CLIMBER
134 .Foot- or leg-attachable
135 ..With diverse holding means for occupant
136 .Alternate grasping
137 BODY CATCHER
138 .Sheet or net type
139 ..Tensioned peripherally
140 ..Folding base
141 PLATFORM WITH ELEVATING OR LOWERING MEANS
142 .Suspended
143 ..Simultaneously operable suspension means
144 ...Platform continuously level
145 ..Separate (i.e., nonwork) support for suspension means
146 ...Platform holding detent coacts with support
147 ..Plural distinct elevating means
148 .Operating means on platform
149 .Trestle-type support, beam-elevating
150 SUSPENDED PLATFORM
151 KIT OR SEPARABLE PARTS
152 UNITARY FOLDABLE, RIGID SCAFFOLD OR LADDER
153 .Trestle
154 ..Crossed leg
155 ..Legs foldable parallel to beam axis in all planes
156 .Collapsible ladder
157 ..Lazy tong type
158 ...Mechanical or power-extending means
159 ..Parallel moving side, pivoted rung or step
160 ...Storage providing component
161 ...Plural element stile
162 ...With collapsible prop
163 ..Folding stile
164 ...Rung-to-rung stile sections
165 LADDER WITH PIVOTED PROP
166 .Section extensible below prop pivot
167 ..With step registration
168 .Coplanar extension with prop pivoted to lower section
169 .Single rear prop, pole type
170 .Rear prop, laterally moving
171 .Converging and contacting stiles or props
172 .Lateral prop
173 .Hinged to top-step rear flange
174 .Pivoted to top-step cleat
175 ..With cleat spaced spreader or tie
176 ...Multiple link folding spreader
177 .Overlapping stile and prop
178 WITH STACKING MEANS
179 SELF-SUSTAINING
180 .Ladder
181 .Scaffold horse (i.e., trestle)
182 ..Intermediate extensible shaft
183 ..Longitudinally extensible beam
184 ..Extensible leg
185 ..Unitary leg and beam coupler brace
186 ..Beam clamped by leg actuation
187 SCAFFOLD EXTERNAL OF SHAFT
188 .Horizontally adjustable
189 SINGLE STILE, STRAND OR POLE
190 .Flexible
191 ..With sliding carrier
192 ...Load-responsive brake
193 ...Occupant-actuated brake
194 LADDER
195 .Slidable nested single rung units
196 .Flexible
197 ..With spacer
198 ...Rung-attached
199 ..Plural spaced strand stile member
200 .Supporting surface compensating means
201 ..Stile extension
202 ...Equalizing extensions
203 ...Rung-engaging means
204 ...Increment adjustment
205 ....Ratchet type
206 .With hook or grab
207 .Extension
208 ..Mechanical or power-extending
209 ..With latch
210 ...Section movement actuated
211 ....Spring-biased latch
212 ...With remote control of latch
213 ....Elevating cable actuated
214 .With spacer means
215 .Rung sandwiched between elements of composite stile
216 .Tie rod assembled
217 .With reinforcing means
218 ..Bow string type
219 ..For side rail
220 .Independent support for rung
221 LEG OR SHOE ATTACHABLE POLE CLIMBER
222 PLATFORM
223 .Relatively movable sections
224 SCAFFOLD HORSE BEAM OR LEG
225 .Relatively movable
226 ..Beam clamped by pivoting leg
227 ..With intermediate staff
228 RUNG, STEP OR RUNG-STILE CONNECTION
229 PUTLOG OR SPACER
241 MOVABLE STRAND ESCAPE AND MEANS FOR RETARDING TRAVEL OF STRAND
230 MISCELLANEOUS

1.5	AUTOMOBILE CRANK AND GEAR CASE SERVICE
2	MINE-CAR LUBRICATION
3.1	RAIL OR RAIL VEHICLE WHEEL LUBRICATOR
3.2	.On vehicle
4	WINDMILL LUBRICATION
5	SLIDE-BEARING LUBRICATION
5.1	BEARING PACKER
6	SYSTEMS
6.1	.With means to control machine operation
6.2	.With machine tilt compensating means
6.3	.With machine starting means
6.4	.With safety or indicating means
6.5	.Crank-type machines
6.6	..Radially extending cylinders
6.7	..Inverted cylinder
6.8	..Cylinder lubrication
6.9	..With valve lubrication
6.11	.Gas turbine
6.12	.Gearing
6.13	.Dry sump
6.14	.Machine tools
6.15	.Sewing machines
6.16	.Rotary compressor
6.17	.Cylinders parallel to shaft
6.18	.Vertical shaft
6.19	.Linkage mechanisms
6.21	.With lubricant treatment means
6.22	..Temperature or viscosity
6.23	..Foam or air
6.24	..Purification means
6.25	...Magnetic
6.26	.With mist or fog means
6.27	.With guard
6.28	.Pump or pump systems mounting means
7.1	.For twister ring or spinning spindle
7.2	.For chassis lubrication
7.3	..With flow regulator
7.4	.With measuring or metering value system
8	..Continuous tube
9	..Sliding tube
10	..Wipers
11.1	.Splash
11.2	..With conduit
11.3	..For transmission band
11.4	..With connecting rod clippers or scoops
11.5	..For endless band or chain feed
12	CONVEYORS
13.1	SPLASH
14	LUBRICATORS
14.1	.Spring
15.1	.Belt, cable, chain or conveyor
15.2	..With injector
15.3	..With intermittent spray or drip
16	..Swab-applied
17	..Roller-applied
18	.Cylinder lubricators
19	..Swab-applied
20	..Rotary swab-applied
21	.Elevator-guide lubricators
22	..Swab
23	..Rotary brush or roller
24	.Piston-rod lubricators
25	..Swab
	.Force feed
26	..Pumps
27.1	...Mechanically operated
27.2	....Multiple pumps
27.3	....Pump with sight feed
27.4	....Oscillating cylinder
28	...Hand-operated
29	...Fluid-operated
30	...Pendulum-operated
31	...Rotary
32	...Oscillating piston
33	...Rotary piston and valve
34	...Oscillating distributing valve
35	...Rotary distributing valve
36	...Attachments
	..Followers
37	...Mechanically operated
38.1	...Hand-operated
38.2	....Follower rod threaded to receptacle
38.3	....Follower threaded to receptacle
38.4	....Follower threaded to rod
39	...Fluid-operated
39.1	....Cyclical-type metered injector
40	....Fluid return
41	....Spring-assisted
42	....Spring return
43	...Centrifugal
44	...Pendulum-operated
45.1	...Spring-operated
45.2	....Spiral spring
46	...Weight-operated
47	...Balance piston
48.1	...Locking devices
48.2	....Friction type
	..Fluid-operated
49	...Condensation displacement
50.1	....Double passage
50.2	.....Atomizer
51	....Single passage
52	....Choke plugs
53	....Auxiliary feeding receptacles
54	...Displacement by liquid
55.1	...Displacement by air or steam
55.2	....Air line lubricators
57	....Initial pressure
58	....Suction
59	.....Vented
60	...Abrasion
61	..Conveyors
62	...Bucket
63	....Rotary
64	..Capillary attraction
65	.Gravity feed
66	..Automatic cutoff
67	...Electrically operated
68	...Thermostats
69	...Vibrators
70	...Centrifugal
	...Rotatable valve
71	....Mechanically operated
72	....Fluid pressure-operated
73	....Pendulum-operated
	...Vertically reciprocating valve
74	....Mechanically operated
75	.....Spring-retained
76	....Fluid pressure-operated
77	....Centrifugally operated
78	....Pendulum-operated
79	...Horizontally reciprocating valve
80	..Combined closure and valve
81	..Multiple feed
82	..Vertically movable valve
83	..Measuring valve
84	..Airtight receptacle
85	..Siphons
86	..Locking valve
87	..Fiber valve
88.1	.Oil cup closure
88.2	..Flexible cover
89	..Depressible cap
90	..Hinged cover
91	...Spring-controlled
92	..Rotatable cover
93	...Spring-controlled
94	..Slidable cover
95	...Spring-controlled
96	.Sight feeds
97	..Attachments
98	.Liquefiers
99	..Solid stick
100	.Slide-bearing lubricators
101	.Roller
102	.Swab

	LUBRICATORS
103.1	.Constant level
103.2	..Float-controlled
104.1	.Lubricant heating and/or cooling device
104.2	..For internal-combustion engine
104.3	...Lubricant cooling device
105.1	.Refilling device
105.2	..Grease gun
105.3	.Nipple or fitting
106	.Drip pans
107	FUSIBLE SAFETY MEANS FOR LUBRICATION DEVICE
108	SAFETY ALARM OR INDICATING MEANS
109	MISCELLANEOUS

2	COMPOSITE
3	.Animal powered only
4	.Weight only
5	..Escapement controlled
6	..With weight raising means, (e.g., winding)
7	...With motor
9	.Spring only
10	..With winding means
11	...With motor
12	....Momentum type
13	...With overwinding preventer
14	...With indicating means
15	ANIMAL POWERED
15.5	.Pivoted seat
16	.Belt tread
17	.Drum tread
18	.Pivoted disk tread
19	.Sweep type
20	..With driving or whipping means
21	..Sweeps
22	...Draft equalizers
23	..Draft devices
24	.With driving or whipping means
25	.With anchor
27	WEIGHT
28	.Operator's weight
29	.Oscillating
30	..Wave or irregular motion type
31	.Escapement controlled
32	.With weight raising means, (e.g., winding)
33	..With motor
35	..With overwinding preventer
36	..With indicating means
37	SPRING
38	.Escapement controlled
39	.With winding means
40 R	..With motor
40 A	....Clock wind
40 B	....Electric
40 C	....Cradle
40 D	....Sewing machine
40 E	....Churns
40 F	....Fans
40 H	....Vehicles
40 K	....Clocks
40 L	....Advertising device
40 M	....Phonograph
40 S	....Razors
41 R	...Momentum type
41 A	......Engine starters
41 C	......Centrifugal
41 WW	......Wheel winds
43	..With overwinding preventer
44	..With indicating means
45	.Spring mounting
	******************************
	DIGESTS
	******************************
DIG 1	Spring powered toys
DIG 2	Foreign digest

35 CUSTOMER SERVICE
36 .Combined services
37 .Banking
38 .Dining room service
39 ..With machine readable means
40 ..In a transport vehicle
41 ..Drive-in
42 ..Dining table structure movable in fixed path
43 ..With conveyor cleaner
44 ..Menu make-up table
45 ..Wheeled carrier
46 ...Track guided
47 ....With food carrier elevating means
48 ....Overhead
49 ..With conveyor (e.g., belt type)
50 ...With food carrier elevating means
51 ..With elevator
52 .Store service
53 ..Drive-in
54 ..With cooling room having transparent access door
55 ..With remote item dispensing
56 ...Machine readable
57 ..Relatively movable selection station and merchandise shelving
58 ..With order carrier movable on track means
59 ..Checkout counter
60 ...With conveyor to vehicle loading station
61 ...With means enabling price reading
62 ...With cart accommodation or handling
63 ....Cart emptying facilitation
64 .....Self-unloading
65 .....With elevating means
66 ...With bag storage or bagging support
67 ...With turntable
68 ...With power driven belt conveyor
69 ..With power driven conveyor
2 ..Gravity systems
3 ...Selective delivery
4 ...Tilting track
5 ....Both ends movable
6 .....Pivoted arms
7 ..Self-propelled car systems
8 ..Single-impulse systems
9 ...Speed increasing
10 ...Spring
11 ....Longitudinally moving line
12 ...Gravity
13 ...Spreaders
14 ..Cable-propulsion systems
15 ...Grip, selective release
16 ...Load release
17 ...Reciprocating
18 ....Drop car
19 ..Switches
20 ...Selective
21 ....Carrier returned
22 ..Elevators and drops
23 ...Speed-controlled drop
24 ..Buffers
25 ...Slide
26 ..Carriers
27 ...Wheeled
28 ....Self-propelled
29 ....Drop receptacle
30 ....Derailment guards
31 ...Rolling
32 ...Sliding
33 ..Details
34 ...Track

CLASS 187 ELEVATORS

1 R	MISCELLANEOUS
1 A	..Tension equalizers
2	BUILDING MATERIAL
3	DUMB-WAITER TYPE
3.1	.With electric control or signal system
4	.Mail
5	.Locked car
6	EXTERIOR WALL
7	.Lateral movement
8	.Car brake
8.41	ROADWAY VEHICLE TYPE
8.43	.With jack superimposed on elevator
8.45	.With adjustable integral elevating unit
8.47	.With safety device
8.49	..Locking means or additional support
8.5	...Rack and detent (e.g., pawl and ratchet) lock
8.52	..Wheel chocks or stops
8.54	.Convertible, "run-on" to and from "freewheel"
8.56	.Vehicle operated
8.57	..Expansible quadrilateral bar type
8.59	.Four-poster type
8.61	.With attached floor section
8.62	.With pit closure operator
8.64	.With rotation limiting means
8.65	.With floor contacting guides
8.67	.Adaptable to vehicles of different gauge
8.69	.Gearing type elevating unit
8.71	.Lever or linkage type elevating unit
8.72	..Expansible quadrilateral type
8.74	.Axle-engaging type
8.75	..Adjustable
8.77	.Loading guides
9 R	PORTABLE
9 E	..Extensible mast
10	.Inclined
11	.Winding drum
12	INCLINED
13	.Cable-controlled brakes
14	..Rail gripping
15	SHIFTABLE WEIGHT
16	SUPERPOSED CARS
17	MOTOR MECHANISM
18	.Lazy tongs
19	.Rack and pinion
20	.Rope drive
21	..Hand-rope operated
22	..Tensioning feature
23	..Differential sheave
24	.Screw
25	..Traveling rotary element
26	.Traveling sheave
27	.Winding drum
100	ELECTRIC CONTROL SYSTEMS AND DEVICES
101	.Master control unit
102	..Including redundant circuitry
103	.For door operating systems
104	..With safety or security features
105	.For safety of passengers or protection of equipment
106	..Under excess weight condition
107	..During seismic or other building movement
108	.For electro-mechanical braking systems
109	..Emergency braking
110	.For hydraulic motive power systems
111	..With speed control
112	.For electric motive power systems
113	..Leveling systems
114	..Utilizing auxiliary power
115	..Vibration and "start bump" control
116	..With speed control
117	...In terminal zones
118	...Speed pattern generators
119	...Of AC motor
120	...Of DC motor
121	.Call registration systems
122	..Single car controllers
123	...For freight lifts or mine hoists
124	..Group controllers
125	...With automatic dispatching
126	...With security or priority preemption
127	...With assignment of calls to cars
128	...With assignment of cars to zones
129	..Floor selectors
130	.Monitoring, Signalling, and Indicating Systems
131	..For load sensing and passenger counting
132	..Of passenger activity
133	..Of operating parameters
134	..Position detectors
135	..Status indicators
136	...Of position
137	...Of direction or responding car
138	...For dispatching
139	..Information communication systems
140	..Alarm systems
28	CONTROL MECHANISM
29.1	.For manual control
29.2	.For hydraulic control
30	.Door actuated
31	..Electric
32	.Landing stops
33	..Lock
34	.Limit
35	..Electric
36	..Carrier actuated
37	...Deflected rope
38	.Speed controlled
39	..Electric
40	.Well obstruction
41	..Electric
42	.Operator actuated
43	..Electric
44	..Rope controllers
45	...Running rope
46	.Controller locks
47	..Door actuated
48	...Electric
49	...Locked door
50	....Electric
51	DOOR MECHANISM
52 R	.Motor actuated
52 LC	...Landing and car doors operatively coupled
53	..Common motor shaft
54	..Separate motors
55	.Flexible screens
56	.Sliding doors
57	..Locked door
58	..Vertical movement
59	...Locked door
60	...Sliding coupler
61	.Locks
62	HATCH MECHANISM
63	.Lever opener
64	.Sliding coupler
65	.Direct contact
66	.Vertically slidable hatch
67	WELL-END CUSHIONS
68	FLUID GOVERNORS
69	.Car-supported pump
70	.Counterweight
71	EMERGENCY CABLES
72	CABLE RELEASERS
73	CAR BRAKES AND CATCHES
74	.Door controlled
75	.Landing chairs
76	..Car supported
77	.Driven catch devices
78	..Rotating gear
79	..Well supported
80	.Car supported

CAR BRAKES AND CATCHES
.Car supported
81 ..Cable controlled
82 ...Positive
83 ....Rail side
84 ....Sliding
85 ...Rail face
86 ...Rail side
87 ....Eccentric
88 ....Wedge
89 ..Speed controlled
90 ...Rail side
91 ....Vertically pivoted
92 ..Operator controlled
93 ...Rail side
94 COUNTERBALANCES
95 GUIDES
96 .Mine crossheads
97 RAILWAY-CAR LOCKS
98 WELL-OBSTRUCTION DEVICES
****
DIGEST
****
DIG 1 Safety edge

CLASS 188 BRAKES

DECEMBER 1990

1.11	WITH CONDITION INDICATOR
1.12	TO RETARD ROLLING OF CASTER
2 R	VEHICLE
2 A	..Braking torque regulators
2 D	..Bowdin wire-operated
2 F	..Wheelchair brakes
3 R	.Train
3 H	...Fluid pressure vehicle
4 R	.Wheel and ground
4 B	...Rotary brake member
5	.Ground-engaging
6	..Sprag
7	..Anchors
8	..Sled
9	.Wagon
10	..Four-wheel
11	..Divided beam
12	..Running gear support
13	...Divided beam
14	..Hayrack type
15	..Retreating shoe
16	.Independent wheel
17	.Hub or disk
18 R	..Motor vehicle
18 A	....Disc brakes
19	.Cart
20	.Children's carriages
21	.Truck
22	..Two-wheel
23	...Ground-engaging
24.11	.Velocipede (e.g., bicycle, etc.)
24.12	..Including mechanism for opposed gripping of wheel rim or tire
24.13	...Wheel rim configured to cooperate with components
24.14	...Having means to increase braking force (e.g., self-energizing brake, etc.)
24.15	....Variable leverage actuator
24.16	....Plural brakes having common actuator
24.17	...Actuation controlled by back-pedalling
24.18	...With means to lock brake in actuated position
24.19	...Having means to adjust spacing between brake component and wheel rim or tire
24.21	...Having center-pull, cable-type actuator for mechanism
24.22	...Specific actuator element structure
25	..Roller
26	..Hub or disk
27	..Pivoted wheel
28	.Clasp
29	.Top shoes
30	.One-way
31	.Positive lock
32	.On ground
33	.Railway
34	..Train
35	..Wheel and rail
36	...Chock
37	....Roller shoe
38	..Track
38.5	...Plural abutments selectively engageable by vehicle-carried means, e.g., car-spotter
39	...Rotary shoe
40	...Slot
41	..Rail
42	...Carrier type
43	...Grippers
44	....Automatic
45	....Wheel clamps
46	..Equalizing series
47	..Connected trucks
48	..Maximum traction type
49	..Four wheel opposing
50	...Open center
51	...Divided beam
52	..Four wheel spreading
53	...Divided beam
54	....Locomotive type
55	....Mine car type
56	..Clasp
57	..Top shoes
58	..Disk on axle
59	...Side shoes
60	..Positive lock
61	..One-way
62	..On track
63	...Catchers
64	WHEEL AND STRAND
65.1	STRAND
65.2	.With attaching means
65.3	.Plural brakes
65.4	.Tortuous grip
65.5	..Adjustable
67	ROD
	WHEEL
68	.Frictional and positive
69	.Positive lock
70 R	.Axially and transversely movable
70 B	...Self-energizing
71.1	.Axially movable brake element or housing therefor
71.2	..With clutch between load and brake assemblage
71.3	..Antipodal, relatively separable brake elements
71.4	...Annular elements
71.5	..Plural rotating elements (e.g., "multidisc")
71.6	..With means for cooling brake
71.7	..With means to adjust for wear of brake
71.8	...Self-adjusting means
71.9	....Including unidirectionally rotating screw
72.1	..With means for actuating brake element
72.2	...Self-force-increasing means
72.3	...And means for retracting brake element
72.4	...By fluid pressure piston
72.5	....Piston for each of plural elements
72.6	....And/or mechanical linkage
72.7	...By inclined surface (e.g., wedge, cam or screw)
72.8	....Screw or helical cam
72.9	...By pivoted lever
73.1	..Structure of brake element
73.2	...Circumferential or circumferentially spaced
73.31	..Retainer for brake element
73.32	...Having means to facilitate changing brake element
73.33	....By manipulation of brake actuator
73.34	.....Pivotable actuator
73.35	...Having actuator and means to prevent vibration thereof
73.36	....Including means to prevent vibration of brake element
73.37	...Having means to prevent vibration of brake element
73.38	....Spring
73.39	...Including torque member supporting brake element
73.41	...Including actuator pivotable in plane parallel to axis of rotation of wheel
73.42	....And slidable in that plane
73.43	...Including actuator slidable in plane parallel to axis of rotation of wheel
73.44	....On axially extending pin
73.45	.....Plural pins

	WHEEL
	.Axially movable brake element or housing therefor
	..Retainer for brake element
73.46	...Including actuator fixed on torque member
73.47	...Having closed loop type housing
74	.Transversely movable
75	..Opposing
76	...Rim grip
77 R	..Strap
77 W	....Wrap band type
78	..Expanding
79	...Multiple sets
323	...Three shoes
324	....Rotary cam operatively abutting shoe ends
325	...Two shoes
326	....Operators at both ends of each shoe
327	....Anchors adjacent unoperated ends
328	.....Common anchor pivot or abutment
329	......Rotary cam abutting shoe ends
330	.....Rotary cam abutting shoe ends
331	....Adjacent ends operatively connected and not anchored to support
332	.....Rotary cam abutting shoe ends
333	.....One end anchored
334	....Anchors at alternate ends
335	...Radially guided shoe
336	...Continuous split band
337	....Anchored intermediate ends
338	.....Rotary cam operatively abutting band ends
339	....Rotary cam operatively abutting band ends
340	...Lateral guide for shoe
341	...Anchor
342	...Self-energizing
343	...Wedge operator
79.51	..Having wear take up or compensating structure
79.52	...Temperature responsive
79.53	...Feeler actuated
79.54	...Actuated in conjunction with other braking element
79.55	...Actuated by brake operating lever
79.56	...Having separate adjustment actuator mechanism
79.57	...Manually operated
79.58	....Brake operator length adjusted
79.59	....Mounted between shoe and a support member
79.61	.....Causes direct, simultaneous adjustment of plural shoes
79.62	...Located on or in an operator
79.63	...Mounted between shoe and a support member
79.64	....Between plural supporting shoes
80	.Rotary shoes
82.1	.One-way brakes
82.2	..Reversible
82.3	..With disabler
82.34	...Integral with engager
82.4	..With hold out
82.5	..Combined or plural diverse types
82.6	..Biased flexible band
82.7	..Pivoting or flexing detent (e.g., pawl)
82.74	...Axially moving
82.77	...On rotating member
82.8	..Dragged wedging member
82.84	...Rolling
82.9	..Axially moving
83	.Continuous
84	.Fixed brake
85	.Intermittent
371	PLASTIC DEFORMATION OR BREAKAGE OF RETARDER ELEMENT (E.G., IMPACT ABSORBER)
372	.And subsequent reverse deformation
373	.Element twisted
374	.Element extruded through or around tool
375	.Element severed by cutting tool
376	.Frangible element
377	.Crushable element
378	INERTIA OF DAMPING MASS DISSIPATES MOTION (E.G., VIBRATION DAMPER)
379	.Resiliently supported damping mass
380	..Supported by mechanical spring
266	INTERNAL-RESISTANCE MOTION RETARDER
267	.Using magnetic flux
268	.Using yieldable or fluent solid or semisolid
269	.Using diverse fluids
270	.Operating against ambient atmosphere
271	.Combined with surface-friction brake
272	.Combined with mechanism retarded by brake
273	..Restricting exhaust from engine
274	.With heat exchanger
275	.With valved regulator responsive to inertia of valve member
276	.With means compensating for change in temperature of viscosity
277	..Including thermostatic valve responsive to temperature
278	...Manually adjustable valve
279	.Resistance responsive to changing condition
280	..Relative speed of thrust member or fluid flow
281	..Relative direction of thrust member
282	...By valved orifice in thrust member
283	..Position of load-linked valve
284	..Position of thrust member relative to chamber
285	...With means for adjusting responsiveness
286	...Having orifice in chamber wall
287	....Plural, successively encountered orifices
288	...Having varying area of chamber passageway for thrust member
289	...Having varying area of metering rod extending through orifice in thrust member
290	.Including unidirectionally rotating load member
291	..With clutch between load and brake assemblage
292	..Cooperating with peripherally mating jointly rotating member
293	..Driving relatively moving element which causes flow of brake fluid
294	...With means for regulating movement of element
295	...Comprising rectilinearly reciprocating piston
296	..Driving radial vanes which cause toroidal flow of brake fluid
297	.Including thrust member and variable volume chamber
298	..Forming flexible wall enclosure for fluid
299	..With control means remote from chamber
300	..With means for locking parts together temporarily
301	..Causing air suction in chamber
302	..Rectilinear reciprocation of piston caused by arcuately oscillating load member
303	...Pistons reciprocating oppositely in nonaligned cylinders

INTERNAL-RESISTANCE MOTION RETARDER
.Including thrust member and variable volume chamber
..Rectilinear reciprocation of piston caused by arcuately oscillating load member
304 ...Load member located between dual pistons
305 ...Piston reciprocating along axis of oscillation
306 ..Arcuately oscillating thrust member
307 ...Resilient or radially urged vane
308 ...Causing fluid flow through hub of thrust
309 ....With manually adjusted valve in hub
310 ...With means for manually adjusting fluid flow
311 ..Thrust member reciprocating in enclosed chamber
312 ...Having piston rod extending through ends of chamber
313 ...Causing fluid flow between compartments of chamber
314 ....With reservoir for fluid
315 .....Annular reservoir
316 ....Through or around piston within chamber
317 .....Through orifice in piston
318 ......And passage external to chamber
319 ......With manually regulated valve for orifice
320 ......Tortuous path orifice
321.11 ..Including means connecting thrust member to load
322.11 ..Specific retarder component structure
322.12 ...Including protective shield for retarder
322.13 ...Including valve
322.14 ....Foot valve
322.15 ....Piston valve
322.16 ...Including seal or guide
322.17 ....Between piston rod and cylinder
322.18 ....Between piston and cylinder
322.19 ...Cylinder structure
322.21 ...Having means for filling or recharging
322.22 ...Thrust member structure
322.5 .Using viscosity of fluid medium
381 FRICTIONAL VIBRATION DAMPER
OPERATORS
105 .Multiple
106 R ..Vehicle
106 F ....Fluid and mechanical
106 A ....Inside wheel
106 P ....Plural systems
107 ...Railway
108 .Vehicle step
109 .Seat
110 .Automatic
..Vehicle
111 ...Trips
112 R ...Train
112 A .....Anti-sway control
113 ...Four-wheel
114 ...Hub
...Auxiliary mechanism on tongue
115 ....Rear wheel
116 .....Divided beam
117 ....Front wheel
118 .....Divided beam
...Movable tongue
119 ....Rising and falling
120 ....Rear wheel
121 .....Divided beam
122 ....Front wheel
123 .....Divided beam
...Railway
124 ....Train
125 .....Drawbar
126 ......Speed-responsive
127 ....Strain release
128 ...Sled
129 ...Rise and fall
130 ....Rotary
131 ...Turning
132 ...Horse pull
134 ..Differential movement
135 ..Momentum
136 ...Wedging shoe
137 ...Electric control
138 ....Vehicle
139 ...Gravity control
140 R ...Vehicle
140 A .....Servo brake
141 ....Fluid-pressure control
142 ....Draft control
143 ....Wheel and ground
144 ....Railway
145 .....Winding
146 ......Axle
147 .....Train
148 ......Push rod
149 ......Drawbar
150 ....Speed-responsive
151 R .Fluid pressure
151 A ...Safety devices
152 ..Road vehicle
344 ...Velocipede
345 ...With multiple master cylinders
346 ...With friction drag response
347 ...With hydraulic quick-slack-take-up pulsator
348 ...With power quick-slack-take-up
349 ...With front rear brake apportioner
350 ...With steering gear control
351 ...With hydraulic automatic slack adjuster
352 ...With bleeding or filling device
353 ...With hydraulic lock
354 ...With independent wheel control
355 ...With nonmanual fluid-power source
356 ....Vacuum power
357 .....And manual
358 ....Liquid power
359 .....And manual
360 ....And manual
361 ....Wheel brake operating assembly
362 ....With transversely movable internal brake
363 .....Motor between shoe ends
364 ......Dual opposed piston motor
365 ....Radially acting motor
366 ....Arcuate or annular motor
367 ....Axially acting
368 ....Axially acting motor
369 ....With axially movable brake member
370 .....Spot type
153 R ..Rail vehicle
153 D ....Diaphragm
153 A ....Rim grip type
154 ..Exhaust of propelling motor
155 .Fluid current
156 .Electric and mechanical
157 ..Electric motor on staff
158 .Electric
159 ..Dynamic
160 ...Additional current
161 ..Electromagnet
162 ...Rotary motor
163 ...Solenoid
164 ...Magnetic circuit
165 ....Rail-engaging
166 .Spring
167 ..Vehicle
168 ...Draft release
169 ....Wagon

	OPERATORS
	.Spring
170	..Fluid-pressure release
171	..Electric release
173	...Vehicle
174	.Weight
175	..Draft control
176	..Vehicle body
177	...Inclined
178	...Longitudinally movable
179	..Float
	.Speed-responsive
180	..Regulators
181 R	...Vehicle
181 A	.....Acceleration responsive
181 C	.....Comparative
181 T	.....Torque-responsive
182	...Fluid and electric control
184	...Transversely expanding
185	....Radial
186	...Transversely contracting
187	...Axially moving
188	...Strand-engaging
189	..Stops
	POSITION ADJUSTERS
190	.Vehicle body movement
191	..Radius rod
192	..Turning
193	...Railway
194	...Pivoted wheel
195	.Load
196 R	.Slack
196 A	...Fluid
196 C	...Combined
196 F	...Torsional spring
196 M	...Manual
196 P	...Friction
196 B	...Ratchet
196 BA	....Rotatable
196 D	...Frictional rotation
196 V	...Screw, shim or cam
197	..Railway car
198	...Automatic
199	....Friction clutch
200	....Ratchet bar
201	....Shims
202	....Screw
203	.....Fluid-operated
204 R	.Equalizers
204 A	...For strap brakes
205 R	.Supports
205 A	...Antirattler
206 R	..Brake element
206 A	....Anchor
207	...Beam
208	....Road vehicle
209	....Brackets
210	....Safety
211	....Locks
212	....Parallel motion
213	.....Multiple-point support
214	....Wear compensation
215	.....Brake shoes
216	.Release mechanism
217	.Brake-thrust distributors
	ELEMENTS
218 R	.Brake wheels
218 XL	...Disk type
218 A	...Dust guard
219.1	.Beams or beam assemblies
219.6	..With movable, reversible or adjustable heads
220.1	...Pivoted head
220.6	....Lockingly adjustable
221.1	.....Yieldably readjustable
222.1	..With fixed head or thrust block
222.6	...Integral head and beam
223.1	...Trussed beam
223.6	....Head or block held by tension element
224.1	.....Tension adjusted by terminal nut
225.6	..Trussed beam
226.1	...Integral tension and compression member
228.1	...Tubular compression member
228.6	...H, I, L, T, U, V, or X cross section compression member
229.1	...With strut-type fulcrum
229.6	....Reversible
231	..With fulcrum
232	...Reversible
233	...Spaced
233.3	..With guides and/or guards
233.7	..H, I, L, T, U, V, or X cross section beam
234	.Shoe fasteners
235	..Locomotive type
236	..Heads
237	..Combined wheel guards
238	..Multiple shoes
239	...Superposed
240	...Linear arrangement
241	....Frangible connection
242	..Interlocking heads and shoes
243	...Longitudinal key
244	...Longitudinal insertion
245	...Side insertion
246	...Clamps
247	..Shoe-back lugs
248	...Cast in
249	..Flexible shoes
250 R	.Shoes
250 A	...Transversely expandable
250 H	...One-piece
250 C	...Multiple web
250 D	...Web and flange connections
250 E	...Slotted shoes and vibration dampers
250 F	...Anchor and operator fittings
250 G	...Surfaces and fasteners
250 B	...Shoe construction
251 R	..Composite
251 A	....Materials
251 M	....Metallic surfaces
252	...Flanged
253	....Recessed
254	...Shells
255	...Cast metal matrix
256	....Nonmetallic inserts
257	....Faces
258	....Backs
259	...Flexible
260	..Chills
261	..Recessed
262	..Rotary
264 R	.Cooling and lubricating
264 A	...Air-cooled, axially engaging
264 AA	....Auto wheel type
264 B	...Lubrication
264 D	...Liquid cool
264 E	...Wet friction surface and internal resistance
264 F	...Operating fluid cooling
264 CC	...Contained coolant
264 G	...Insulators
264 P	...With pump
264 W	...External wheel covers
265	.Locks
382	MISCELLANEOUS

CLASS 190 TRUNKS AND HAND CARRIED LUGGAGE

DECEMBER 1990

1	CONVERTIBLE
2	.Bed
3	.Bureau
4	..Top and front opening
5	...Compartment top
6	..Front opening
7	...Compartment front
8	.Chair
9	.Shelved
10	..Desk flap
11	.Desk or table
12 R	..Camp kits
12 A	....Combined with or convertible to table or chair
13 R	.Wardrobe
13 B	...Curtains
13 C	...Followers
13 D	...Ironing boards
13 E	...Irons, pads, latches, etc.
13 F	...Shoe box
13 G	...Hats
13 H	...Tray type
14	..Extensible
15 R	...Telescopic
15 A	.....Convertible to enlarged open-top container
15.1	.Luggage carrier
16	SAMPLE CASES
17	.Link-supported tray
18 R	SUPPORTING DEVICES
18 A	..Wheeled
19	TRUNKS
20	.Circular end
21	.Extensible and sectional
22	..Telescopic
23	.Wall
24	.Frames and interior braces
25	.Reinforcing strips
26	.Protecting harness
27	.Harness
28	.Valances
29	.Tray movers and supporters
30	..Lid-operated, movement
31	..Pivoted tray
32	...Vertical pivot
33	..Sliding tray
34	..Link connections and props
35	.Trays
36	.Followers
37	.Corner shields and buffers
39	.Handles
40	.Materials
100	HAND LUGGAGE (SUITCASE, BRIEFCASE, ETC.)
101	.Theft resistant
102	.With means for securing an accessory
103	.Variable volume
104	..Telescoping sections
105	...Selectively adjustable
106	.With means to bias luggage mouth into open configuration
107	.Knockdown or collapsible
108	.Plural
109	.Compartmented
110	..Removable compartment or compartment-forming member
111	..Independently closable compartments
112	.With plural access openings
113	.Closure panel struck from luggage wall
114	.Coacting closure elements hinged to opposed side walls
115	.With handle
116	..Detachable
117	..Plural interengaging elements
118	..Closure locking means manipulated via handle
119	.With means to fasten the hand luggage in closed condition
120	..And means to prevent inadvertent or unauthorized opening
121	..Fastening means secured to mouth frame
122	.Including frame or frame members substantially surrounding luggage mouth
123	..Including means to facilitate attachment to the hand luggage
124	.Wall detail
125	..Multi-layer or ply
126	..Specified seam structure
127	..Reinforced
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	BRIEF CASE TYPE
901	.Flat opening
902	.With closure flap
903	ZIPPER

CLASS 191 ELECTRICITY, TRANSMISSION TO VEHICLES

1 R	MISCELLANEOUS
1 A	..Electroplating contact rolls
2	SYSTEMS OF DISTRIBUTION
3	.Convertible, multiple current source
4	..Internal and external
5	..Alternating direct
6	.Sectional
7	.Alternating-alternating
8	.Safety cut-out
9	DRAWBRIDGE AND TRANSFER TABLE
10	MAGNETIC INDUCTION
11	VEHICLE IN SERIES
12 R	FLEXIBLE EXTENSIONS
12 S	..Electric iron stands
12 C	..Chain protectors
12.2 R	.Reels
12.2 A	...Motor-operated
12.4	..With connector plug or receptacle
13	PLATE CONDUCTOR
14	SECTIONAL CONDUCTOR
15	.Normally live section
	.Normally dead section
16	..Magnetomechanical circuit controller
17	..Magnetic circuit controller
18	...Magnet on vehicle
19	....Traveling controller
20	..Mechanical circuit controller
21	...Deformable conductor
22 R	CONDUCTORS
22 C	..At or below ground surface
22 DM	..Rail, made of multiple materials
23 R	.Conduit
23 A	...Overhead conduit conductors
24	..Asymmetric
25	..Closing
26	..Draining
27	..Heated
28	..Special modifications
29 R	.Third rail
29 DM	...Conductor made from different materials
30	..Protected
31	...Closing
32	..Supports
33 R	.Trolley
33 PM	...Cables made of multiple material
34	..Nonunderrunning
35	..Guarded
36	..Special intersections
37	..Crossings
38	..Switches
39	..Section insulators
40	..Supports
41	...Catenary
42	...Combined ears and insulator
43	...Ears
44	....Splices
44.1	..Splicers
45 R	COLLECTORS
45 A	..Suspended conveyors
46	.Convertible
47	.Bar
48	.Conduit plow
49	.Third-rail shoe
50	.Trolley
51	..Common wire passing
52	..Detachable
53	..Nonunderrunning
54	..Indefinite path
55	...Bow
56	...Roller
57	..Multiple contact
58	...Tandem
59	..Heads
59.1	...Sliding contact
60	...Swivel
60.1	....Center bias
60.2	...Lateral swing
60.3	...Vertical swing
60.4	...Axial slide
60.5	...Pole couplings
61	...Wheel to head contactor
62	...Ice clearers or preventers
63	...Wheels
63.1	....Quick release
63.2	....Lateral slide
63.3	....Universal mount
63.4	....Slidable pins
63.5	....Pin fasteners
64	..Poles
65	...Frames
66	..Stands
67	...Fluid pressure erector
68	...Spring erector
69	....Torsion
70	....Tension or compression
71	..Rope protectors
72	..Guards and finders
73	...Constantly operative
74	....Fixed
75	....Spiral cam replacer
76	....Star wheel
77	...Normally operative
78	....Automatic
79	....Rope-retracted
80	.....Lateral swing
81	.....Longitudinal swing
82	...Normally inoperative
83	....Automatic
84	....Rope-actuated
85	.Trolley retrievers
86	..Erector release
87	...Fluid pressure erector
88	...Spring erector
89	....Toggle
90	..Fluid pressure-retracted
91	..Spring-retracted
92	...Rope-actuated
93	....Slack take-up
94	..Weight-retracted
95	.Nonretracting trolley stops

	INTERRELATED POWER DELIVERY CONTROLS (HAVING MOTOR AND CLUTCH CONTROLS)
0.02 R	.Electric motor control and clutch
0.02 C	...Calculating machine
0.03	.Automatic control -
0.032	..By speed and/or torque
0.033	...By speed only
0.034	...By torque only
0.04	.Motor, clutch and gearing controls operate other controls
0.042	.Motor, clutch and brake controls operate other controls
0.044	.Motor, gearing and brake controls operate clutch controls
0.046	.Clutch, gearing and brake controls operate motor controls
0.048	.Motor and clutch controls operate other controls
0.049	..Other control is brake control
0.052	.Motor and gearing controls operate clutch controls
0.055	.Motor and brake controls operate clutch controls
0.058	.Clutch and brake controls operate motor controls
0.062	.Clutch and gearing controls operate motor controls
0.07	.Motor control operates clutch control
0.072	..And brake control
0.073	..And gearing control
0.075	..With regulated clutch engagement
0.076	...Speed responsive
0.077	...Inertia responsive
0.08	.Gearing control operates clutch and motor controls
0.082	.Brake control operates clutch and motor controls
0.084	.Clutch control operates motor control
0.09	.Of motor, clutch, gearing and brake controls
0.092	.Of motor, clutch and gearing controls
0.094	.Of motor, clutch and brake controls
0.096	.Of motor and clutch control
0.098	..Multiple motor and/or multiple clutch
1.1	INTERRELATED MOTOR AND BRAKE CONTROL
1.2	.Sensed condition responsive control of motor or brake
1.21	..Brake
1.22	...And motor
1.23	...Speed or acceleration responsive
1.24	..Speed or acceleration responsive
1.25	.Plural diverse brake means
1.26	.Motor energy control having adjusting and holding device, with means on brake control to override holding device
1.27	..Holding device engaged by electric means
1.28	...Magnetic holding device
1.29	..Mechanical holding device engaged by mechanical means
1.3	...Device or means including a threaded shaft, rack or rathet
1.31	.Brake control having holding device, with means on motor control to override holding device
1.32	..Holding device responsive to motion, speed, or acceleration
1.33	...Holding device comprising brake valve operated by solenoid.
1.34	..Holding device engaged by electric means
1.35	...Holding device comprising brake valve operated by solenoid
1.36	.Brake engaged when motor energy deactivated brake disengaged when motor energy activated
1.37	..Electric motor
1.38	...Cam actuated brake
1.39	...Electrically actuated brake
1.4	..Internal combustion type motor
1.41	...Controls brake valve
1.42	....Vacuum actuated brake
1.43	.Brake condition change modifies motor condition
1.44	..Brake actuation interrupts ignition circuit of fluid motor
1.45	..Brake actuation decreases or eliminates fluid energy input to motor
1.46	...By closing throttle valve
1.47	...By preventing increasing operation of motor energy control
1.48	..Brake actuation opens switch to electric motor
1.49	...Mechanically actuated brake
1.5	....Lever disengages switch
1.51	.Decreasing fluid energy input to motor actuates brake
1.52	.Control means selectively operates motor energy input and brake
1.53	..Electric motor
1.54	...Fluid actuated brake
1.55	...Electrically actuated brake
1.56	..Foot operated control means
1.57	...Motor and brake control including interconnected elements
1.58	...Pivots and translates
1.59	....Pivots about intermediate fulcrum
1.6	...Pivots about two fulcrums
1.61	...Pivots about intermediate fulcrum
1.62	...Lever reciprocates on moveable supports at both ends
1.63	...Pivots for sequential operation
1.64	..Control means including fluid passage
3.21	VORTEX-FLOW DRIVE AND CLUTCH
3.22	.With means to effect torque reversal
3.23	.With brake
3.24	..Alternatively operative clutch and brake
3.25	.With additional drive or clutch
3.26	..Simultaneously operative clutches
3.27	..Alternatively operative clutches
3.28	.Including drive-lockup clutch
3.29	..Having fluid-pressure operator
3.3	...With auxiliary source of pressure
3.31	..Having speed-responsive operator
3.32	.Alternatively operative drive and clutch
3.33	.Fluid-pressure operator for engaging clutch
3.34	VORTEX-FLOW DRIVE AND BRAKE
3.51	TRANSMISSION CONTROL AND CLUTCH CONTTROL
3.52	.Planetary transmission and coaxial clutch
3.53	..Including separate, reversing pedal
3.54	.Common control
3.55	..Power operated clutch
3.56	...Electromagnetically operated
3.57	...Fluid-press operated
3.58	....Electrically triggered
3.59	....Vacuum operated
3.61	..Stepped ratio transmission
3.62	...With control lever
3.63	.Interrelated (e.g., with interlock)
4 R	TRANSMISSION CONTROL AND BRAKE
4 A	..Automobile type
4 B	..Internal resistance brake
4 C	..Forward and reverse gearing
5	.Back-pedaling brake
6 R	..Hub brake
6 A	....With change speed transmission
6 B	....Rotatable axle
7	.Automatic brake
8 R	..Responsive to drive release
8 A	....Cable

	TRANSMISSION CONTROL AND BRAKE
	.Automatic brake
	..Responsive to drive release
8 C	....Coil brake
9	.Electric control
10	.Belt shipper
11	.Belt tightener
12 R	CLUTCH AND BRAKE
12 A	..Internal resistance
12 B	..One-way engaging
12 BA	...Coil spring type
12 C	..Fluid operator
12 D	..Electric
13 R	.Vehicle type
13 A	...Clutch released brake holder
14	.Same member
15	.Automatic check and release
16	..Clutch and brake same member
17 R	.Peripheral brake
17 A	...Fluid operator
17 C	...Electric
17 D	...Coil
18 R	.Sliding operation
18 A	...Fluid operator
18 B	...Electric and magnetic
19	.Crank control
20	CLUTCH AND GEAR
21	.Reversing
21.5	FIELD RESPONSIVE FRICTIONAL MEDIA TYPE
22	LATCH OPERATED
23	.Corn-planter type
24	.Longitudinally moving transmission member
25	..Pin
26	.Transversely moving transmission member
27	..Ball or roller
28	..Positive
29	...Rotating key
30 R	CLUTCHES
30 W	..Warning, indicating, and signal devices
30 V	..Vibration dampers
31	.Automatic
32	..Manual control
33 R	...Definite-position release
33 C	.....Coil
34	...Shaft thrust
35	...Pilot mechanism
36	....Brake band
37	...Transversely moving
38	....Ball or roller
39	....Positive
40	...Electric
41 R	..One-way engaging
41 S	....Spring
41 A	....Sprags
42	...Free-engine type
43	...Reversible
43.1	....Pivoted pawls
43.2	....Slidable pawls
44	....Ball or roller
45	...Ball or roller
45.1	...Wedging pawl or block
45.2	...Two-point gripper
46	...Positive
47	...Manual control
48.1	.Plural clutch-assemblage
48.2	..Including electrically-actuated clutch-assemblage
48.3	..Diverse clutch-assemblages
48.4	...Including three or more assemblages
48.5	...Including one clutch-assemblage having interdigitated clutch-elements
48.6	....And another clutch-assemblage having unirotationally-engaging clutch-elements
48.7	..With means to actuate or de-actuate clutch-assemblages sequentially
48.8	..Associated with three or more shafts
48.9	...Alternatively-operative assemblages
48.91	....Having common clutch-element support
48.92	..Including unirotationally-engaging clutch-elements
49	..Parallel vehicle wheels
50	...Free wheel
51	..Reversing
52	.Progressive engagement
53 R	..Frictional and positive
53 A	....Expansible or contractible blocker or blocker actuator means
53 B	....No blocker means present
53 C	....Spring-like elements as friction means
53 D	....Magnetic or electro-magnetic operated friction means
53 E	....Radially extending blocker lugs or arm extending axially between friction members (no end blocker)
53 F	....Annular friction member as an end blocker means, i.e., blocker lugs, pins, or teeth
53 G	....Shifter held from disengagement (lock); also devices where detent acts as blocker, plus friction means
53 H	....Ratchet and pawl or similar synchronizing means
54	.Torque responsive
55	..Yielding
56 R	..Release on overload
56 C	....Coil clutch
56 F	....Fluid clutches and operators
56 L	....Clutch element on pivoted lever
57	.Fluent material and mechanical
58 R	.Fluent material
58 A	...Vanes on shearing members
58 B	...Smooth surfaces on shearing members
58 C	...Axially movable shear type fluid clutches
59	..Axially movable piston
60	..Transversely movable piston
61	..Gear-pump type
62	.Plow-lifting type
63	.Free-engine type
64	.Velocipede free wheel
65	.Axially and transversely engaging
66	.Axially engaging
67 R	..Positive
67 A	....Pilot clutch cause synchronous engagement of positive clutch
67 P	....Pin
70	..Spreading
70.11	..Interposed, mating clutch-elements
70.12	...With means to cool or lubricate clutch parts
70.13	...With removable or replaceable or interchangeable clutch parts
70.14	...Including surface characteristics of clutch-element
70.15	....Axially-tapered mating surfaces
70.16	...With torque connection between clutch-element and its shaft
70.17	....Resilient torque connection (e.g., for damping vibration)
70.18	.....Including chordally-disposed connection
70.19	....Axially-slidable connection
70.2	.....Spline connection for multiple clutch-elements
70.21	...With means to move multiple clutch-elements axially and sequentially

	CLUTCHES
	.Axially engaging
	..Interposed, mating clutch-elements
70.22	...With means to move clutch-element axially and latch into engaged or disengaged position
70.23	...With cam or wedge contacting clutch-element or pressure plate for axial movement thereof
70.24	....By cam surface on bell-crank
70.25	...With adjustable means to move clutch-element axially (e.g., to compensate for wear)
70.26	....Including plural adjusting screws (e.g., to equalize pressure angularly)
70.27	...With spring means to move clutch-element axially
70.28	....To separate engaged clutch-elements
70.29	....And actuator lever pivoted on pressure plate
70.3	...With actuator lever pivoted on pressure plate or back plate to move clutch-element axially
	.Transversely engaged
71	..Positive
72	..Interior and exterior
73	...Opposing
74	..Interior
75	...Expanding
76	....Radial
77	....Split ring
78	.....Cam operated
79	..Exterior
80	...Strap
81 R	....Multiple folds
81 C	......Coil
82 R	.Operators
82 P	...Rack and pinion operator
82 T	...Temperature operator
83	..Multiple for same clutch
84 R	..Electric
84 P	....Photo-cell operator
84 A	....Electromagnetic axially engaging; coil concentric with clutch shaft and different shaft than armature
84 AA	.....With multiple clutches
84 AB	.....With multiple coils
84 B	....Coil and armature on same shafts axially engaging
84 C	....Fixed concentric coil, axially engaging
84 PM	....Permanent magnet
84 T	....Transversely engaging
84 E	....Electro-static
85 R	..Fluid pressure
85 A	....Axially engaging-rotating motor and clutch
85 AA	....Axially engaging clamping rotating motor and clutch
85 AB	....Axially engaging spreading rotating motor and clutch
85 AT	....Transversely engaging rotating motor and clutch
85 C	....Clutch and non-rotating motor
85 CA	....Clutch and non-rotating motor concentric with shaft
85 F	....Centrifugal fluid clutches
85 V	....Vacuum clutches and operators
86	...Double acting
87.1	...Multiple clutches
87.11	....Having independent operators
87.12	.....Responsive to rotational speed of clutch-element
87.13	.....With selective distributor for fluid pressure
87.14	....Alternatively operative clutches
87.15	.....Clutches co-axial with operators
87.16	......Common or interconnected operator(s)
87.17	.......Operator between clutches
87.18	.....With selective distributor for fluid pressure
87.19	......Having neutral position
88 R	...Flexible motor
88 A	.....Flexible fluid motor-axially engaged
88 B	.....Radially engaged
89 R	..Spring or weight
89 A	....Cam release
89 B	....Bellville disc springs and leaf springs
89 QT	....Quick throw spring
89 W	....Weight operated
90	...Electric release
91 R	...Fluid release
91 A	.....Motor concentric with clutch shaft
92	..One-direction apply and release
93 R	..Cam
93 A	....Axially thrusting cams rotatable about clutch axis
93 B	....Axially moving cam acting on pivoted lever
93 C	....Axially moving cam acting on transversely moving wedge or clutch member
94	..Screw
95	..Handwheel
96	..Central pin
97	...Screw operated
98	..Shipper saddles
99 R	..Lever systems
99 A	....Levers mounted on axially engaging clutch
99 B	....Levers mounted on transversely engaging clutch
99 S	....Stationary levers
100	..Follow-up
101	..Releasing
102	..Check of driven member
103 R	..Speed responsive
103 A	....Centrifugal operated, axially engaged
103 B	....Centrifugal operator transversely engaged
103 C	....Acceleration and inertia responsive
103 F	....Fluid operated
103 FA	....Fluid pressure engaged with centrifugal valve
104 R	...Fixed-speed release
104 B	.....Transversely engaged-interior
104 C	.....Transversely engaged-exterior
104 F	.....Fluid clutches and operators
105 R	...Fixed-speed engagement
105 A	.....Centrifugal (fluid or powder) non-pivoted weights (radially movable or slidable) i.e., mercury clutch
105 B	.....Axially engaged with non-pivoted weights-weights movable radially or slidable
105 BA	.....Transversely engaged with non-pivoted weights
105 BB	.....Transversely engaged positive with non-pivoted weights
105 C	.....Axially engaged with pivoted weights
105 CP	.....Weights pivoted on axis parallel to clutch axis-axially engaged
105 CS	.....Single pair clutching elements axially engaged with pivoted weights
105 CD	.....Transversely expanding clutch with pivoted weights

	CLUTCHES
	.Operators
	..Speed responsive
	...Fixed-speed engagement
105 CE	.....Transversely engaged-pivoted weights and clutching elements movable separately
105 CF	.....Transversely contracting
105 F	.....Fluid controls for centrifugal clutches
106 R	...Release
106 F	.....Devices to prevent fluid clutches from being operated by centrifugal forces acting on fluid
	ELEMENTS
106.1	.Clutch-element resiliently carried on hub
106.2	..By helical-coil springs
107 R	.Engaging surfaces
107 M	...Material
107 T	...Transversely engaging
107 C	...Clutch plate axially compressible
108	..Positive
109 R	.Thrust members, retarders, and stops
109 A	...Resilient operators and pressure plates
109 B	...Resilient backing plates
109 F	...Cushioning devices for fluid operators
109 D	...Dashpot
110 R	.Shafts, bearings, and adjusting devices
110 B	...Bearings
110 S	...Shafts for removable clutches or discs
111 R	.Wear compensators
111 A	...Automatic wear compensators
111 B	...Manually, axially adjustable, threaded members rotatable around clutch axis
111 T	...Manual wear compensators for transversely engaged clutches
112	.Casings
113 R	.Lubricating and cooling
113 A	...Air cooling and insulation
113 B	...Liquid cooled and/or lubricated clutch surfaces
114 R	.Locks
114 T	...Interlocking clutch teeth or splines
115	.Supports
116.5	STOP MECHANISM
125 R	.Material control
125 A	...Power stop-material control-electrical
125 B	...Mechanical
125 C	...Pneumatic
125 D	...Granular material
125 E	...Work start
125 F	...Length of material stop
126	..Sheet material
127	...Electrical
128	...Pneumatic
129 R	.Safety device
129 A	...Electrical
129 B	...Pneumatic
130	..Hand protector
131 R	...Two hand
131 H	.....Hand and foot
132	...Delayed action drive
133	..Automatic guard
134	...Punch-press type
135	...Cover
136	....Centrifugal-machine type
137	...Disabled transmission
138	.Limit stop
139	..Rotary-member control
140	...Speed responsive
141	...Screw
142 R	...Electrical
142 A	.....Radio tuner type
143	..Reciprocating-member control
144	.Drive release and brake
145	..Multiple clutch
146	..Change speed
147	..Speed responsive
148	..Positive stop
149	...Cushioned
150	.Overload release
	******************************
	DIGESTS
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DIG 1	Removable members
DIG 2	Universal joint

CLASS 193 CONVEYERS, CHUTES, SKIDS, GUIDES AND WAYS

*************************** DECEMBER 1990
DIGESTS
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DIG 1	Coin chute
DIG 2	Indicators, safety devices and signals

1	MISCELLANEOUS
2 R	CHUTES
2 A	..Chute connections
2 B	..Wall vibrators
2 C	..Variable capacity troughs
2 D	..Endless gravity
2 E	..Cup
3	.Loading or trimming
4	.Unloading
5	..Vehicle wall supported
6	..Extensible trough
7	.Fruit
8	.Mail
9	.Grain drill
10	.For rotary drum
11	.With sprayer
12	.Spiral
13	..Switch
14	.Sectional, multiple-point discharge
15	.Vertically adjustable, bodily
16	.Horizontal and vertical swing
17	.Vertical swing
18	..Counterweight
19	...Varied
20	...Valved
21	..Valved
	.Horizontal swing
22	..Swiveled sections
23	..Multiple-point discharge
24	.Counterweight
25 R	.Flexible wall
25 A	...Open-face chutes
25 E	...Individual elements
25 AC	...Ammunition chutes
25 S	...Resilient conduit or spring construction
25 FT	...Feed tracks
25 B	...Balloon or inflatable members
25 C	...Extensible, flexible chutes
27	.Zigzag
28	..Switch
	.Vertical pipe
29	..Multiple-point discharge
30	..Telescopic
31 R	.Switch
31 A	...Chute switches
32	.Retarder
33	.Wall
34	..Vertical
35 R	ROLLERWAYS
35 A	..Abutments and brakes for roller conveyers
35 SS	..Submerging and rising
35 C	..Centering and clamps (guides, generally)
35 TE	..Telescoping and extending
35 F	..Flexible
35 MD	..Multidirectional
35 J	..Joints
35 G	..Gates
35 B	..Biased rollers
35 S	..Spiral
36	.Switch
37	.Rollers
38	SKIDWAYS
39	.Switch
40	.Retarder
41	SKIDS
42	ROLLER JACKS
44	ORIENTER
45	.Manual or mechanical means moves article to upset
46	.Grooved or twisted chute
47	.Article upset about fixed point
48	.Article upset about movable point

200 WITH MEANS RESPONSIVE TO MALFUNCTION
201 .Antijackpotting device
202 WITH ADDITIONAL, DISPARATE MEANS PREVENTING FRAUDULENT ACTUATION
203 .Means preventing use of tethered check
204 .Antijarring device
205 CONTROL MECHANISM ACTUATED BY CHECK, OTHER THAN COIN (E.G., SLUG, TOKEN, CARD), WHICH IS MUTILATED OR RETAINED
206 .By pliant currency (e.g., dollar bill)
207 ..Including light sensitive testing device
208 .Having means to mutilate check
209 ..And means to test physical characteristic of check
210 .Having means to read magnetically encoded check
211 .Having electric circuit with switch operated by check
212 .Having means to test physical characteristic of check
213 ..Tests electrical or magnetic property
215 INCLUDING VALUE ACCUMULATOR FOR PLURAL CHECKS
216 .Having solid state circuitry
217 ..Programmable
218 ..Including binary counter
219 .And electric circuit with switch operated by check
220 ..Accumulator includes electric circuit having stepper switch
221 ...Single check operate switch
222 ...Plural stepper switches
223 ..Accumulator having ratchet wheel
224 .Having electric circuit completed by check itself
225 .Mechanical accumulator
226 ..Having ratchet wheel
227 ...And indexing means differently responsive to various check values
228 ..And means to impart thrust to check to operate accumulator
229 CONTROL MECHANISM RESPONSIVE TO PLURALITY OF CHECKS
230 .Including electric circuit with switch operated by check
231 ..Single switch
232 .Including part locked by detent and released by check
233 ..Stationary detent
234 ..And means to impart thrust to check to unlock part
235 ...Pivoted detent
236 ....And pivoted released part
237 .Check prevents locking of part by detent
238 ..Including reciprocating check mover
239 INCLUDING ELECTRIC CIRCUIT WITH SWITCH OPERATED BY CHECK
240 .And holding circuit responsive to operation of switch
241 ..Controlled by timer
242 ...Weight of check operates switch
243 .And means to impart thrust to check to operate switch
244 .Weight of check operates switch
245 ..And means holds switch in operative position
246 ...Switch held by weight of check
247 INCLUDING PART LOCKED BY DETENT AND RELEASED BY CHECK
248 .Stationary detent
249 .And means to impart thrust to check to unlock part
250 ..Noncontacting, relatively movable parts connected by check
251 ...Connected parts pivot
252 ...Connected parts reciprocate
253 ..Pivoted detent
254 ...And pivoted released part
255 ....Unidirectionally pivoted
256 ....Spring biased
257 ...Released part biased by spring
258 ..Pivoted released part
259 ..Reciprocating released part
260 .Weight of check unlocks part
261 ..Pivoted released part
262 ...Unidirectionally pivoted
263 ....Noncontacting, relatively movable parts connected by check
264 ....Having means to hold check in contact with detent
265 .....And ejector to remove check
266 .....Check passageway has movable portion
267 ....Having motor for driving released part
268 .....Spring motor
269 ......And regulating escapement mechanism
270 ......And regulating ratchet mechanism
271 ......Spring biased detent
272 .....And regulating ratchet mechanism
273 .....Weight motor
274 ......Having regulating escapement mechanism
275 ......Spring biased detent
276 ....Having regulating ratchet mechanism
277 ...Having means to hold check in contact with detent
278 ...Having motor for driving released part
279 ....Spring motor
280 ....Weight motor
281 .....Weight of check
282 ..Having means to hold check in contact with detent
283 ...One piece detent
284 ....Biased by spring
285 ..Released part biased by spring
286 ...To lock position
287 ..Released part biased by weight
288 ..Pivoted detent
289 ...Biased by spring
290 CHECK PREVENTS LOCKING OF PART BY DETENT
291 .Including check mover
292 ..Pivoted
293 INCLUDING NONCONTACTING, RELATIVELY MOVABLE PARTS CONNECTED BY CHECK
294 .And means to impart thrust to check to move part
295 ..Having pivoted part
296 ...Coaxial pivoted parts
297 ....Spring biased part
298 ...And linearly reciprocating part
299 ....Both parts spring biased
300 ..Parts spring biased
301 .Weight of check moves part
302 INCLUDING MEANS TO TEST VALIDITY OF CHECK
303 .By testing material composition
304 ..Having electric circuit completed by check
305 ...Circuit includes thermocouple
306 ...Circuit includes three or more contacts
307 ...Circuit includes movable contact
308 ....Pivotable
309 .....Cam actuated
310 ...And means to impart thrust to check
311 ....Unidirectionally pivoted
312 ...And means to stop check at contact
313 ....Pivotable
314 .....Solenoid actuated
315 ...Circuit includes spring contact

	INCLUDING MEANS TO TEST VALIDITY OF CHECK
	.By testing material composition
	..Having electric circuit completed by check
316	...Circuit includes elongated contact (e.g., long slide)
317	..Having electric circuit influenced by check
318	...Passing between transmitting and receiving coils
319	...Entering coil
320	..Having magnetic field acting on check
321	...And scavenger mechanism
322	....Movable megnet
323	....Movable portion within check passageway
324	...And magnetically actuated deflector or stop
325	...Speed or path of check altered
326	....After impact with rigid body (i.e., bounce test)
327	..Check impacts against rigid body (i.e., bounce test)
328	.Having means to test surface configuration
329	..Raised annular rim
330	..Both faces of check
331	..Serrated edge
332	..Apertured check
333	...And means to impart thrust to check
334	.Having means to test size
335	..Thickness
336	..By cradle sensor
337	..By pivoted lever sensor
338	..By fixed guage
339	.Having means to test weight
340	..By adjustable counterbalance
341	..By spring counterbalance
342	INCLUDING MEANS TO IMPART THRUST TO CHECK
343	.Introducing device
344	INCLUDING SPECIFIC CHECK PASSAGEWAY (E.G., CHUTE DETAIL)
345	.And scavenger mechanism
346	.And movable check diverter
347	.Having means to divert spurious matter
346	..Liquid diverter
349	..Wire or filament diverter
350	WITH SPECIFIC CABINET STRUCTURE
351	.Slot closure
352	.Check exhibitor
214	CHECK PER SE
353	MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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900	PARKING METER WITH BARRIER
901	CHECK-OPERATED TOLL BOOTH
902	CHECK-OPERATED DEVICE FOR CONTROLLING PARKING LOT
903	CHECK-CONTROLLED TURNSTILE
904	CHECK-OPERATED RELEASOR FOR AUTOMOBILE SERVICE EQUIPMENT
905	SHOPPING CART RETURN

CLASS 196 MINERAL OILS: APPARATUS

14.5	DEWAXING
14.52	SOLVENT EXTRACTION
46	REFINING
46.1	.With filtration
98	COMBINED VAPORIZING AND CONDENSING
99	.Condensate returned to vaporizer
100	..Columns
102	.Condenser or collector in vaporizer
103	.Heads
104	VAPORIZING
105	.Systems
106	..Series stills
107	.Tube and drum
108	..Cyclic circulation
109	...Drum above tube
110	.Tubular
111	.With partitions
112	.Rotary
114	.Vacuum
115	.Special shapes
116	.Furnaces and flues
117	..Internal flues
118	.Liquid baths
119	.Jackets
120	.Special means for heating
121	..Electric
122	.Carbon removers
123	.Circulators or agitators
124	..Mechanical
125	..Baffles
126	..Fluid injectors
127	.Fluid injectors
128	.Films or sprays
129	.Depending legs or spur tubes
130	..Bottoms
131	..Unheated
132	.Automatic control
133	.Special features of construction
134	.Heat recovery from vapor or residuum
135	.Feeders
136	.Vapor outlets
137	.Attachments
138	CONDENSING
139	.Dephlegmators or fractionating columns
140	.Contact with cooling fluid
141	.Automatically controlled temperature
155	MISCELLANEOUS

300	CONVEYING APPARATUS ENTIRELY SUPPORTED BY MOBILE GROUND ENGAGING MEANS
301	.Condition responsive control means for vehicle or conveyer
302	.Retractable ground wheel
303	.Including three relatively movable interconnected wheel or track equipped vehicles
304	.Dirigible vehicle
305	..Pulling winch on vehicle
306	.Ground wheel lockable in transverse or longitudinal position on vehicle
307.1	.Bucket conveyor
308.1	.Shovel or tine pushable under load
309	.Support slidable on ground
310	.Conveyer driven by motion of ground-engaging element
311	.Including gravity conveyer section or bin with driven conveyer
312	.Conveyer shiftably mounted on vehicle
313	..Contractible or foldable conveyer section
314	..Separate conveyers serially arranged on single vehicle
315	..Power means for shifting conveyer
316.1	...Fluid-actuated ram
317	..Horizontally swingable conveyer
318	..Vertically swingable conveyer
319	...Means for maintaining conveyer-drive motor support in level position
320	...Winch-operated shifting mechanism
321	CONVEYER OR ACCESSORY THEREFOR SPECIALIZED TO CONVEY PEOPLE
322	.With means to control the operation of the section
323	..By means responsive to an unsafe operating characteristic of the system
324	.With means to facilitate passenger entry or exit
325	..By support having interdigitating members (e.g., comb plate, etc.)
326	.By stairway having steps forming an endless member
327	..Having hinged plates forming steps
328	..Trained about vertical axis or axes
329	..With means allowing tensioning of the endless member
330	..With drive means
331	...With means synchronizing the operation of the steps and a handrail
332	..With paired track step levelers
333	..With specified step structure
334	.By support means having a zone of varying speed
335	.Moving hand-support structure
336	..With handrail tensioning means
337	..Specific handrail configuration
338	..Handrail guard
339.1	WITH MEANS TO FACILITATE WORKING, TREATING, OR INSPECTING CONVEYED LOAD AT A STATION
340	.Having signalling or load identifying means
341	.Condition responsive control of conveyer or station apparatus
343.1	.Load supporting conveyor portion is retarded or stopped with load at station without being disconnected from remainder of continuously moving conveyer
343.2	..Load supporting conveyor portion is movably secured to conveyor drive
345.1	.Means engaging conveyor or load on a conveyor to align load for working
345.2	..Means engages conveyor to fix conveyor position relative to station
345.3	...Means engages a conveyor portion (i.e., pallet) which is separable from the conveyor drive to fix the position of said conveyor portion
346	.Static means for supporting load or workman adjacent conveyer for operation on load
346.1	.Means to convey a palleted load back and forth between an initial location and the work station
346.2	.Means to transfer a load back and forth between the mainline conveyor and the work station
346.3	.Conveyor(s) lowers the load to at least one of a plurality of fixed work stations
347.1	CONVEYOR SYSTEM HAVING AUXILIARY SECTION FOR STORING ITEMS MOVING BETWEEN SOURCE AND DESINATION
347.2	.Auxiliary section has the same entrance and exit
347.3	..Auxiliary section has a reversibly driven conveyor for bidirectional article movement
347.4	.Plural laterally spaced, same direction auxiliary paths
348	CONVEYER ARRANGEMENT FOR SELECTING AMONG PLURAL SOURCES OR DESTINATIONS
357	.Condition responsive control means to prevent collision on merging conveyors
358	.Condition responsive control means including sensing condition of source or destination
349	.With selection responsive to means containing or introducing changeable operating instructions
349.1	..By synchronously moving signal carrier distinct from conveyer
349.2	...Moving at different velocity than conveyer
349.3	....Rotary signal carrier
349.4	.....Magnetic means on rotary carrier stores code
349.5	..Using central memory to store code until article is discharged
349.6	...Memory stores plural sources or destinations
349.7	....Inventory also in memory
349.8	....Material detector indexes code
349.9	.....Plural, longitudinally spaced, material detectors index code
349.95	....Conveyer detector indexes code
350	..By magnetic means
351	..By selectively positioned abutment means
352	...Having plural abutments arranged in a specific pattern
353	...Having support means slidably mounting abutment means
354	...Having an abutment support containing a plurality of abutment receiving means
355	..By repositionable contact or switch actuator
359	.With gravity-conveying means
360	..By movably mounted, load-supporting, gravity section
361	...By repositionable idler roll or rollway
362	.By directing the load to or from a conveying section from or to selected sources or destinations
363	..By proportioning the feed from multiple sources
364	..By moving a load directing means along the length of the section

CONVEYER ARRANGEMENT FOR SELECTING AMONG PLURAL SOURCES OR DESTINATIONS
.By directing the load to or from a conveying section from or to selected sources or destinations
365 ..By discharging from a section including independently movable load-supporting portions
366 ..By selecting one of a plurality of supply or discharge paths
367 ...By material-diverting means placed across the load path
367.1 ....Material diverted by plural, successive gates
367.2 ....Plural, manually manipulated gate actuators
368 ...By a selectively movable stop means
369 ...By means connecting the system with a normally spaced path
370 ..By loading or unloading section at selected one of a plurality of preestablished locations along the length thereof
371 ...By reversibly driving the section
372 ..By shifting the load from the section
373 CONVEYER FOR CHANGING ATTITUDE OF ITEM RELATIVE TO CONVEYED DIRECTION
374 .By optionally facing successive items according to a predetermined recurring cycle
375 .By actuating item-holder relative to holder-carrying conveyer
376 ..With holder-actuating means responsive to item-sensing means
377 ..Holder carried by orbiting conveyer
378 ...Holder or conveyer moves intermittently (e.g., for "indexing" load)
379 .By gripping item and turning item about fixed axis
380 .With pressurized fluid causing change in attitude
381 .With magnetism causing change in attitude
382 .By conveying randomly faced items and turning items to uniform facing
383 ..Including significantly shaped portion of conveyer cooperating with significantly shaped item to face item
384 ...Including orbiting progression of item-receiving pockets and means moving item within pocket
385 ....By roller/finder to move item and/or fit surface indentation on item
386 .....Roller/finder rotating about plural axes
387 ....Pockets comprise grooved, transversely disposed rollers
388 ...Including protruding portion of conveyer entering end of slotted or hollow item
389 ...For shaped item suspended in or by shaped passageway
390 ...For shaped item fitting outline of shaped passageway
391 ...Via vibrating bowl having shaped passageway
392 ...Via rotating means having shaped passageway or exit
393 ...Including orbiting progression of item-fitting elements passing through supply of scrambled items
394 ..By conveying an item that has a position characteristic and rotating the item until it is positioned
395 ..With control means actuated in response to sensing of improperly faced item
396 ..Including separating item from scrambled supply hopper
397 ...By orbiting progression of item-receiving pockets passing through supply
398 ..By distinguishing between alternatively faced items and conveying uniformly faced items
399 ...By turning only improperly faced items to uniform facing
400 ...By partially turning all items to uniform facing and direction
401 .With control means for attitude-changer responsive to sensing of item
402 .For inverting successive items
403 ..By means driven for inverting conveyed items
404 ...Orbiting conveyer-inverter means
405 ....Twisted-belt conveyer means
406 .For changing both the elevation and the posture of successive items
407 ..By plural, sequentially acting conveyers
408 ..By an orbitally moving conveyer
409 ..By an oscillating or reciprocating conveyer
410 .By plural distinct occurrences of turning each successive item
411 .By conveyer and means driven for turning successive conveyed items
412 ..By means between successive conveyer sections or conveyer elements
413 ...By means which interdigitate with conveyer sections or elements
414 ....By turntable which lifts, turns and lowers item(s)
415 ..By plural, unequal-speed members simultaneously contacting and conveying items
416 .By member adjacent conveyer for contacting successive conveyed items
417 ..Longitudinally twisted item-bounding passageway
418 CONVEYER SYSTEM FOR ESTABLISHING AND MOVING A GROUP OF ITEMS
418.1 .Having items discharged from plural distinct outlets into group
418.2 ..With outlets longitudinally spaced along path of progressively formed group
418.3 ...Superposes items within group
418.4 ..With vertically aligned outlets discharging in the same direction and superposing items
418.5 .Having plural successive groups discharged by single conveyer into larger group
418.6 .Having conveyer drop grouped items simultaneously onto another conveyer
418.7 .Subdivides continuous item stream into longitudinally spaced groups
418.8 ..By offsetting first or last article
418.9 ..And imbricates items within group
419.1 ..By item engaging stop means
419.2 ..By different speed conveyers
419.3 ...With spaced dividers on conveyer limiting group size
426 .By shifting group of items simultaneously from stream conveyer to form a group
427 ..And distributing items of group into plural streams
428 ..By air blast or suction
429 ..By reciprocating shifter
430 ...Having oblique or orbital movement

	CONVEYER SYSTEM FOR ESTABLISHING AND MOVING A GROUP OF ITEMS
431	.By depositing items successively from one conveyer onto group conveyer
432	.By shifting group from row conveyer onto row conveyer
433	.By shifting group from row conveyer onto stream conveyer
434	CONVEYER SYSTEM FOR ARRANGING OR REARRANGING STREAM(S) OF ITEMS
435	.By distributing items onto vertically tiered conveyer/receiver
436	.By distributing items from one stream into plural streams
437	..With control means responsive to sensing means
438	..By air blast or suction diverter
439	..By magnetic diverter
440	..By orbiting progression of item engaging elements
441	...On rotating carrier (e.g., star wheel, etc.)
442	..By interposing a guide into path of stream
443	.By queueing items from quantity source of items into stream(s) of items
444	..With control means responsive to sensing means
445	..Forming plural streams
446	...By jiggling items into streams
447	...And merging plural streams into one stream
448	..Merging plural streams (i.e., source) into one stream
449	...By synchronized orbiting progression of item-engaging elements
450	....On rotating carrier (e.g., star wheel, etc.)
451	...By synchronized gate(s) in paths of plural streams
452	...By guide means in paths of streams
453	..Via throat for restricting flow of massed items
454	...With supplementary moving surfaces that form throat
455	....Including retro-moving surface
456	.By laterally or vertically moving successive items in longitudinally moving stream
457	..To change direction of longitudinally moving stream
458	..To respace plural streams laterally
459	.By longitudinally respacing successive items in stream
460	..With space-control means responsive to item-sensing means
461	..By successive conveyers having dissimilar speeds
462	...To crowd or imbricate items in stream
463.1	CONVEYOR SYSTEM FOR MOVING A SPECIFIC LOAD AS A SEPARATE UNIT
463.2	.System includes a linear conveyor or portion thereof which bodily shifts transversely to move a load in synchronization with a transverse, continously operating conveyor section
463.3	.System includes linear conveyor or portion thereof which shifts to lift or lower load before or after linearly conveying load relative to adjacent conveyor section
463.4	.System includes gate means
463.5	..Load obstructing gate and means for lifting load over the obstruction
463.6	..Plural successively operated gate means
464.1	.System includes control means responsive to sensing means
464.2	..Responsive to load presence or absence
464.3	...Responsive to condition of at least one conveyor
464.4	..Responsive to undesired condition of load
465.1	.System includes a load supported by a conveyor portion which is separable from the conveyor drive
465.2	..Wherein the conveyor portion moves in a closed path in the horizontal plane only
465.3	..Wherein the conveyor portion is supported and driven adjacent its opposite sides by horizontally spaced drives
465.4	..Wherein the conveyor portion supports the load below the drive
466.1	.System includes a T-shaped or headed load suspended between parallel conveyors directly
467.1	.System includes a rotating screw
468.01	.System includes an oscillating or reciprocating load engaging element
468.2	..Comprising load gripping elements
468.3	...Gripping elements movable relative to one another to space articles in the load
468.4	...Suction gripping elements
468.5	...Magnetic or electrostatic gripping elements
468.6	..Engaging element moves load vertically and horizontally
468.7	...Element pushes load over nonlinear support
468.8	..Engaging element moves load vertically only
468.9	..Engaging element moves load horizontally in a straight line
468.1	...Element pushes load over separate support and has nonlinear path of travel
468.11	...Element pushes load over separate support and has linear path of travel
469.1	.System includes a rotating or endless carrier with a load engaging element
470.1	..Comprising a load gripping element
471.1	...Suction gripping element
472.1	...Magnetic or electrostatic gripping element
473.1	..Nongripping elements are adjustable or replaceable for different sized loads
474.1	..With means to move load engaging elements relative to carrier
475.1	...Whereby the load engaging component moves relative to the carrier to maintain load in a desired position during travel along a curved path
476.1	...Element is shifted to discharge or receive a load
477.1	....Element is only shifted with the load during discharge
478.1	..Carrier rotates about a fixed axis
479.1	...Elements push the load over a separate support
480.1	....With a load retaining guard means
481.1	...With load retaining guard means
482.1	..Means mounted on the engaging element to forceably eject the load from the element
483.1	..Means moveable mounted inside the path of the element to eject the load
484.1	..Elements comprise a nongripping pair of members which self-open as they pass through a curved path

CONVEYOR SYSTEM FOR MOVING A SPECIFIC LOAD AS A SEPARATE UNIT
.System includes a rotating or endless carrier with a load engaging element
485.1 ..Nongripping elements support the load below the endless carrier
486.1 ...Elements are hooks
487.1 ..Nongripping elements are laterally projecting pins which engage the interior of a hollow load
493 CONVEYER HAVING IMPINGING FLUID TO FEED, SHIFT OR DISCHARGE LOAD; OR MEANS TO FACILITATE CLEANING OF CONVEYER; OR STERILIZING OR LUBRICATING MEANS
494 .Having cleaning means
495 ..By fluid applying means
496 ..By conveyer contacting brush
497 ..By conveyer contacting scraper
498 ...Having a moving scraper
499 ...With scraper biasing means
500 .Having lubricating means
501 ..For rollers forming belt troughing structure
502.1 WITH ALARM RINDICATOR
502.2 .Means for measuring dimensions (height, width, or length) of load on a conveyor
502.3 .Means for indicating position of unit load
502.4 .Means responsive to conveyor movement to indicate speed or to actuate alarm due to abnormal speed
506 CONVEYER HAVING MEANS SPECIALIZED FOR COLLECTING A LOAD FROM A STATIC SUPPORT (E.G., THE GROUND, ETC.)
507 .Having control means responsive to load condition or unsafe operating condition
508 .Having means to form a pile on a static support
509 .Having buckets specialized to gather load batches
510.1 .Power-driven feed means
511 ..Having vertically adjustable feeding means
512 ..Paired feeding means
513 ...Opposite hand screws
514 ...Opposed load engaging pushers
515 ....Orbiting progressions of pusher elements
516 .....Mounted on endless carriers
517 ..Reciprocating pusher feeding means
518 ..Rotating feeding means
519 .Having means mounting conveyer for pile surface attack
520 .Self-gathering pusher
521 .By vibratory trough entrance means
522 .Having passive material collecting means
523 CONVEYER SYSTEM HAVING A GRAVITY CONVEYER SECTION
524 .Condition responsive
525 .With means to affect flow
526 ..Moving flow control means coordinated with power-driven conveyer section
527 ...Successive power-driven conveyer sections
528 ..Power-driven conveyer section operatively engages adjustable gravity section
529 ..Conveying element of power-driven conveyer section manipulated to effect load discharge
530 ..Gate
531 ...Actuated by, or otherwise coordinated with, power-driven conveyer section
532 ...In generally vertical exit path of gravity discharge material holder
533 ..By agitating, stirring, vibrating, etc.
534 ..By retarding velocity or reducing volume
535 ..Adjustably mounted conveyer section
536 ...Section is terminal one of system
537 .With means to handle portion of load which becomes separated from main flow path
538 .Conveyer section(s) adjustable for nonoperative purpose (e.g., storage, transport, etc.)
539 .Including a load-supporting bridging element (e.g., horizontal surface) between conveyer sections
540 .Gravity discharge material holder is source of supply, discharging by gravity to power-driven section
541 ..With at least one more gravity section therebetween
542 ...And having plural, successive power-driven sections
543 ..With at least one more successive power-driven section
544 ...Of the apron belt type
545 ...Of the screw type
546 ..Followed by at least one gravity section
547 ..Apron belt type of discharge-receiving, power-driven section
548 ..Screw type of discharge-receiving, power-driven section
549 ..Bucket type of discharge-receiving, power-driven section
550.01 .Bin having a power-driven conveyor section for discharging or feeding discharge to a gravity or power-driven section
550.2 ..Having adjustable bin or discharge means
550.3 ..Excess material on power-driven discharge means returned to bin
550.4 ..Power-driven discharge means feeds to a subsequent gravity section
550.5 ..Power-driven discharge means feeds to a subsequent power-driven section
550.6 ...Of the screw type
550.7 ...Of the bucket type
550.8 ...Of the scraper type
550.9 ...Of the apron type
550.1 ..Screw type power-driven discharge means
550.11 ..Bucket type power-driven discharge means
550.12 ..Scraper type power-driven discharge means
550.13 ..Apron type power-driven discharge means
560 .Power-driven conveyer section feeding to gravity section (i.e., gravity discharge material holder, or gravity flow path) feeding in turn to another power-driven section
561 ..Gravity conveyor section fed by one run of power-driven section, and feeding in turn to another run of the same section
562 .Gravity conveyor section is gravity flow path feeding to power-driven section
563 ..Followed by gravity section (i.e., gravity discharge material holder, or gravity flow path)
564 ..Thrower type power-driven section
565 ..Plural gravity sections
566 ..Plural power-driven sections
567...Serially arranged

	CONVEYER SYSTEM HAVING A GRAVITY CONVEYER SECTION
568	.Plural power-driven conveyor sections feeding to gravity section (i.e., gravity discharge material holder, or gravity flow path)
569	.Power-driven conveyor section feeding to plural gravity sections (i.e., gravity discharge material holder, or gravity flow path)
570	CONVEYING SYSTEM HAVING PLURAL POWER-DRIVEN CONVEYING SECTIONS
571	.With condition responsive control of a section
572	..By means responsive to presence or condition of load
573	...By overload sensing
574	.Conveyer carried by load-engaging conveyer
575	.With means controlling the interrelated operation of plural sections
576	.With means operating successive sections in timed relation
577	.With means for altering the speed (e.g., accelerating, decelerating, stopping,reversing, etc.) of a section
578	.Having a cyclically swingable section
579	.With means operating successive sections at different speeds
580	.Recycling load in a closed path
581	.With means allowing a section to fold upon itself
582	.With supply chamber for system
583	.With means connecting sections for quick assembly of disassembly
584	..By means allowing relative movement of joined sections
585	.Including tripper
586	.With relatively adjustable sections
587	..By means mounting a section for lateral swinging movement
588	...With means to vary the effective length of the system (e.g., telescoping sections
589	...With means mounting a section to swing about a generally horizontal axis
590	...With yieldable side walls
591	...With a curved guide or support
592	..By means mounting a section to swing about a generally horizontal axis
593	...With flexible means and winding drum
594	..By means to vary the effective length of the system
595	...By nested trough sections
596	....With opposed gripper means
597	.Including power-driven means for laterally shifting a conveyer-engaged load
598	..By a revolving or pivotal member
599	.Including non-driven means for moving load relative to conveyer
600	.Including rest for transient load
601	.Forming plural conveying paths feeding to single conveying path or vice versa
602	.Forming a single conveying path
603	..Superposed sections forming an ascending or descending zigzag conveying path
604	..Load simultaneously engaged between and moved by coacting conveyers
605	...With load transfer between coacting conveyers
606	..Plural sections each formed of or including a closed flexible loop
607	...With elevating or lowering section
608	..Plural rotating sections
609	..Plural vibratory sections
610	..Diverse sections
611	...Having a rotating section
612	....With load engaging element carried by the rotating section
613	.....Element retractable to disengage from load
614	....And a reciprocating section
615	CONVERTIBLE
617	PROCESSES
618	CONVEYER SECTION
619	.Load propelled as the reactive means in a linear motor or moving magnetic field
620	.Load simultaneously engaged between and moved by a plurality of driven conveyer members
621	..Reciprocating member
622	..Oppositely moving members (e.g., doffing, etc.)
623	..Wherein the velocities of at least two of the members are not equal
624	..Rotary members
625	...Screw type
626.1	..Opposed endless belts
626.2	...Load is enclosed by belts
626.3	....Having means to adjust one belt relative to the opposed belt
626.4	.....By biasing means
626.5	...Having adjustable belt portion
626.6	....By biasing means
629	.Diverse
630	.Moving wave type
631	.Conveyer section or portion thereof cyclically rotates, shifts or oscillates for a extra-conveying function
632	.Conveyer section folds to facilitate transportation or storage of section
633	.Movement of load changed relative to conveyer movement on contact of load with passive means
634	..Load responsive means or timing means controls load engaging means
635	..Stripper (e.g., static scraper)
636	..Passive means causes load to move laterally of conveyer
637	...To discharge load from conveyer
638	.Thrower
639	..Condition responsive control
640	..With guide or deflector for material thrown
641	..Adjustable means to control trajectory distance or direction
642	..Rotary
643	.Endless belt strand or chain-like member to lift viscous fluid
644	.Conveyer for signatures
657	.Screw
658	..Including rotating load confining means (e.g., tumbler)
659	..Including a deformable element
660	..Including an axially adjustable helical surface formation
661	..Having axially varying capacity
662	..Plural helical surface formations
663	...Separate, parallel formations supporting same load
664	...Transversing less than 360 degrees
665	....And reversible
666	...Coupled end-to-end
667	....With intermediate drive
668	....Pivotably
669	...Of opposite hand
670	..With means for controlling flow or to assist conveying

CONVEYER SECTION
.Screw
671 ..With means to assist in discharging from or feeding to the housing of the helical surface information
672 ..Including bearing means
673 ...Bearing means directly engages periphery of the helical surface formation
674 ..Including drive means
675 ...Having reversible or variable speed
676 ..Helical surface formation structure
677 ..With means for securing helical surface formation to driving member
678.1 .Endless conveyor having means for suspending load
679 ..Magnetic means
680 ..Means engagable with hanger to change hanger position relative to drive means or to release load
681 ..Load directly suspended from means spanning between parallel drive means
682 ..Having lock connection between hanger and load engaging means
683 ..Articulated drive means provided with non-load supporting guide means
684 ..Having means interengaging articulated drive and drive means therefor
685 ..Elongated drive means and hanger interengaging means
686 ...Strand or cable drive means connected to hanger below hanger support means
687 ...Chain or pivotally connected members drive means connected to hanger below hanger support means
687.1 ..Separable conveyor portion
688.1 .Having means to enhance the friction or adherence between the conveyor and load at random locations on conveyor
689.1 ..Suction
690.1 ..Magnetic
690.2 ..Transversely extending enlongated ridge means formed on or attached by nonmechanical means to the conveyor
691 ..Electrostatic
692 ..Impaling
693 ...Having impaled load removal assisting means
697 ..Load-engaging belt having separate load-impelling, projecting member swingably mounted thereon
698 ..Load-engaging belt having load-impelling, projecting cross members (e.g., slat, etc.) joined thereto by mechanical fastening means
699 ...Belt formed of a continuous member of flexible sheet-type material (e.g., canvas, etc.)
699.1 ..By a plurality of laterally spaced, projecting members on the conveyor
700 .Single suspended loop
701 .Bucket
702 ..To convey liquid
703 ..Having means to facilitate loading or discharging load from bucket
704 ...Bucket has door means to release load
705 ...Having means to engage and move load from bucket
706 ...Having means to pivot bucket relative to endless drive means
707 ..Interconnected buckets form chain
708 ..Having means to close gap between buckets
709 ..Having means to adjust tension on endless bucket carrier
710 ..Slide and guide or wheel and track means to movably support bucket
711 ..Bucket with connection to endless band or strand-type carrier
712 ..Bucket with connection to endless chain or link-type carrier
713 ..Bucket structure
714 ...Composite
715 .Flexible pocket
716 .Flight means in conduit for lifting flowable solid material
717 .Pusher conveyer and separate load support surface
718 ..Condition responsive control
719 ..Having means to prevent damage to conveyer
720 ..Having means to recycle conveyed load
721 ..With antifriction or movable supporting surface
722 ..Rotating pusher
723 ...To move load in an arcuate path
724 ....Wherein path is helical
725 ..Endless-orbiting pusher or its load support
726 ...Coacting plural pushers in plural orbits
727 ...Pusher edge configured to load-support surface
728 ...Pusher connected to endless pusher-carrier
729 ....With carrier drive or guide means configured to pusher
730 ....Integral element forming pusher, connection and carried link
731 ....By detachable or adjustable connection
732 ....By pivot between pusher and carrier
733 ....By connection to single carrier
734 ...Pusher-surface configuration
735.1 ...Load support, casing, shield or auxiliary attachment
735.2 ....Modules connectable end to end with no relative movement
735.3 ....Door, casing, cover, or load supporting surface
735.4 .....Casing or load supporting floor with door
735.5 .....Removable cover overlying the conveyor
735.6 ....Modules connected end to end permitting relative angular positioning (e.g., due to uneven ground)
736 ..Reciprocating pusher
737 ...Plural laterally spaced alternately acting
738 ...Mounted on a carrier
739 ....Carrier has a swinging path of movement
740 ....Carrier has an orbital path of movement
741 ....Plural pushers
742 .....Oscillating about axis or axes
743 ......Axis or axes transverse to path of travel
744 ....Axis or axes below load support surface
745 ......Axis or axes perpendicular to load support surface
746 ....Pivotally mounted pusher
747 ...Pusher having linear path of movement
748 ....Moved by endless actuator
749 ...Pusher configuration
750 .Reciprocating conveying surface
751 ..With control means responsive to sensor means
752 ..Vibratory conveying member

CONVEYER SECTION
.Reciprocating conveying surface
..Vibratory conveying member
753 ...Selectively operated to reverse direction of movement
754 ...With flexible-belt extension
755 ...With retrograde-movement preventer
756 ...Having helical path
757 ....Confined within a bowl
758 ...Coupled parts from single vibratory trough
759 ...Conveying member having support or drive
760 ....With damper for conveying member or support
761 * ....With means to control load speed
762 .....By control of motor speed
763 ....Support for conveying member
764 .....Pivotal link support
765 .....Rolling contact support
766 .....With drive causing conveying member vibration
767 ......With damper for drive
768 ......By fluid means
769 ......By electromagnetic means
770 ......By unbalanced weights
771 ...Conveying member configuration
772 ..With retrograde movement preventer
773 ..Including set of alternately-acting load-support members
774.1 ...Longitudinally extending interdigitated sets (lifted by oscillating arms, etc.)
775 ....Each set movable
776 .....Sets move through a closed-loop path
774.2 ....Load support member lifted by inclined supporting fluid actuators
774.3 ....Load support members lifted by supporting, eccentric cam or rotating crank drive
774.4 ....Load support members lifted by inclined supporting surface
777 ...Including transverse pivoted sets of alternately acting load-support members
778 .Spiral
779 .Load-supporting rolls moved about endless path
780 .Live roll
781 ..Roll drive means engages, disengages or slips responsive to lod position or blockage
782 ..Having means to adjust position of roll relative to load (i.e., vertically, horizontally, angularly, etc.)
783 ..Having intermittent, periodic, timed or programmed drive for rolls
784 ..Arranged or having means to change load speed
785 ..Roll(s) center load on conveyer
786 ..Load moves axially of roll
787 ..Rolls causes load to travel curved path
788 ..With motor means for roll
789 ..Roll drive means
790 ...Belt drive
791 ...Gear drive
792 .Conveyer having a zone of varying speed
793 .Unit load conveying surface means moved about an endless or rotating path
794 ..With manual, position or condition responsive drive control
797 ..Unit load conveying means maintained in uniform orientation while transiting from one direction to another
798 ...By coacting with guide only while transiting from one direction to another
799 ...Plural endless means support and maintain conveying surface horizontally orientated while moving around associated but axially displaced sprockets
800 ...By constant engagement with guide means throughout conveying course of travel
801 ..Conveying surface elevates load and has cantilever-type connection with endless means
802 ..Conveying surface movable relative to path
803.01 ..Holder is removable or replaceable relative to drive
803.2 ...Holder supported and driven by horizontally spaced drive
795 ...Each conveying surface means abbutted and pushed by succeeding conveying surface means
803.3 ..Holder grips load
803.4 ...Relatively adjustable grippers space portion of load
803.5 ...Suction gripper
803.6 ...Magnetic or electrostatic gripper
803.7 ...Gripper portion biased to load engaging portion
803.8 ...Gripper portion made of resilient material which is self biased into engaging position
803.9 ...Cam means moves at least one portion of the gripper to a load engaging position
803.1 ...Gripping portions self-open as they pass through a curved path
803.11 ..Nongripping holder is adjustable for different sized loads
803.12 ..Holder for hollow load contacted interiorly
803.13 ..Holder formed of nongripping elements which self-open as they pass through a curved path
803.14 ..Holder means forms recess to receive or seat load
803.15 ..Holder means forms an aperature for receiving load
803.16 .Rotary conveyor without specific locations for supporting randomly placed articles or bulk material
804 .Endless conveyer
805 ..Magnetically guided, supported or driven
806 ..Revolvable means engaging carrier belt face automatically skews to correct belt training deviation
807 ...With power drive (e.g., pressure cylinder or electric motor, etc.) for skewing revolvable means
808 ...With revolvable means supporting belt in transversely troughed form
809 ..Vertically shiftable belt situated between auxiliary load supports
810 ..Condition responsive
811 ..Pressurized fluid or suction applied to carrier belt to modify its reaction with support
812 ..Having variable conveying length
813 ..Device for tensioning belt
814 ...With spring biasing means
815 ...With counterweight
816 ...With screw adjusting means

	CONVEYER SECTION
	.Endless conveyer
817	..Separate, parallel conveying reaches supporting same load
818	..Having upwardly facing trough configuration in transverse direction on conveying reach
819	...Edges movable together to enclose load
820	...Having preformed trough shape
821	....Formed of or including a continuous member of sheet-like material (e.g., canvas, etc.)
822	....Formed or including transverse plates tandemly disposed lengthwise of carrier belt
823	...Supported in trough form by separate, unattached means engaging carrier belt face
824	....Roller or roller assembly
825	.....Independently rotatable rollers canted relative to each other
826	......Means for selectively adjusting angle between rollers to vary carrier belt shape
827	......Pivotally linked rollers form chain supported only at its ends
828	......Roller-supporting transverse frame connected to side-frame stand
829	......Individually cantilevered roller
830	......Transverse frame carrying at least three transversely spaced roller supports
831	..Upper and lower runs of same belt travel vertically aligned, laterally bending paths
832	..Carrier belt drive means
832.1	...Indexed or intermittent drive
832.2	...Brake means to slow, stop or hold carrier belt
832.3	....Brake means directly engages carrier belt
833	...Carrier belt driven by contact with separate drive belt, or connected thereto by quick-release clamp
834	...Wheel with radial teeth-engaging carrier belt or means connected therewith
835	...Roller, wheel, or drum-engaging belt
836.1	..Having load retainer or guide separate from carrier belt
836.2	...Load retainer biases load transversely against carrier belt
836.3	...Laterally adjustable or yieldable guides contact load
836.4	...Replaceable modular guides for changing the conveying path cross-section
837	..Support, guide, or hold-down means for carrier belt
838	...Track which supports rollers attached to belt
839	...Means twists carrier belt or guides it between angularly oriented horizontal reaches
840	...Guide exerting lateral force on nonload-supporting belt surface
841	...Means slidably supporting belt
842	...Rotatable support or hold-down engaging non-load-carrying face of belt
843	....Resilient
844.1	..Carrier belt structure
844.2	...Connection means joins ends of sheet-like belt
845	...Carrier belt supported or guided by rotatable means attached thereto
846	...Formed of or including a continuous member of sheet-like material (e.g., canvas, etc.)
847	....Including separate reinforcing elements or plural sheet-formed plies
848	...Formed of or including wire mesh, or rods hooked together at belt edges
849	....Link belt attached to carrier belt
850	...Formed of or including pivotally interconnected rigid links
851	....Separate pins interconnect links
852	.....Links pivot about mutually perpendicular axes
853	.....Links having interfitted ends
860.1	CONVEYOR FRAME OR CASING
860.2	.Modules connectable end-to-end with no relative movement
860.3	.Casing, cover, shield or load supporting surface
860.4	..Casing with door
860.5	..Removable cover overlying the conveyor
861.1	.Adjustable conveyor frame or casing
861.2	..Conveyor frame or casing flexes or pivots intermediate its ends to move one end relative to the other
861.3	...Single horizontal pivot axis only
861.4	..Entire conveyor pivots about horizontal and vertical axes
861.5	..Entire conveyor pivots about horizontal axis
861.6	..Entire conveyor pivots about vertical axis
866	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
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950	CONVEYER TRANSVERSES WALL APERTURE
951	TURNING CIGARETTES END-FOR-END
952	HEATING OR COOLING
953	COIL SPRING UNTANGLING APPARATUS
954	OVERFLOW
955	AIR MANIFOLD
956	IMPACT PLATES
957	CONVEYER MATERIAL
958	LOAD UNITS COUNTER
959	WEIGHING

1 INTEGRAL LINE
2 .Nonreleasing matrix machines
3 ..Wire guide
4 ...Matrix-manipulating mechanisms
5 ..Rotary matrix carrier
6 ..Slidable matrix carrier
7 ...Matrix-manipulating mechanisms
8 .Multiple-character-bar machines
9 ..Assembling, casting and distributing
10 ..Assembling and distributing
11 .Assembling, casting and distributing
12 ..Nonscrew-feed distributer machines
13 .Assembling and casting
14 .Assembling and distributing
15 ..Multiple-magazine machines
16 ...Movable magazine
17 ...Collector mechanism
18 .Assembling
19 ..Multiple-magazine machines
20 ...Movable magazine
21 ...Collector mechanism
22 ..Space-band mechanisms
23 ..Escapement and collector mechanisms
24 ..Multiple-channel automatic-shift mechanisms
25 ..Power-operating mechanisms
26 ..Collector and transfer mechanisms
27 ..Collector mechanisms
28 ...Chute springs
29 ...Matrix receivers
30 ....Slide attachments
31 ....Shifting mechanisms
32 ..Transfer mechanisms
33 .Distributing
34 ..Special matrix
35 ..Nonscrew-feed distributer
36 ..Transfer mechanisms
37 ..Matrix carriers
38 ..Odd font-detecting mechanisms
39 ..To multiple magazines
40 ...Font-sorting
41 ....Matrix separator
42 ..Matrix separator
43 ..Automatic stops
44 .Magazines
45 ..Movable multiple magazine
46 ..Removing attachments
47 R .Casting mechanisms
47 A ...Type bar making
48 ..Multiple mold
49 ..Matrix holders
50 ..Vises
51 ..Justifying mechanisms
52 ..Automatic stops
53 ...Squirt preventers
54 ..Molds and cutters
55 ..Molds
56 ...Cooling devices
57 ...Modified liner
58 ...Liners
59 ..Cutters
60 ..Ejectors
61 ..Deliveries
62 ..Cleaning attachments
63 ..Matrices
64 ...Distributer features
65 ...Multiple character
66 ...Special design face
67 ..Space bands
68 ...Wedge
69 SEPARATE TYPE
70 .Surplus-type supply machines
71 .Individually movable matrix machines
72 ..Releasing matrix
73 .Rotary matrix-carrier machines
74 ..Pattern control
75 .Slidable matrix-carrier machines
76 ..Two-way movement
77 ...Pattern control
78 ...Keyboard control
79 ...Matrix cases
80 .Casting mechanisms
81 ..With finishing mechanisms
82 ...Mold-side-ejector mold
83 ...Two-part mold
84 ..Mold-side-ejector mold
85 ...Low quad
86 ...Moving mold
87 ..Two-part mold
88 ...Moving mold
89 ..Moving mold
90 ..Squirt preventers
91 ..Molds
92 ...Mold-side ejector
93 ....Low quad
94 ...Two-part
95 ..Deliveries
96 ..Matrices

CLASS 200 ELECTRICITY, CIRCUIT MAKERS AND BREAKERS

DECEMBER 1990

1 R	MULTIPLE CIRCUIT CONTROL
1 A	..Bank of leaf spring contacts
1 B	..Sequential operations
1 TK	..Telephone key, leaf spring
1 V	..Reversing
2	.Loop
3	.Combined thermal current
4	.Combined pivoted and reciprocating contact
5 R	.Multiple switch
5 A	...With independent operators
5 B	...Independent operators interlocked
5 C	...Independent operators sequence locked
5 D	...Multiple push-button subsequent release
5 E	...Multiple push-button only one operable at a time
5 EA	....Discrete and identical geometric shaped interlocking slider means
5 EB	....Laminated locking slider arrangement
5 F	...Starter switches for fluorescent lights
175	.Automatic multiple contact selective means
176	..With multidirectional selector means
177	...In different planes
178	..With motion in a single plane
179	...Rotary
180	....With clutch
6 R	.Pivoted contact
6 A	...Universally pivoted handle
6 B	...Cam actuated
6 BA	....Lever borne contacts
6 BB	....Leaf spring contacts
6 C	...Leaf spring contacts
7	..Combined types
8 R	..Radial contact pressure
8 A	....Axial bridging
9	...Plural switch
10	...Arc extinguishing and preventing
11 R	..Dial type
11 A	....With axial bridging
11 B	....Clamping contacts
11 C	.....With circuit
11 D	....Wafer
11 DA	.....Printed circuit
11 E	....Common bias
11 EA	.....With lift
11 G	....Leaf spring bias
11 H	....Laminated leaf spring
11 J	....Coil spring bias
11 K	....Diverse individual bias
11 TC	....Tap changers
11 TW	....Thumbwheel
12	...Electromagnetic release
13	....Plural switch
14	...Plural switch
15	..Knife blade
16 R	.Reciprocating contact
16 A	...Face or normal bridging contact
16 B	...Plunger type
16 C	...Spring-biased
16 D	...Flexible, self-biasing
16 E	...Plug type
16 F	...Knife blade, contact clip
17 R	.Operating means
17 A	...Retarded
17 B	...Step-by-step
18	..Plural switch
600	CAPACITIVE SWITCH
181	ELECTROSTRICTIVE OR ELECTROSTATIC
19 R	PERIODIC
19 A	..Contact breaker assembly
19 DC	..Distributor cap
19 DR	..Distributor rotor
19 EL	..Elevated
19 L	..Locks
19 M	..Magnet
19 TS	..Traffic signal
19 WG	..Wire guard
20	.Combined
21	..Rotary and cam
22	...Adjustable
23	.Multiple contact
24	..Rotary
25	...Adjustable
26	...Radial contact pressure
27 R	..Cam operated
27 A	....Automotive (e.g., distributor)
27 B	....Programming timer
27 BA	.....Sign display
27 BB	......Traffic control signs
28	.Rotary
29	..Adjustable
30 R	.Cam operated
30 A	...Automotive distributor contact breaker assembly
30 AA	....Contact breaker lever
31 R	..Adjustable
31 A	...Contact breaker assemblies
31 CA	....Centrifugal advance mechanism
31 DP	....Distributor plate
31 V	....Vacuum or suction controlled advance mechanism
33 R	RETARDED
33 A	..Mercury
33 B	..Cam operated
33 C	..Chain or flexible drive
33 D	..Longitudinally movable carriage
34	.Dashpot
35 R	.Clock train
35 H	...Hand operated
35 B	...Radio
35 EQ	...Seasonal change
35 A	...Automobile or radio
35 W	...Rewinding for clock
36	..Rotary
37 R	...Multiple contact
37 A	.....Cam operated
38 R	..Cam operated
38 A	....Dial manually set
38 F	....Resettable with automatic return
38 FA	.....Resettable interval timer for oven, range
38 FB	.....Resettable interval timer for radio or clock
38 B	....Sequential program actuated by cam disc
38 BA	.....Individually adjustable cam disc
38 C	....Drum or pattern surface actuated
38 CA	.....Adjustable surface
38 D	....Continuous cycle timer
38 DA	.....Twenty-four-hour cycle
38 DB	.....Sunday cutout
38 DC	.....Adjustable cycle for seasonal change
38 E	....Longitudinally movable
39 R	..Latch trip
39 A	....Range timer
40	...Motor release
41	...Weight release
42.01	PLURAL SWITCHES CONTROL SINGLE CIRCUIT
42.02	.Coded removable actuator
43.01	SWITCH ACTIVATION INHIBITOR (E.G., UNAUTHORIZED/INADVERTENT USE PREVENTION)
43.02	.Combined with connector coupling
43.03	.Engine starter protector
43.04	.Removable actuator
43.05	..Actuator is circuit completing element
43.06	..Plural switches actuated by a single coded element
43.07	..Reciprocating actuator activates switch
43.08	..By rotation of actuator

	SWITCH ACTIVATION INHIBITOR (E.G., UNAUTHORIZED/INADVERTENT USE PREVENTION)
43.09	.Combination automatically actuates switch
43.11	.Actuator locking device
43.12	..Combination lock controls actuator
43.13	..Reciprocating actuator (e.g., push button)
43.14	..Circuit breaker handle type (i.e., padlock)
43.15	...Including attachments to lock handle
43.16	.Actuator blocking device (e.g., latch)
43.17	..Hand grip type (e.g., power tool)
43.18	..Push button type
43.19	..Removable blocking element
43.21	...Mounted on actuator
43.22	.Locked cover prevents access to actuator
46	PATTERN-SHEET CONTROLLED
47	LIMIT SWITCH
48 R	HIGH-POTENTIAL TYPE
48 P	..Pivoted insulator
48 A	..Rotating and pivoted
48 KB	..Knife blade
48 V	..Vertical reach
48 SB	..Side break
48 CB	..Center break
49	POLE SWITCH
50 R	INTERLOCKING
50 A	..Interlock between cover and switch
50 AA	...Draw-out type
50 B	..Interlock between plug and switch
50 C	..Interlock between two or more switches
51 R	COMBINED WITH OR ACTUATED BY CONNECTOR COUPLING
51 LM	..Lazy man
51.01	.Candle-simulating assembly
51.02	.Multiple coupling
51.03	..Multiple circuit control, selective
51.04	...Plural switch
51.05	.Multiple circuit control, selective
51.06	..Three-or-more contact coupling
51.07	.Plural-position coupling
51.08	..Bayonet-coupling
51.09	.Coupling-actuated switch
51.1	..Switch closing on coupling separation
51.11	.Switch in parallel with coupling contacts
51.12	.Meeting contacts of coupling members forming switch contacts
51.13	.Bayonet-coupling
51.14	.Screw-coupling
51.15	..Pull-chain switch
51.16	..Push-button switch
51.17	..Rotatable-key switch
52 R	SPECIAL APPLICATION
52 A	..Tilting vehicle operated
56 R	.Indicating instrument
56 A	...Movable contact beater type
60	.Portable light
61	.Incubator
61.01	.Sound wave responsive
61.02	.Light responsive
61.03	.Gas or smoke responsive
61.04	.Liquid or moisture responsive
61.05	..Conducting liquid
61.06	..Humidity responsive
61.07	...Weight of absorbed water
61.08	.Frangible or destructible type
61.09	.Tramp metal actuated
61.1	.Game or amusement piece operated
61.11	..Ball (e.g., pin ball)
61.12	.Bicycle chain, sprocket or brake actuated
61.13	.Running length, web or strand actuated
61.14	..Actuator attached to or part of web or strand
61.15	..Spooled or reeled quantity
61.16	...Diameter sensing
61.17	..Spool, reel or idler rotation
61.18	..Absence or loss of tension (e.g., breakage or misalignment)
61.19	.Movable or removable interposed non-conductor
61.2	.Container contents level responsive
61.21	..Fluent solid bin or hopper
61.22	.Pneumatic tire inflation responsive
61.23	..Casing deformation feeler
61.24	..Ground engaging feeler
61.25	..Fluid pressure actuated
61.26	...Biased tube engaging member
61.27	.Turn indicator type switches
61.28	..Gear shift lever mounted
61.29	..Pedal controlled or mounted
61.3	..Reset by completed turn
61.31	...Set by turning
61.32	....With pre-turning setting means
61.33	....Steering arm, draglink or tie rod actuated
61.34	...Controller moves reset dog into operative position
61.35	...By movement of steering wheel or post relative to column
61.36	....Wheel or wheel attached member engages controller or rigid extension
61.37	....Through gearing
61.38	....Wheel carried switch unit
61.39	..Control by direction of rotation of shaft or spindle
61.4	.Diameter responsive (e.g., wear)
61.41	.Stationary feeler detects transient object
61.42	.Feeler moves into detecting contact with object
61.43	..Sensitive edge type closure
61.44	..Vehicle attached or carried
61.45 R	.Change of inclination or of rate of motion responsive (e.g., inertia and tilt switches)
61.45 M	...Magnetic holding means
61.46	..Rotary motion
61.47	..Conducting fluid type
61.48	..Oscillating controller
61.49	...Resilient support arm
61.5	...Restrained against return to normal
61.51	...Conducting
61.52	..Tilt responsive
61.53	..Linearly moving controller
61.54	.Steering wheel, shaft or column mounted
61.55	..Wheel hub spring biased type
61.56	...With radially extending operator (e.g., horn ring)
61.57	..On or in wheel rim
61.58 R	.Actuated concurrently with operation or use of art device
61.58 B	...Seat belt
61.59	..Article inserted type (e.g., pencil sharpener)
61.6	..Coupling of fluid conduit
61.61	..Drawer
61.62	..Closure, closure operator or accessory
61.63	...Letter slot or box
61.64	...Lock, bolt or keeper actuated
61.65	....Elevator bar lock type
61.66	....Improper key or mere presence of key in lock
61.67	....By movement of bolt
61.68	.....In keeper
61.69	...Plural closures or plural closure cycles
61.7	...Hinge member actuated
61.71	...Sliding closure
61.72	....Closure-dragged switch actuator
61.73	....Abutment type switch actuator

	SPECIAL APPLICATION
	.Actuated concurrently with operation or use of art device
	..Closure, closure operator or accessory
	...Sliding closure
61.74	....Spring-biased switch &actuator
61.75	.....With modified closure
61.76	...Spring-biased switch actuator
61.77	....Pull chain operator
61.78	....Spring contact
61.79	....Manually disabled
61.8	....Manually reset
61.81	....Mounted on closure frame or enclosure wall
61.82	.....In recess
61.83	...Gravity actuated
61.84	...Window accessory (e.g., shades and blinds)
61.85	..Manipulating, operating or carrying handle
61.86	...For fluid controlling valve
61.87	...Hand brake lever
61.88	...Gear shift lever
61.89	..Vehicle pedal
61.9	...Engine governed over-riding means
61.91	..Transmission controlled
61.93	.Anti-intrusion type
	SNAP
400	CONTACT MOVED BY SUDDEN RELEASE OF STORED ENERGY, (E.G., SPRING CHARGER)
401	TOGGLE MECHANISMS
402	SNAP
403	.Mercury snap
404	.Magnetic snap
405	.Double snap
406	..Including raised flexible snap element (e.g., dome)
407	..Blade element stressed to twisted configuration
408	..Spring Buckle
409	...Spring compressed between two points at a fixed distance from each other
410	..Rotating contact
411	...Contact movement blocked until spring is charged (e.g., latch)
412	....Push button actuated
413	....Pull cord actuated
414	....Including radial motion
415	...Contact restrained until spring is charged (e.g., detent)
416	...Cam actuated contact
417	....Push button actuated
418	....Pull cord actuated
419	...Ratchet controlled
420	....Pull cord actuated
421	....Pawl carries contact
422	.....Push button actuated
423	.....Pull cord actuated
424	..Contact movement is blocked until spring is charged
425	...Blocked by distinct latch
426	....Driving and driven element oscillate about a common axis
427	.....With reciprocating contact
428	....Including cam or wedge release
429	....Including reciprocating contact
430	..Contact movement is restrained until spring is charged (e.g., detent)
431	..Cam or wedge release
432	...Roller contact acts as cam
433	...Contact slides over pivot point
434	...Reciprocating contact
435	....Contact carrier snaps in opposite direction from actuator
436	...Including lost motion coupling to cam
437	...Spring biased element slides over pivoted element
438	...Spring biased pivoted element snapped when cam follower crossed pivot
439	...Wedge on reciprocating actuator
440	..With mechanism to insure positive separation of contacts (i.e., positive kick)
441	...Contact moved by separate lever
442	...Actuator moves contact near limit of travel
443	..Contact driven by impact element
444	...Having weight drive
445	..Snap spring system using multiple diverse springs
446	..Systems having lost motion connections between the actuator, an intermediate snapped element and the contact
447	..Double ended type (e.g., reciprocating bridging contacts)
448	...Contact pivots moved by actuator
449	..Reciprocating contacts
450	...Compression spring type
451	..End of blade pivotally carries element compressing blade
452	..Both ends of blade are freely floating
453	..Compression spring (e.g., push force)
454	...Both ends of spring move
455	....Having roller contact
456	....Both ends of spring are carried by blade (e.g., leaf spring)
457	....Axially compressed coil spring
458	....One end of spring is carried by actuator
459	...One end of spring is fixed
460	....Central portion of spring is moved to cause snap
461	....Blade is moved to cause snap
462	..Tension spring (e.g., pull force)
463	...Contact pivot point is moved to cause snap
464	....Pivot point is carried by actuator
465	...Both ends of spring move
466	....One end of spring is carried by actuator
467	...One end of spring is fixed
468	.Single snap
469	..Including lost motion coupling to cam
470	..Contact movement is blocked by latch until spring is charged
471	..Contact restrained before snap spring is charged (e.g., detent)
472	...Detent function performed by spring biased contact (e.g., knife blade)
79	SUSPENDED-WIRE CONTROLLED
80 R	CENTRIFUGAL
80 A	..Liquid contact
80 B	..Reed-type contact
81 R	FLUID PRESSURE
81 H	..Hand operated
81.4	.Plural switch
81.5	.With plural operators
81.6	.Operable to cause liquid contact flow
81.8	.Bourdon tube type
81.9 R	.Flow-responsive type
81.9 M	...Magnet
81.9 HG	...Mercury
82 R	.Piston
82 B	...High voltage
82 C	...Micro-switch
82 D	...Automobile
82 DA	....Starter
82 A	...Adjustable piston stroke
82 E	...Magnet
83 R	.Diaphragm
83 WM	...Washing machine
83 A	...Differential pressure
83 B	...Special diaphragm
83 C	...Aneroid bellows

CLASS 200 ELECTRICITY, CIRCUIT MAKERS AND BREAKERS

DECEMBER 1990

	FLUID PRESSURE
	.Diaphragm
83 D	...Differential and plural bellows
83 F	...Liquid contact
83 J	...Piston and diaphragm
83 L	...Magnetically operated
83 N	...Contacts on diaphragm
83 P	...Snap action
83 Q	...Combined switch and valve actuator
83 S	...Adjustment means
83 SA	....Differential and range adjustment
83 T	...Time delay
83 V	...Miniature
83 Y	...Multiple diaphragms or multi-ply diaphragms
83 W	...Overpressure protection means
83 Z	...Manual actuating means
84 R	FLOAT
84 A	..Battery float switch
84 B	..Float and pressure
84 C	..Magnet
85 R	WEIGHT
85 A	..Seat operated
86 R	.Treads
86 A	...Roadway
86.5	FOOT OPERATED
144 R	ARC PREVENTING AND EXTINGUISHING
144 A	..Rotating arc
144 B	..Vacuum switch
144 C	..Arc chute materials
144 AF	..Resistance inserting
145	.Multiple break
146 R	.Auxiliary shunt
146 A	...Tubular interrupter
146 AA	....Vacuum type, gas filled
147 R	.Magnetic blow-out
147 A	...Permanent magnet
147 B	...With combined insulation and metal plates
148 R	.Air current blow-out
148 A	...Puffer piston
148 B	...Sealed chamber
148 C	...Arc chutes
148 D	...Identical units back-to-back
148 E	...Recirculating systems
148 F	...Mechanical operator
148 G	...Arc extinguishing medium
148 H	...Low pressure cut-off valve means
148 J	...Magnetic synchronous
148 BV	...Blast valve with contacts
149 R	.Interposed non-conductor
149 A	...Gas-evolving chambers
149 B	...Interposed shield
150 R	..Liquid
150 A	....Insulating liquid
150 H	....Vents, mufflers, separators
150 J	....Tank
150 JA	.....Raising and lowering means
150 L	....Bridge bar contact
150 M	....Explosion pot
150 N	....Waterbreak expansion
150 B	....Oil poor breaker
150 C	....Rotary contact arm
150 D	....Pressure generating break
150 E	.....Plural series
150 F	....Horizontally disposed multiple break
150 G	....Puffer piston
151	..Solid
182	LIQUID CONTACT
183	.Combined
184	..With illumination means
185	..With electrical resistance
186	.Time delay
187	.Plural switches (in same housing)
188	..With common electrical connection (solid or liquid)
189	..Progressive contacts
190	.Liquid level responsive
191	.Having capillary tube means
192	..With electro-capillary action
193	.Having electrolytic conductive-liquid means
194	..With significant electrolyte
195	.Spray or jet by centrifugal force and/or by other pressure-producing means
196	..Periodic
197	...Oscillating jet
198	...Contact dips (moves relative to container) into the conductive liquid
199	.Contact dips (moves relative to container) into the conductive liquid
200	..Periodic
201	...Progressive contacts
202	...Cam actuated
203	.Cam actuated
204	..Gyratory movement
205	..Periodic
206	...Plural switches (switches not in same housing)
207	...Eccentric switch movement (wobble)
208	.Periodic
209	.Piston or plunger means
210	..Contact attached to or unitary with piston or plunger
211	.Pressure-deformable (flexible) means
212	..With progressive contacts
213	..With movably attached contact means
214	.With movable liquid-separating or shifting means
215	.With external support or external housing
216	..With hermetic or resin sealing
217	..Dual function support
218	...With actuator securing means
219	..With actuation means
220	.Tiltable or rotatable
221	..Container has plural major conductive-liquid containing chambers or spaces connected by a passageway
222	...Container forms at least one contact
223	..Having position sensitive ring, disk or conical contact
224	..Multi-throw or multi-position
225	...Single pole-double throw
226	..Container forms at least one contact
227	...Chamber contains insulative restrictive element or means to form at least one conductive-liquid-containing recess
228	..Chamber contains insulative restrictive element or means to form at least one conductive-liquid-containing recess
229	..Container includes at least one integral recess
230	..Float actuated
231	..With significant contact-sealing means
232	..With anti-splash means
233	.Particular conductive liquid
234	..Having contact wetting agent
235	.Particular contact structure or material
236	..Mounting or attaching means
500	HELICAL DRIVE MECHANISM
501	GEAR DRIVEN
502	SOLID CONTACT
503	.Rolamite-type
504	.Coaxial switch
505	.Hand held squeeze actuated switch
506	.Interposed nonconductor
507	.Screw used as moving contact
508	.Both contacts are moved

SOLID CONTACT
509 .Bimodal (e.g., single stroke make/break-no make on return)
510 ..Push button actuator
511 .Compressible elastomer
512 .Membrane type
513 ..Specific dome shape
514 ..Specitic nonconductive materials
515 ..Pressure equalizing means
516 ..Including auxiliary dome/disc type spring
517 ..Including additional actuator
518 .Plural actuators operate single switch
519 .Push and/or pull with 3 or more positions
520 .Push button operated
521 ..Including tactile feedback mechanism
522 ..Trigger actuator
523 ..Including alternate action mechanism (e.g., push-push)
524 ...With heart-shape cam
525 ...With w-shape rocking element
526 ...With rotating member (e.g., ball point pen type)
527 ....Including rotating contact
528 ....Rotating cam moves contact
529 ..Mechanism to transfer reciprocating to rotary or rocking
530 ..Contact carried by push button
531 ...Sliding contact
532 ...Leaf spring contact
533 ..Cam actuated contact
534 ..Abutting contact
535 ...Leaf spring contact
536 ..Sliding contact
537 .Reciprocating actuator
538 ..Push/pull rod
539 ...Specific detent structure
540 ...Contact carried by rod
541 ....Sliding contact
542 ...Cam actuated contact
543 ..Pull cord
544 ...Rotating contact
545 ...Cam actuated contact
546 ...Leaf spring contact
547 ..Slide switch (handle projects perpendicular to motion)
548 ...Housing and actuator form detent
549 ...Contact carried by slide
550 ....Sliding contact
551 ...Cam actuated contact
552 ..Two button switches - (noncoaxial parallel buttons)
553 .Rocking actuator (e.g., rocker, lever)
554 ..Knife blade contact
555 ...With catch
556 ..Housing and actuator form detent
557 ..Actuator biasing mechanism
558 ..Cam actuated contact
559 ...Leaf spring contact
560 ..Rotating contact
561 ..Reciprocating contact in straight-line motion
562 ..Contact carried by actuator
563 ...Sliding contact
564 .Rotating actuator (e.g., dial)
565 ..Housing and actuator form detent
566 ..Auxiliary motion required to actuate or release (e.g., push to rotate)
567 ..Rotation about a longitudinal axis of tool or appliance
568 ..Contact actuated by cam
569 ...Leaf spring contact operated by cam on actuator
570 ..Rotating contact
571 ...Sliding contact
572 ..Linear moving contact
573 CAM OPERATES CONTACT OR MICROSWITCH
574 .Peripheral cam
237 ELECTRIC SWITCH DETAILS
238 .Contact
239 ..Abutting type
240 ...With subsequent rolling
241 ...With subsequent sliding
242 ....Having contact cleaning structure
243 ...Bridging contacts
244 ...With rigid pivoted member carrying the moving contact
245 ...With resilient mounting
246 ....With spring blade support
247 ....Within supporting guides
248 ...Self-aligning contacts
249 ...Having contact adjusting means
250 ...Having biasing means
251 ....Means for adjusting contact pressure
252 ..Sliding type
253 ...Having contact cleaning structure
253.1 ...Plug type contacts
254 ...Knife and clip contacts
255 ....Having biasing means
256 .....Means for adjusting contact pressure
257 ...With resilient mounting
258 ...Self-aligning contacts
259 ...Having contact adjusting means
260 ...Having biasing means
261 ....Means for adjusting contact pressure
262 ..Material
263 ...Cooperating contacts of different material
264 ...Infiltrated porous substance
265 ...Compositions
266 ...Alloys
267 ...One layer (i.e., additional to its mounting)
268 ...Two layers
269 ...Three layers or more
270 ...Elements
271 ..Blade or pole-plate
272 ...With support
273 ...Rotary
274 ....With support
275 ..Particular shape or structure of the contact
276 ...Coil spring contact
276.1 ....With push button actuator
277 ...Roller contact
277.1 ....With push button actuator
277.2 ....With rocker actuator
278 ...Laminated
279 ...Contact making surface (e.g., grooved)
280 ..Interchangeable and reversible
281 ..Replaceable or renewable
282 ..Spring clip
283 ..Leaf spring support
284 ..Integral contact and terminal structure
285 ..Lubricated
286 ..Adjustment means
287 ...Self-adjusting
288 ..Buffer, rebound preventing
289 ..Cooler
290 ..Spring biasing means
291 ..Detent
292 ..Printed circuit
293 .Cases and bases
293.1 ..Unitary switch mounted in handle or handgrip
294 ..Surface
295 ..With flexible mounting means
296 ..Panel
297 ..Outlet box
298 ..Pendant
299 ...With lamp socket
300 ..Frangible element

	ELECTRIC SWITCH DETAILS
	.Cases and bases
301	..Vibration dampening means
302.1	..Dust, dirt, or moisture excluding
302.2	...Seal for push button actuator
302.3	...Seal for rocker or lever actuator
303	..Split housing
304	..With shield
305	...Electrical shield
306	..Venting means
307	..Stacked
308	.Indicators
309	..Interchangeable inserts
310	..Illuminated
311	...Having light-filtering means
312	...Having additional indicating means
313	...Light visible through actuator
314	....Push button type
315	....Rocker or toggle
316	....Rotatable
317	...Light visible through housing
318	.Latches
318.1	..Mechanism to hold push button down
318.2	...Auxiliary motion of actuator required to release (e.g., turn or slide)
319	..Shockproof
320	..Plural latches
321	..Manually operated latching means
322	...Plate or lever
323	..Self-operating latching means
324	...Cam (plate, lever, etc.)
325	....Spring biased
326	...Gravity operated
327	..Positioning or stop member
329	.Actuators
330	..Auxiliary
331	...Extension or remote
332	...Lever
332.1	...Having auxiliarly housing
332.2	....Housing is a handle or handgrip for tool or appliance
333	..Covers
334	..Safety
335	..Lever
336	..Rotatable
337	..With linkages
338	..With attachment
339	..Rocker
341	..Push button
342	...Including lost motion connection
343	...Hinged button (e.g., piano key)
344	...Mechanism to keep key level
345	...Cap/stem and stem/housing details
	******************************
	DIGESTS
	******************************
DIG 2	Body attached switches
DIG 3	Coin operated
DIG 4	High potential type insulation
DIG 5	Fluid pressure: fluid amplifier
DIG 6	Tie bar
DIG 7	Molded drum
DIG 8	Disturbance
DIG 9	Momentum
DIG 10	Curb, bumper and fender
DIG 11	Web or thread actuated
DIG 12	Burglar screens
DIG 13	Shaft bearing and armature wear indicator switches
DIG 14	Rail or leak indicator
DIG 15	Bin alarm
DIG 16	Gas detector
DIG 17	Gas engine and motor vehicle
DIG 18	Gravity
DIG 19	Gyroscope
DIG 20	Sound and vibration operated
DIG 21	Pencil, counter or dispenser operated
DIG 22	Strain relief, shear pin
DIG 23	Game
DIG 24	Plug holder
DIG 26	Slack cable operated
DIG 27	Thermal magnetic snap
DIG 28	Thermal spring snap
DIG 29	Ball
DIG 30	Fluid conductor
DIG 31	Fluid flow
DIG 32	Speed responsive
DIG 33	Speed synchronizing switch
DIG 34	Recording and reproducing
DIG 35	Weight operated tread/treadless switch
DIG 36	Light operated switches
DIG 37	Hose
DIG 38	Money till drawer operated
DIG 39	Motor vehicle-steering column
DIG 40	Moisture
DIG 41	Liquid contact
DIG 42	Contact welding considerations
DIG 43	Fluid-operated matrix switches
DIG 44	Lubrication-periodic switches
DIG 46	Separators and/or insulators for stacked leaf spring contacts
DIG 47	Light guides for switch indicators (prisms, reflectors, cables, etc.)

CLASS 201 DISTILLATION: PROCESSES, THERMOLYTIC

DECEMBER 1990

1 WITH MEASURING, TESTING OR INSPECTING
2 WITH CLEANING OF APPARATUS
2.5 NON-MINERAL DISTILLAND WITH CATALYST OR CHEMICAL TREATMENT OF VOLATILE COMPONENT
3 WITH PHYSICAL SEPARATION OF SOLID BY-PRODUCT FROM REMOVED ADMIXTURE
4 .Gas or vapor containing mixture
5 AND SHAPING TO DESIRED FORM OR CONFIGURATION
6 .Prior to charging to carbonizing zone
7 WITH COMMINUTING
8 .Prior to charging to carbonizing zone
9 AND SURFACE TREATING MATERIAL TO REDUCE OR PREVENT AGGLOMERATING OR FOAMING OR SWELLING DURING DISTILLATION
10 BY CONDUCTION USING PREHEATED CHARGE CONTAINER OR PREHEATED INERT DISPARATE SOLID OR PREHEATED LIQUID
11 .Liquid is metal
12 .Particulate disparate solid
13 USING A CARBONIZATION PRODUCT AS INDIRECT HEAT SOURCE
14 .For heating the carbonaceous material
15 ..Including heat by burning of product
16 ...Solid product
17 AND REFINING CHAR, E.G., DESULFURIZING COKE
18 UTILIZING APPARATUS OF PARTICULAR COMPOSITION
19 APPLYING ELECTRICAL ENERGY DIRECTLY TO MATERIAL
20 ADDING DISPARATE NON-GASEOUS MATERIAL TO FEED
21 FEED OF TWO OR MORE CARBONACEOUS MATERIAL (AT LEAST THE PREDOMINATE ONE BEING SOLID)
22 .Char containing
23 .Mineral oil containing
24 .Coals only
25 FEED OTHER THAN COAL, OIL SHALE OR WOOD
26 IN PARALLEL STAGES SIMULTANEOUSLY
27 INCLUDING BURNING OF VAPORIZED PRODUCT
28 SEQUENTIALLY REMOVING, TREATING AND RECYCLING A PRODUCT
29 .Removing and treating vapor
30 AND FRACTIONALLY CONDENSING VAPORS
31 FLUIDIZED BED
32 IN A MOVING BED
33 .Agitating
34 .Gravitating
35 CARBONIZING UNDER PNEUMATIC PRESSURE OR VACUUM
36 AND ADDING DISPARATE GASEOUS MATERIAL TO THE CARBONIZING ZONE
37 .Combustion gases
38 .Steam containing
39 QUENCHING CHAR WITH AN INERT MATERIAL
40 ARRANGING THE CARBONACEOUS MATERIAL IN THE CARBONIZING ZONE
41 MISCELLANEOUS

****

CROSS-REFERENCE ART COLLECTIONS

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42 PARTICLE SIZE
43 AN EXTRANEOUS, CYCLICALLY CIRCULATED, INERT HEATING GAS
44 PLURAL DISTINCT TEMPERATURE STAGES
45 DISTILLATE TREATMENT OR CONSERVATION

31 APPARATUS
82 .Systems
83 ..Portably mounted
84 ..Separatory and thermolytic
85 ..Thermolytic and autothermic
86 ...Retort and kiln
87 ....Retort heated by combustion
88 ...Kiln and directly heated chamber
89 ....Interchangeable
90 ....Chamber externally heated
91 ..Autothermic
92 ...Open kiln
93 ...Closed kiln
94 ....With steam generator
95 ....With residue quencher or cooler
96 ..Thermolytic
97 ...Stalls
98 ....Tunnels
99 ...Directly heated chamber
100 ....Rotary chamber
101 ...Dome ovens
102 ...Hearths
103 ....Distilland transferring
104 .....Vertical series
105 ...Retort
106 ....With steam generation
107 ....With digester
108 ....With direct heating
109 ....With cyclic volatile circulation
110 ....With distilland pressure
111 ....With recuperators and regenerators
112 ....With distillate fixing chamber
113 ....Plural
114 .....Common heating furnace
115 .....Annularly arranged
116 .....Vertical and horizontal or inclined
117 ....Conveying
118 .....Screw
119 .....Reciprocating
120 ....Vertical
121 .....With fluid injection
122 .....With recuperator
123 .....With regenerator
124 .....With heating chamber
125 ......Alternate reverse flow flues
126 ......Vertical flues
127 ......Circumvallate flues
128 ....Inclined
129 .....With fluid injection
130 .....With regenerator or recuperator
131 .....Rotary
132 .....Gas bench
133 ....Horizontal
134 .....With fluid injection to retort
135 .....Plural gas and/or air admission
136 .....Rotary
137 .....With heating chamber
138 .....With flues
139 ......Vertical
140 ....With recuperators
141 ....With reversible regenerators
142 ....Alternatively poor and/or rich gas fuel
143 ....Regenerators reversing along the system
144 ....Regenerators reversing across the system
145 ......Horizontal
146 ....With regenerators
147 .....Gas bench
148 ......With recuperator
149 ......With fluid injection
150 ....Preheating
151 ....Combustion control devices
152 ..Separatory
153 ...Still and column
154 ....Plural columns
155 ....Plural stills
156 .....Parallel
158 ...Column
159 ....With preheater
160 ....Automatic temperature and/or pressure control
161 ....Partial reflux condenser
162 ....Vapor-element by-pass
163 ...Still
164 ....Recovery from containers
165 ....Still and stove
166 ....Still and stand boiler
167 ....Still and feed-water heater
168 ....Still and extractor
169 .....Continuous extraction
170 .....Still extractor
172 ....Plural
173 .....Series
174 ......Multiple effect
175 ....With agitator
176 ....With distilland treating devices
177 .....Preheater
178 ......Straining
179 ......Dephlegmating
180 ......Condensing
181 .....Level control
182 ....With vapor-treating devices
183 .....Still and absorber
184 ......Still absorber
185.1 .....Condenser
185.2 ......Direct contact
185.3 ......Air condensers
185.4 ......Circulating coolant in cap or top closure
185.5 ......Helical coil for vapor stream
185.6 ......Helical coil for coolant
186 ......Plural
187 ......Concentric with still
188 ......Still supporting
189 ......Still supported
190 ....Cap (or closure)
191 ....Jacketed
192 ....Still feeding
193 ....Distilland-level control
194 ....Still feeding
195 ......Still feeding
196 ....Distilland-level control
197 .....With separator
198 .....Dephlegmator
199 .....Doubler
200 .....Filter
201 .....Aerator
202 ....With condensate-treating devices
203 .....Aeration
204 .....Decanter
205 ....Vacuum
206 ....Automatic heat control
.Types
..Separatory and thermolytic
207 ...Stump stills
208 ...Directly heated chamber
209 ...Still retort
..Autothermic
210 ...Heap
211 ...Kiln
212 ....Arched
213 ....Partable and/or knockdown
214 ....Bottom discharge
215 ...Directly heated chamber
216 ....Rotary
217 ...Retort
218 ....Rotary and/or tilting
219 ....Molten bath
220 ....Flued
221 ....Vertical
222 ....Structural features
223 .....Wall
224 .....Shields
225 .....Cores

	APPARATUS
	.Types
	..Autothermic
	...Retort
226	....Residue treatment
227	...Quencher
228	....Gas or vapor circulating
229	....Submersible chamber
230	....Conveyer type
	..Separatory
232	...Still
233	....Directly and indirectly heated
234	....Directly heated
235	....Indirectly heated
236	....Spray forming and filming
237	....Tubular
238	....Rotary and/or tiltable
239	.Elements
241	..Cleaning and decarbonizing
242	..Closures
243	...Fluid cooled
	...Dome ovens
244	....Tunnel heads and lids
245	....Removable
246	....Hinged
247	...Horizontal retort
248	....Coke-oven type
249	....Rotary retort
250	...Top
251	....Charging
252	...Bottom
253	....Cooling or quenching
254	..Offtakes
255	...Dip pipes and mains
256	....Valved
257	...Plural
258	...Valved
259	...Jacketed
260	...Cooled
261	...Residue offtakes
262	..Feeding and discharging
263	...Smoke escapes
264	..Foam control
265	..Agitating
266	..Distilland supports and containers
267.1	..Materials of construction
267.2	...Corrugated walls
268	..Expansion provisions
269	..Air and gas seals
270	.Accessories and details
	******************************
	DIGEST
	******************************
DIG 1	Scale problems digest

CLASS 203 DISTILLATION: PROCESSES, SEPARATORY

DECEMBER 1990

1	WITH MEASURING, TESTING OR INSPECTING
2	.Of temperature or pressure
3	.Of concentration
4	INCLUDING PURGING OF THE SYSTEM
5	SEPARATING ISOTOPES OR TAUTOMERS
6	ADDITION OF MATERIAL TO DISTILLAND TO INHIBIT OR PREVENT REACTION OR TO STABILIZE
7	.For scale inhibiting or corrosion preventing
8	.For inhibiting or preventing a polymerization reaction
9	..Of unsaturated hydrocarbon
10	WATER PURIFICATION ONLY
11	.Under pressure or vacuum
12	DISTILLING TO SEPARATE OR REMOVE ONLY WATER
13	.From nitric acid
14	.From organic compound
15	..Organic acid
16	...Acetic
17	..Aldehyde or ketone
18	..Alcohol
19	...Ethanol
20	INCLUDING DEFOAMING OR INHIBITING FOAM
21	AND RECOVERING HEAT BY INDIRECT HEAT EXCHANGE
22	.Utilizing recovered heat for heating feed
23	..Distillation residue as heat source
24	..Compressed vapor as heat source
25	.Utilizing recovered heat for heating the distillation zone
26	..Compressed vapor as heat source
27	.Utilizing recovered heat in subsequent step in process
28	WITH CHEMICAL REACTION
29	.Including step of adding catalyst or reacting material
30	..For polymerizing unwanted component
31	..Oxidizing material
32	..Reducing material
33	..Inorganic salt containing oxygen in the anion
34	..Acid
35	...Phosphoric or sulfuric acid
36	..Alkaline oxide or hydroxide
37	...Alkali metal hydroxide
38	..Organic material
39	WITH DISPARATE PHYSICAL SEPARATION
40	.Of entrained particles from a vapor or gas
41	.Utilizing solid sorbent
42	.Utilizing liquid sorption of component from gas or vapor
43	.Utilizing liquid-liquid extracting of distillation product
44	..Of distillate
45	...And distilling raffinate phase
46	...And distilling extractant phase
47	.Utilizing removing solid from liquid
48	..By crystallizing
49	CONVECTIVE DISTILLATION WITH NORMALLY GASEOUS MEDIUM, E.G., AIR
50	ADDING MATERIAL TO DISTILLAND EXCEPT WATER OR STEAM PER SE
51	.At least two materials
52	..Mixtures of hydrocarbons
53	..One material is water
54	...A second material is aldehyde or ketone
55	...A second material is an alcohol
56	..One additive an alcohol or ether
57	.Organic compound
58	..Heterocyclic
59	..Amine
60	..Ester
61	..Acid
62	..Aldehyde or ketone
63	..Alcohol or ether
64	...Polyhydroxy alcohol or ether derivative thereof
65	...Hydroxy aromatic (e.g., Phenol)
66	...Methanol
67	..Halogenated hydrocarbon
68	..Hydrocarbon
69	...Aromatic
70	...Acyclic
71	PLURAL DISTILLATIONS PERFORMED ON SAME MATERIAL
72	.One a filming distillation
73	.One a distillation under positive pressure or vacuum
74	..Distillation of initial distillate
75	...And return of distillation product to a previous distillation zone
76	...Including the addition of water or steam
77	...Initial distillation under positive pressure or vacuum
78	..And returning distillation product to a previous distillation zone
79	..Including the addition of water or steam
80	..Initial distillation under positive pressure or vacuum
81	.Distillation of initial distillate
82	..And returning distillation product to a previous distillation zone
83	..Including the addition of water or steam
84	.And returning distillation product to a previous distillation zone
85	.Including the addition of water or steam
86	DISTILLATION IN APPARATUS OR ELEMENT OF SPECIFIC MATERIAL
87	WITH FRACTIONAL CONDENSATION OF VAPOR OUTSIDE STILL
88	FLASH VAPORIZATION OF DISTILLAND
89	FILMING OF DISTILLAND FOR VAPORIZATION
90	SPRAYING OF DISTILLAND INTO VAPORIZATION ZONE
91	VAPORIZATION ZONE UNDER POSITIVE PRESSURE OR VACUUM
92	.Including the addition of water or steam
93	..And returning product of distillation step to distillation zone
94	.And returning product of distillation step to distillation zone
95	INCLUDING ADDITION OF WATER OR STEAM
96	.To distillation column
97	.And returning product of distillation step to distillation zone
98	AND RETURNING PRODUCT OF DISTILLATION STEP TO DISTILLATION ZONE
99	MISCELLANEOUS SEPARATORY
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	CROSS-REFERENCE ART COLLECTION
	******************************
100	PARTICULAR TYPE OF HEATING
	******************************
	DIGESTS
	******************************
DIG 1	Solar still
DIG 2	Laboratory distillation
DIG 3	Acrylonitrile
DIG 4	Heat pump
DIG 5	Human waste
DIG 6	Reactor-distillation
DIG 7	Start up or shut down
DIG 8	Waste heat
DIG 9	Plural feed
DIG 10	Vinyl acetate
DIG 11	Batch distillation

CLASS 204 CHEMISTRY, ELECTRICAL AND WAVE ENERGY

DECEMBER 1990

	PROCESSES AND PRODUCTS
1.11	.Electrolysis
1.5	..Actinide series element or compound
2	..Electroprinting
2.1	..Electroforming battery electrode
3	..Electroforming
4	...Reproductions
5	....Recording devices
6	....Printing plates, electrotypes, dies and the like
7	....Mirrors and reflectors
8	....Ornamental
9	....Rolls, rings or hollow bodies
10	...Powder, flakes or colloidal suspensions
11	...Perforated or foraminous articles
12	...Sheets, webs, wires, filaments
13	....Of indeterminate length
14.1	..Coating
	...Specific shapes, forms or configurations
15	....Localized areas
16	.....Uniting and repairing
17	.....Printing members
18.1	.....Designs and ornamentation
19	....Mirrors and reflectors
20	....Non-conducting base
21	.....Textile fabrics
22	.....Sheets and plates
23	....Conducting base
24	.....Perforated or foraminous
25	.....Cylinders, rolls or hollow articles
26	......Internal coating
27	.....Sheets, webs, wires, filaments
28	......Of indeterminate length
	...Combined
29	....With base treatment
30	.....Non-conducting base
31	......Waterproofing
32.1	.....Cleaning or etching
33	......Aluminum base
34	......Ferrous base
34.5	......Semiconductor
35.1	....With treatment of the coating
36	.....Brightening and burnishing
37.1	.....Heat treatment
37.3	......Coating includes tin
37.6	.....Nonmetal electrolytic coating
38.1	....With other coating methods
38.3	.....Anodic layer
38.4	.....Nonelectrolytic metal layer with subsequent electrodeposition
38.5	.....Electrolytic layer with subsequent, nonelectrolytic metal layer
38.6	.....Ceramic layer
38.7	.....Resinous layer
39	...From fused bath
	...From aqueous bath
40	....With multiple layers
41	.....Chromium layer
42	.....Anodic layer or film
43.1	....Alloys
44.2	.....Zinc is basic constituent
44.3	.....Gold is basic constituent
44.4	.....Lead, tin or germanium is basic constituent
44.5	.....Group VIII metal is basic constituent
44.6	......Platinum group metal containing
44.7	......Phosphorus containing
44	.....Copper containing
45.1	....With single metal
45.5	.....Group VII transition metal
46.1	.....Precious metals
47	......Platinum group metal (i.e., Pt, Pd, Ru, Rh, Ir, Os)
47.5	......Gold
48	.....Iron group metals (i.e., iron, nickel, cobalt)
49	......Nickel
50.1	.....Cadmium
50.3	......From cyanide
51	.....Chromium
52.1	.....Copper
52.5	......From cyanide
53	.....Lead
54.1	.....Tin
54.5	......Alkaline tin
55.1	.....Zinc
55.3	......From cyanide
55.5	.....Antimony Plating
56.1	....With nonmetals
57	.....Peroxides
58	.....Aluminum base
58.4	.....Magnesium base
58.5	...Non-aqueous solution
59 R	..Synthesis
59 F	....Fluororganic compounds
59 M	....Metal
59 AM	.....Alkali metal
59 QM	....Of organometallic compound
59 L	.....Organolead compound
60	...From fused bath
61	....Compound
62	.....Organic
63	.....Inorganic nitrogen containing
64 R	....Metals
64 T	......Titanium, zirconium, hafnium
65	.....Beryllium
66	.....Lead or zinc
67	.....Aluminum
68	.....Alkali-forming
69	......Alkaline earth metals
70	.......Magnesium
71	.....Alloys
	...From aqueous bath
72	....Organic compounds
73 R	.....Hydrogenation
73 A	.......Of nitrilo alkene/alkyne unsaturation
74	......Of nitrogenous radicals
75	......Of carbonylic radicals
76	.......Acyclic
77	........Production of alcohols
78	.....Oxidation
79	......Of acyclic compounds
80	.......Hydrocarbons
81	.....Halogenation
	....Inorganic compounds
82	.....Per-compounds
83	......Peroxides
84	.......Hydrogen peroxide
85	......Perborates
86	.....Metallic salts
87	......Carbonates
88	.......Of lead
89	......Chromium containing
90	......Phosphorus containing
91	......Nitrogen containing
92	......Sulfur containing
93	.......Sulfates
94	......Halogen containing
95	.......Oxyhalogen
96	.....Metallic oxides and hydroxides
97	......Of chromium
98	......Of alkali-forming metals
99	.......Mercury cathode
100	......Of alkaline earth metals
101	.....Non-metallic compounds
102	......Ammonia and ammonium hydroxide
103	......Acid and acid anhydrides
104	.......Sulfuric
105 R	....Metallic elements
105 M	.....Manganese
106	.....Copper

	PROCESSES AND PRODUCTS
	.Electrolysis
	..Synthesis
	...From aqueous bath
	....Metallic elements
	.....Copper
107	......Halogenating leach
108	......Sulfating leach
109	.....Precious metals
110	......Cyaniding leach
111	......Halogenating leach
112	.....Iron group metals (i.e., iron, nickel, cobalt)
113	......Halogenating leach
114	.....Lead, zinc, cadmium
115	......Reduction at the cathode
116	......Alkali hydroxide leach
117	......Halogenating leach
118	.......Zinc
119	......Sulfating leach
120	.....Tin
121	......Alkali hydroxide leach
122	......Halogenating lach
123	.....Alloys
124	......Of mercury
125	.......With alkali-forming metal
126	.......With precious metals
127	........Cyaniding leach
128	....Nonmetallic elements
129	.....Hydrogen or oxygen
129.1	..Erosion of a workpiece for shape or surface change; e.g., etching, polishing, etc.
129.2	...With measuring, testing or sensing
129.25	....To adjust voltage across or size of tool-workpiece gap
129.3	...Employing irradiation or workpiece of nonuniform internal electrical characteristics
129.35	...With preliminary cleaning or shaping of workpiece
129.4	...Employing internal battery action or simple alternating current
129.43	...Employing periodic current change
129.46	...Employing abrading or wiping; e.g., electrochemical grinding, etc.
129.5	...With defined electrode-workpiece gap or gap maintenance
129.55	...Sharpening, pointing or aperture making
129.6	...By local application of electrolyte; e.g., unsupported jet, surface tension, etc
129.65	...Of masked workpiece
129.7	...With vibration or defined electrolyte movement or pressure during erosion
129.75	...Electrolyte composition or with defined electrolyte
129.8	....Less than 50% water
129.85	.....More than 20% organic material
129.9	.....More than 20% chromium compound or phosphoric acid
129.95	....Containing organic or Cr or P or Cyan compound
130	..Material treatment
131	...Organic materials
132	....Fibrous
133	.....Bleaching
134	.....Dyeing
135	.....Hides or skins
136	....Hydrocarbon oils
138	....Sugar
140	...Metals and metallic alloys
141.5	....Removing foreign materials, e.g., cleaning, etc.
144	.....By internal battery action
144.5	.....With current change in workpiece or solid-workpiece moving contact
145 R	.....Nonelemental material from ferrous metals
145 F	.......Fused bath
146	.....Entire identifiable elemental layer or portion; e.g., stripping, etc.
147	....Object protection
148	.....Internal battery action
149	...Water, sewage and other waste waters
150	....Internal battery action
151	....Diaphragm
152	....With filtering
153	...Alkali-forming metal hydroxides
153.1	..Analysis or testing
153.11	...For corrosion
153.12	...Involving enzyme or microorganism
153.13	...For halogen or halogen containing compound
153.14	...For nitrogen or nitrogen containing compound
153.15	...For alkali or alkaline earth metal or compound thereof
153.16	...For oxygen or oxygen containing compound (except water)
153.17	....Utilizing semipermeable membrane
153.18	....Utilizing solid electrolyte
153.19	...For sulfur or sulfur containing compound
153.2	...For organic compound
153.21	...For pH
153.22	...For water (e.g., moisture, etc.)
153.23	...Including titration
155	.Electrical, or wave energy in magnetic field
156	..With discharge
157.15	.Processes of treating materials by wave energy
157.2	..Isotope separation or enrichment
157.21	...Inorganic product produced
157.22	....Using laser
157.3	..Removing a component from normally gaseous mixture
157.4	..Process of preparing desired inorganic material
157.41	...Using laser
157.42	...Using sonic or ultrasonic energy
157.43	...Using microwave energy
157.44	...Using ionizing radiation
157.45	...Boron, phosphorous or silicon containing product produced
157.46	...Nitrogen containing product produced
157.47	...Carbon containing product produced
157.48	...Halogen containing product produced
157.49	...Sulfur containing product produced
157.5	...Oxygen containing product produced
157.51	....Metal oxide or hydrate thereof
157.52	...Hydrogen containing product produced
157.6	..Process or preparing desired organic product containing at least one atom other than carbon and hydrogen
157.61	...Using laser
157.62	...Using sonic or ultrasonic energy
157.63	...Using ionizing radiation
157.64	....Nitrogen, sulfur, phosphorous or silicon containing product produced
157.65	....Carbocyclic ring containing product produced
157.67	...Vitamin product produced
157.68	...Carbohydrate or protein product produced
157.69	...Heterocyclic product produced
157.7	....Hetero sulfur containing
157.71	....Hetero nitrogen containing
157.72	.....Hetero nitrogen ring contains at least two hetero atoms
157.73	...Phosphorous product produced
157.74	...Silicon product produced
157.75	...Heavy metal product produced

PROCESSES AND PRODUCTS

	.Processes of treating materials by wave energy
	..Process or preparing desired organic product containing at least one atom other than carbon and hydrogen
157.76	...Sulfur product produced
157.77	....Nitrogen containing
157.78	....Oxygen containing
157.79	.....Halogen containing
157.8	....Halogen containing
157.81	...Nitrogen product produced
157.82	....Oxygen containing
157.83	.....Nitroso or oxime containing
157.84	......Halogen containing
157.85	....Carbon triple bonded to nitrogen containing
157.86	....Halogen containing
157.87	...Carboxylic acid or derivative product produced
157.88	....Oxygen other than as part of a carboxylic acid or derivative moiety
157.89	....Atom other than carbon, hydrogen or oxygen
157.9	...Alcohol product produced
157.91	....Fused or bridged ring containing
157.92	...Ether product produced
157.93	...Aldehyde or ketone product produced
157.94	...Halogen product produced
157.95	....Carbon and halogen only in product
157.96	.....Carbocyclic ring containing
157.97	......Aryl ring containing
157.98	....Unsaturated product
157.99	.....Unsaturation in aryl ring
158.1	....Carbocyclic ring containing
158.11	....Two or more diverse halogen atoms containing
158.12	....Four or more carbon atoms containing
158.14	..At least one carbocyclic ring and only carbon and hydrogen atoms in product produced
158.2	..Processes of purifying materials
158.21	...Organic material purified

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Note: See subclasses ....
900-914 for art collections.
pertaining to subclasses....
157.15-158.21. ....
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164	.Electrostatic field or electrical discharge
165	..Organic
166	...Vitamins
167	...Fats, fatty oils, ester type waxes, or higher fatty acids
168	...Hydrocarbons
169	....Halogenated or oxidized
170	....Gaseous
171	.....Acetylene
172	....Cracking hydrocarbon oils
173	..Carbon
174	..Sulfur-oxygen compounds
175	..Hydrogen peroxide
176	..Ozone
177	..Nitrogen compounds
178	...Arc or spark discharge
179	....Nitrogen oxides
180.1	.Electrophoresis or electro-osmosis processes
180.2	..Coating or forming of object
180.3	...Rubber or vulcanizable natural gum used to coat or form
180.4	....Sheet, web, wire or filament of indeterminate length formed or coated
180.5	...Alternating current
180.6	...Radiation energy (e.g., curing, etc.)
180.7	...Interior of article
180.8	...Regeneration, or replenishment of coating bath (e.g., ultrafiltration, ion exchange, measuring-adjustment, etc.)
180.9	...Forming of object
181.1	...Plural coating operations
181.2	....Anodized or aluminum oxide coating
181.3	....Phosphate conversion coating
181.4	...Bath having designated chemical composition (DCC)
181.5	....Resultant coating is solely inorganic
181.6	....Anodic processes only
181.7	....Cathodic processes only
181.8	..Separation or purification of hydrocarbon oil
181.9	...Aqueous system
182.1	..At least two different electrophoretic or electro-osmotic methods or a combination of electrophoretic and electro-osmotic methods used, together or sequentially (other than merely combination of anion selective and cation selective)
182.2	..Inorganic siliceous or calcareous material prepared, treated or separated (e.g., clay, earth, asbestos, glass, etc.)
182.3	..Barrier separation (e.g., membrane, filter paper, etc.)
182.4	...Ion selective (i.e., distinguishes between different charges)
182.5	....Sea water, brine or sodium chloride prepared, treated or used
182.6	....Polypeptide or amino acid prepared, separated or treated (e.g., protein, milk, whey, blood, etc.)
182.7	..Absorbent strip electrophoresis (e.g., cellulose acetate or paper strip electrophoresis, etc.)
182.8	..Gel electrophoresis
182.9	...Isoelectric focusing (pH variation)
183.1	..Dielectrophoresis (nonuniform electric field)
183.2	..Isoelectric focusing (pH variation)
183.3	..Isotachophoresis (Displacement electrophoresis) or measurement of ion or particle mobility
186	.Electrical separation or purification of liquids
188	..Hydrocarbon oils
189	...With addition of dielectric fluid
190	...With addition of water or other modifying agent
191	...Modified alternating current waves
192.1	.Coating, forming or etching by sputtering
192.11	..Ion beam sputter deposition
192.12	..Glow discharge sputter deposition (e.g., cathode sputtering, etc.)
192.13	...Measuring or testing (e.g., of operating parameters, property of article, etc.)
192.14	...Coating inorganic material onto polymeric material
192.15	...Specified deposition material or use
192.16	....Wear or abrasion resistant
192.17	....Electrical contact material
192.18	....Piezoelectric
192.2	....Ferromagnetic
192.21	....Resistor
192.22	....Insulator or dielectric
192.23	.....Silicon containing
192.24	....Superconductor
192.25	....Semiconductor
192.26	....Optical or photoactive
192.27	.....Reflective

	.Coating, forming or etching by sputtering
	..Glow discharge sputter deposition (e.g., cathode sputtering, etc.)
	...Specified deposition material or use
	....Optical or photoactive
192.28	.....Absorptive
192.29	.....Transparent conductor
192.3	....With sputter etching
192.31	..Ion plating
192.32	..Sputter etching
192.33	...Measuring or testing (e.g., of operating parameters, end point determination, etc.)
192.34	...Ion beam etching (e.g., ion milling, etc.)
192.35	...Etching specified material
192.36	....Organic
192.37	....Silicon containing
192.38	.Vacuum arc discharge coating
193	APPARATUS
194	.Electrolytic
400	..Analysis and testing
401	...Fault testing of sensor or component
402	...Regeneration or activation
403	...Biological, e.g., microbe, enzyme, antigen, etc.
404	...Corrosion
405	...Titration
406	...With significant electrical circuitry or nominal computer device
407	...With significant display or analytical device
408	...With means for temperature or pressure compensation
409	...With means providing specified-flow condition or flow-path
410	....Solid electrolyte means
411	....Three or more electrodes
412	...Three or more electrodes
413	...Liquid electrode, e.g., Hg, Na, etc.
414	...Gel electrolyte
415	...Selectively permeable membrane
416	...Ion-sensitive electrode
417	....Liquid ion-exchanger
418	....Organic membrane
419	....Inorganic membrane
420	.....Glass ion-selective membrane
421	...Solid electrolyte
422	....Liquid sample sensor
423	.....With fugitive protective element
424	....Gas sample sensor
425	.....With impressed current means
426	......Planar electrode surface
427	.....With gas reference material
428	......With protective element
429	.......Protective element is a layer
430	...Moisture absorbing electrolyte
431	...Gas sensing electrode
432	....With gas diffusion electrode
433	...Measuring carbon or pH
434	...Involving plating, coating or stripping
435	...Standard reference electrode
196	..Object protection
197	...Internal battery
	..With movable electrode means
198	...Work conveyer
199	....Rotary
200	.....With base treatment
201	.....Loose article
202	....Endless
203	.....With base treatment
204	......With current control
205	.....With current control
206	...Continuous strip or filament electrode
207	....With base treatment
208	.....Stripping
209	.....Mechanical working
210	.....Heat treatment means
211	....With current control
212	...Rotary
213	....Barrels and rotary receptacles
214	.....Swinging or tilting receptacles
215	....With base treatment
216	.....Stripping
217	.....Mechanical working
218	....With current control
219	...Liquid electrode
220	....With electrode recirculation means
221	....With oscillator, reciprocator or agitator
222	...Electrode oscillator, reciprocator or agitator
223	....With current control
224 R	...Localized area applicators
224 M	.....Electrochemical machining
225	...Electrode feeding or withdrawal means
226	....With base treatment
227	..Cells with base treatment means
228	..Cells with current control means
229	...With fluid pressure, flow or level intercontrol
230	....Gaseous fluid
231	...Auxiliary electrode
232	..Cells with electrolyte treatment means
233	...Leacher, dissolver or extractor
234	....Recirculation
235	.....With filter
236	.....With heater or cooler
237	...Recirculation
238	....With filter
239	....With heater or cooler
240	...With filter
241	...With heater or cooler
242	..Cells
243 R	...Fused bath
243 M	.....Bath current distribution, magnetic field control
244	....Plural cells
245	....With feeding and/or withdrawal means
246	.....Gas feeding
247	.....Gas withdrawal
248	...Internal battery
249	....Filter or loose electrode type
250	...Liquid electrode
251	....Diaphragm type
252	...Diaphragm type
253	....Plural cells
254	.....Bipolar electrode
255	......With feeding and/or withdrawal means
256	.......Gas
257	.....With feeding and/or withdrawal means
258	......Gas
259	....Basket-type electrode
260	....Concentrically arranged electrodes
261	....With agitator
262	....With heater or cooler
263	....With feeding and/or withdrawal means
264	.....And filter
265	.....Gas feeding
266	.....Gas withdrawal
267	...Plural cells
268	....Bipolar electrode
269	....With feeding and/or withdrawal means
270	.....Gas
271	...Portable
272	...Concentrically arranged electrodes
273	...With agitator
274	...With heater or cooler
275	...With feeding and/or withdrawal means
276	....And filter

	APPARATUS
	.Electrolytic
	..Cells
	...With feeding and/or withdrawal means
277	....Gas feeding
278	....Gas withdrawal
279	..Elements
280	...Electrodes
281	....Electroforming molds or strips plates
282	....With diaphragm
283	.....Perforated or foraminous electrode
284	....Perforated or foraminous
285	.....Work holder
286	....With electrode supporting means
287	.....Work container
288	.....Electrodes with lateral extensions
289	....With lateral extensions
290 R	....Laminated or coated
290 F	......Dielectric film-forming metal base, insoluble conductive coating
291	....Composition
292	.....Metallic
293	......Alloys
294	.....Carbon containing
295	...Diaphragms
296	....Organic
297 R	...Electrode supports and work holders
297 M	.....Workpiece held by magnetism or suction
297 W	.....Workpiece rack
298.01	.Coating, forming or etching by sputtering
298.02	..Coating
298.03	...Measuring, analyzing or testing
298.04	...Ion beam sputter deposition
298.05	...Ion plating
298.06	...Triode, tetrode, auxiliary electrode or biased workpiece
298.07	...Specified gas feed or withdrawal
298.08	...Specified power supply or matching network
298.09	...Specified cooling or heating
298.11	...Specified mask, shield or shutter
298.12	...Specified target particulars
298.13	....Target composition
298.14	...Specified anode particulars
298.15	...Specified work holder
298.16	...Magnetically enchanced
298.17	....Flux passes through target surface
298.18	.....Focusing target (e.g., conical target, plural inclined targets, etc.)
298.19	.....Planar magnetron
298.2	......Moving magnetic field or target
298.21	.....Cylindrical or curved magnetron target
298.22	......Moving magnetic field or target
298.23	...Moving workpiece or target
298.24	....Indeterminate length moving workpiece
298.25	....Multi-chamber (e.g., including air lock, load/unload chamber, etc.)
298.26	....Plural diverse treatment stations, zones, or coating material source within single chamber
298.27	....Plural modes of movement (e.g., planetary, epicyclic, etc.)
298.28	....Rotational movement
298.29	....Oscillatory movement
298.31	..Etching
298.32	...Measuring, analyzing or testing
298.33	...Specified gas feed or withdrawal
298.34	...Auxiliary electrode, bias means or specified power supply
298.35	...Multi-chamber, load/unload means or moving workpiece
298.36	...Beam or directed flux etching (e.g., ion beam, etc.)
298.37	...Magnetically enhanced
298.38	...Microwave excitation
298.39	...Plural parallel plates (e.g., desmearing reactor, etc.)
298.41	.Vacuum arc discharge coating
299 R	.Electrophoretic or electro-osmotic
299 EC	...Coating
300 R	..With electrode moving means
300 EC	....Coating
301	..With diaphragm
302	.Electrical separation or purification of liquids
304	..With electrode moving means
305	..With current control means
306	...With fluid pressure, flow or level intercontrol
307	..With agitator or vibrator
308	..With heating or cooling means
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	CROSS-REFERENCE ART COLLECTIONS
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900	EFFECTING A CHANGE IN ISOMERIZATION BY WAVE ENERGY
901	EFFECTING A COLOR CHANGE BY WAVE ENERGY
902	PRODUCTION OF DESIRED COMPOUND BY WAVE ENERGY IN PRESENCE OF A CHEMICALLY DESIGNATED NONREACTANT CHEMICAL TREATING AGENT (EXCLUDING WATER, CHLOROFORM, CARBON TETRACHLORIDE, METHYLENE CHLORIDE OR BENZENE)
903	.Inorganic chemical treating agent
904	..Metal treating agent
905	...Heavy metal agent
907	.Silicon or boron treating agent
908	.Phosphorus treating agent
909	.Heavy metal treating agent
910	.Sulfur treating agent
911	.Nitrogen treating agent
912	.Oxygen treating agent
913	..Peroxide agent
914	.Only carbon, hydrogen or halogen atom in treating agent
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	DIGESTS
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DIG 1	Mist prevention
DIG 2	Addition agents
DIG 3	Auxiliary internally generated electrical energy
DIG 4	Electrolysis cell combined with fuel cell
DIG 5	Magnetic plus electrolytic
DIG 6	Unusual non-204 uses of electrolysis
DIG 7	Current distribution within the bath
DIG 8	AC plus DC
DIG 9	Wave forms
DIG 10	Simultaneous abrading and plating
DIG 11	Laser beam used
DIG 12	Electrochemical machining
DIG 13	Purification and treatment of electroplating baths and plating wastes

CLASS 206 SPECIAL RECEPTACLE OR PACKAGE

DECEMBER 1990

0.5	INFUSION CONTAINING
0.6	FOR GAS
0.7	.With gas storing absorbent or solvent
0.8	FOR COIN, E.G., MAT
0.81	.Combined
0.82	.With closing or fastening means
0.83	..Multiple pocket or compartment
0.84	.Multiple pocket or compartment
85	WITH IGNITER FOR TOBACCO CONTENT
86	.Combined
87	.Igniter is flint-wick type
88	..Interrelated ignition and content access
89	..With common access to igniter and content
90	.Igniter is match
91	..Inner compartment slides relative to outer
92	..Swingable container flap or cover provides access to match
93	...Unitary foldable blank container and match cover unit
94	..Attached to or carried by external container
95	...Having means to receive cover flap of match packet (e.g., tongue and slot connection)
96	MATCH PACKET, CONTAINER OR HOLDER (E.G., MATCH SAFE)
97	.With windguard
98	.Striker surface in withdrawal path of match
99	..Match comb type
100	..Opposed striker surfaces
101	.Means to secure to person or garment
102	.With disparate article, article receiver or display feature (not ash tray or tobacco)
103	..Match comb type
104	.Match comb type
105	..Plural "books"
106	..With accidental ignition prevention means or arrangement
107	...Discrete holder
108	...Striker surface guard or shield
109	....Groove or opposed surfaces
110	....Slide or pivot of match comb
111	...Nonflap type
112	...Striker surface on outside of cover flap
113	....Access through tuck-flap aperture
114	....At comb back
115	...Match-head shield
116	..Pivotally mounted comb
117	..With integral debris receiver
118	..Discrete case for book
119	..Attachment means
120	...For ash tray
121	.Plural matches grouped in box
122	..Plural boxes grouped in box
123	..Gravity feed to access port
124	...Convertible from box
125	...With debris receiver
126	..Mechanistic means to raise content
127	..With means to support or attach box
128	...Convertible from box
129	...With means to expose match
130	...Including debris receiver
131	..With discrete case for box
132	...Including debris receiver
133	..With debris receiver
134	.With support or attachment means (for loose matches)
135	..With debris receiver
136	.With debris receiver
137	.With separate striker member
138	..Magazine supply
44 R	DISPLAY TYPE (I.E., CONVERTIBLE TO OR FROM DISPLAY)
44 B	..Sheet holder
44 K	..Basket
44.11	.Stock and sample
44.12	.With removal facilitating means
45	.Terraced or stepped shelves
45.11	.Sectional or multiple movable compartment type
45.12	..With rupturable wall portion
45.13	.Cover-controlled or cover-operated display
45.14	.With content supporting and/or positioning means
45.15	..Slidable or pivotally mounted
45.16	..Follower or adjustable bottom
45.17	..Located on or formed by outwardly swingable side wall
45.18	..Movable to inclined support position
45.19	..Supporting bed or platform on receptacle bottom
45.2	.With cover convertible to easel or receptacle support
45.21	..Folded blank box
45.22	...Multiple blank
45.23	..Pivoted cover
45.24	.With folding easel or receptacle support
45.25	..Folded blank box
45.26	...Support cut from receptacle wall
45.27	...Multiple blank
45.28	.With cover convertible to display card
45.29	..Folded blank box
45.3	...Multiple blank
45.31	.With window or transparent wrapper
45.32	..Pie
45.33	..Transparent wrapper
45.34	..Cover one or more walls
139	PORTABLE SEGREGATING CARRIER FOR PLURAL CYLINDRICAL BEVERAGE-TYPE RECEPTACLES (E.G., BEER CANS, POP BOTTLES)
140	.Noncollapsible carrier with tongue and aperture-type interlock between exterior walls
141	.Handle struck from top wall
142	.Handle retainer container mutually coact for grasping receptacles
143	..Handle means interposed between receptacles
144	.Interlocking carriers
145	.Receptacle chime, or closure cap flange, engaging type (e.g., "six-pack")
146	..Having additional retainer for disparate article
147	..Unitary retainer or foldable blank packaging unit
148	...Inwardly struck tab engages radially extending shoulder of chime or edge of cap skirt
149	...Inwardly struck tab engages inner cylindrical surface of chime
150	...Band or strand type
151	...Unitary retainer grips chime perimetrically
152	...Slots spaced along fold line from retaining apertures
153	....Only one end of retained receptacles engaged
154	....Chimes at both ends of retained receptacle held in slots
155	....Sleeve-type container with end walls
156	...Retaining flap includes periphery of blank
157	....Flap projects between rows of receptacles
158	...Rim of aperture in horizontal wall engages chime

	PORTABLE SEGREGATING CARRIER FOR PLURAL CYLINDRICAL BEVERAGE-TYPE RECEPTACLES (E.G., BEER CANS, POP BOTTLES)
	.Receptacle chime, or closure cap flange, engaging type (e.g., "six-pack")
159	..Clip-type retainer interlocks with chimes of juxtaposed receptacles
160	..Spacer abuts side and chimes of receptacles
161	..Finger-hole carrier means
162	.Pendent from handle
163	..Handle bodily shiftable vertically
164	...With hooked end
165	...Panel type
166	....Retractable into carrier
167	..Part movable to receptacle loading position
168	...Bottle neck engaged in wall aperture
169	...Retained in carrying position by handle
170	..Collapsible
171	...Having anti-collapse latch
172	....Involving middle wall
173	.....Interlock with bottom
174	...Individual receptacle positioning means
175	....Folded blank type
176	.....Multiple blanks
177	......Severable blank
178	......Separate blank forms transverse wall
179	.......U-shaped member
180	.....Center wall
181	......Horizontally and vertically folded slide flap forms transverse wall
182	......Single center wall folded from bottom
183	......Confronting center walls folded from bottom
184	......Lower margins of center walls connected at horizontal fold
185	......Center walls connected at vertically extending fold, one free end wall
186	......One center wall folded on horizontal line
187	.......Two center walls folded on horizontal line
188	......Doubled center walls folded from different end walls
189	......Side walls folded from unitary bottom wall
190	.......Transverse wall folded from center wall only
191	.......Transverse wall folded from center wall and side wall
192	..Divisible carrier
193	..Folded blank with means for receptacle compartment or spacer
194	...With apertured receptacle retaining wall
195	....Multiple receptacles in single aperture
196	....With additional receptacle separator
197	...With positioning cutout
198	...Tray with center wall forming a handle
199	..Having apertured panel for receptacle
200	..Folded blank carrier with applied handle
201	..Rigid grid support and retainer
202	...Formed of wire
203	..Molded plastic tray
77.1	WITH SOAP-HANDLING MEANS
204	WITH MOISTURE ABSORBENT
205	INCLUDING ANCILLARY ARTICLE CONTACTING MEDIUM
206	.For fastener
207	.For tool or appliance
208	..Razor
209	..Brush
209.1	...Transverse bristle
210	..Body treatment
211	.For spark plug
212	.For thermometer
213	.For apparel
213.1	.Gas medium
214	FOR PLURAL STATIONERY IMPLEMENTS
215	FOR STATIONERY OR CARBON PAPER
551	FOR PASTRY WEDGE, PER SE; E.G., PIE SLICE
219	FOR MIXING
220	.Including free mixing element (e.g., pestle)
221	.Means to manipulate without rupture
222	.Tear strip or piercer
216	COMBINED OR CONVERTIBLE
217	.Including drinking vessel
218	..Collapsible
223	.Assemblage or kit
541	..Camp or lunch type
550	...With external vent
542	...With specified nonfood characteristic; e.g., mirror
543	...With specified vacuum-type receptacle
544	...With retainer for vacuum-type receptacle
545	...With structural, or composition, insulating feature
546	...Knockdown, or nested, mess gear type
547	...With canteen container
548	...With flaccid wrapper
549	...With specified means to carry or support
568	..Specified mixture components
569	..Test (e.g., diagnostic or indicator)
570	..Therapeutic type (e.g., first aid, doctor kit)
571	...Syringe, hypodermic or catheter
572	...Material with tool
573	..Signal, lamp or reflector
574	..Needlework or dressmaking
575	..Arts, crafts or sign
576	..Household or office equipment (e.g., mixer-grinder, recording kit)
577	..Knockdown
578	..Photography
579	..Game, sport or education
580	..Lock with key
581	..Cosmetic or toilet
582	..Patch (e.g., tire, tank, roof)
224	..Draftsman or lettering
225	..Including wound, or rolled, web-like material
226	...With storage means in core
227	..Including thread or strip
228	..With razor
229	..With content applicator or dispenser
230	...Fastener and tool
231	..Including fastener
232	.Including booklet, leaflet or record means
233	.Including tissue "dispensing" means
38	.For pocket or personal use
38.1	..Key case
234	..Tools
235	..With vanity case
236	..With tobacco produt
237	...And paper
238	...And cutting or comminuting means
239	....For opening inserted package
240	....For shaving plug
241	....For cutting quid
242	FOR TOBACCO, PIPE OR CIGARETTE HOLDER
243	.Hat supported

	FOR TOBACCO, PIPE OR CIGARETTE HOLDER
244	.Pipe
245	.Laminate wall
246	.With ash holder
247	.With anti-tampering means
248	.With means for holding package or bag at different levels in outer container
249	.With ejector
250	..Content withdrawal synchronized with cover opening
251	...In casing with two hinged complementary covers
252	..Having biasing means
253	..Plunger type
254	..Having pulling means
255	..Follower type
256	.With segregating means
257	..Displaceable, resiliently joined, plural cell elements
258	..Flexible web
259	.Reinforcement or case for single cigarette package
260	.Pouch type
261	.Casing formed of two hinged complementary covers
262	..Released by translation of covers
263	..Having retaining member
264	.With opening or separating means
265	.With closure
266	..Biased
267	..Sliding
268	..Integral hinge
269	..Waterproof
270	..Telescoping
271	.Sheet-formed receptacle
272	..Twisted
273	..Folded blank
274	..Sealed
275	..Shield
276	.End cover for cigar or cigarette
277	FOR SQUEEZE TUBE (E.G., TOOTH PASTE TUBE)
81	FOR COLOR OR PAINT MATCHING
1.7	FOR ARTIST EQUIPMENT
1.8	.Paint holder (e.g., color box)
1.9	.Paint package
83	FOR TEETH
3	FOR AMMUNITION
5	FOR EYEGLASS OR SPECTACLE
5.1	.Contact lens
6	.Hinged parts
6.1	FOR JEWELRY
278	FOR APPAREL
278.1	.Cedar chest type
8	.Hat and headwear
9	..Rack, frame or ring
11	.Fur
279	.Means to hold article hanger or support
280	.Reinforced wall
281	.Indicia
282	.Means to facilitate article insertion
283	..Wall spreader or swing arm attached to panel
284	.Article hanger attachment extended from container
285	..Removable article hangers retained in spaced relation
286	..Bag-type container
287	...Article completely enclosed
287.1	....Foldable to compact use configuration
288	.Article hanger integral with container
289	.Article hanger suspended from container or attached support
290	..Plural article hangers
291	...Removable article hangers retained in spaced relation
292	.Article retainer or positioner
293	..Resilient or elastic member
294	..Aperture
295	..Tongue struck from panel
296	..Member enters opening in retained article
297	..Separate self-supporting folded blank
298	..Bar, rod or tube
299	.Single self-supporting folded blank forms container
300	FOR CLOTHES HANGER
301	FOR TIME MECHANISM OR ELEMENT
18	.Watch or clock movement
70	.Watch spring
19	SACRAMENTAL
302	FOR A TIRE VALVE OR PATCH
303	FOR AN ANNULAR ARTICLE
304	.Tire or inflated inner tube
304.1	..Flaccid encasement
304.2	..Partial encasement (i.e., portion of article remains uncovered)
305	FOR AN INSTRUMENT (I.E., MEANS TO MEASURE, TEST OR INDICATE)
306	.Thermometer
307	FOR SOUND RECORDING (I.E., TEMPLET TYPE)
308	.Music roll
15	.Phonograph cylinder
309	.Phonograph disk
310	..With spindle-like retainer
311	..Album type
312	..Jacket or folder
313	...With distinct liner, cushion or sleeve
314	FOR A MUSICAL ARTICLE
14	.Violin
315.1	FOR A SPORT IMPLEMENT, EXERCISE DEVICE OR GAME
315.2	.For a golf club
315.3	..Golf bag
315.4	...Including club head protector or cover
315.5	...Including pocket for golfing accessories
315.6	...Including means for separating club shafts
315.7	...Including means for maintaining bag in upright position
315.8	...Including side wall stiffener or reinforcement
315.9	.For a ball
315.91	..Bowling ball
315.11	.For hunting or fishing equipment
316.1	FOR AN OPTICAL DEVICE OR ELEMENT (E.G., CAMERA, TELESCOPE, BINOCULARS, MICROSCOPE, LENS, FILTER, ETC.)
316.2	.Camera
316.3	.Binoculars
317	FOR A WEAPON
318	FOR A BEARING OR JOURNAL
319	FOR A MOTOR OR ENGINE
320	FOR A HOUSEHOLD APPLIANCE
321	FOR A BUILDING COMPONENT
322	.Brick, block or tile
323	.Shingle
324	..Self-sealing type
325	.Prehung door or window
326	FOR FURNITURE OR DRAPE
327	FOR SPARK PLUG
328	FOR AN ELECTRICAL COMPONENT
329	.Engaged in wall aperture
330	.Carried on wire or flaccid strip
331	.Secured lead wire
332	.Sheet-molded compartments
333	.Battery package
334	.Box with content positioner
335	FOR A VEHICLE
336	FOR SAFETY PIN
337	FOR FORKED HAIRPIN

338 FOR A FASTENER
339 .Surgical or wound type
340 .Staple, clip, belt or lacing hook
341 ..Retained in aperture of support member
342 .Alternately reversed
343 .Flaccidly or integrally (but not severably) connected
344 ..Between lamina
345 ..Secured to common flaccid member
346 ...Plane of member normal to extent of fastener
347 ...Held by aperture in member
348 FOR HOOK, HANGER, EYE, CHAIN, BUTTON, CLASP (I.E., HABERDASHERY TYPE)
349 FOR A TOOL (E.G., KNIFE, SHAVER)
350 .Magnetic holder
351 .Powered razor
352 .Razor blade
353 ..Folded blank or wrapper
354 ..Plural blades
355 ...With blade removal means
356 ....Providing for razor coaction
357 ....Mid-blade access for finger
358 .....Alternate direction feeding
359 ...Plus container for discarded blade
360 ....Follower function for discard
361 .Brush (e.g., swab, sponge)
362 ..Plural
362.1 ...Transverse bristle
362.2 ..Transverse bristle
362.3 ...Projecting handle
15.2 ..Closure supported
15.3 ...Projecting handle
362.4 ..Folded blank
363 .Body treatment (i.e., surgical, but not cosmetic)
364 ..Syringe (e.g., enema or catheter per se)
365 ...Hypodermic or needle per se
366 ....Plural
367 ..Vaccine point
368 ..Dental
369 ...Plural
370 ..Plural or diverse
371 .Desk-clerical, drafting or engineering type
553 .Eating or kitchen type
372 .Plural
373 ..Diverse
374 ...Common handle
375 ..Common handle
376 ..Wrenches
377 ...Inserted type
378 ...Socket type
379 ..Drills or taps
380 ..Needle type (e.g., sewing, knitting and including pins, toothpicks)
381 ...Phonograph "needle"
382 ...Carried in aperture of, or pierced through, retainer
383 ....Plane of retainer normal to extent of "needles"
384 FOR GREASE GUN CHARGE OR CARTRIDGE
385 FOR LIPSTICK OR REFILL CARTRIDGE
386 WITH PALLET FEATURE
595 .With handling aperture in content
596 .Specified multiple handling aperture pairs
597 .Binder wrap for content
598 .Specified handling aperture
599 .Specified pallet legs
600 .Knockdown or collapsible type
387 FOR A SOUND TAPE CARTRIDGE OR CASSETTE
388 NONSPOOLED FILAMENTARY MATERIAL (E.G., SKEIN)
49 EMBROIDERY, LACE OR RUCHING
389 FOR ROLL OR REEL
390 .Concatenated articles
391 .Plural rolls
392 ..Yarn
393 ..Material extended between rolls
394 ..Axially aligned rolls
395 .Folded blank
396 ..Having core flap
397 .Wrapped, boxed, or secured through roll core
398 .Peripheral reel cover
399 ..Slat type
400 ..Single strip encircles reel
401 ..Sheet segments
402 ..Reel flange closes cup-like container
53 .With clamp
54 ..Centrally attached
55 ..Layer retained
403 .Complementary bodies
404 ..Quick release
405 ...Central connection
406 ....Resilient retainer
407 .Tubular housing with attached end wall
408 .With content positioner
409 .With pay-out aperture
410 .Flaccid wrapper
411 .Adhesive tape
412 .Interleaved roll components
413 .With end protector
414 ..Circumferential flange type
415 ..Core secured
416 ...Opposite end protectors to same core
417 .Batt
68 FOR AN INCANDESCENT MANTLE
418 FOR A FILAMENT OR SPACE DISCHARGE BULB OR TUBE
419 .Plural
420 ..Set
421 ..Axially aligned
422 ..Allochiral arrangement
423 FOR A PLANT, FLOWER OR TREE (INCLUDES CUT OR ARTIFICIAL)
424 FOR A BOOK
425 FILE FOR PLURAL CARDS OR SHEETS
426 FOR STEMWARE
436 FOR PLURAL TETRAHEDRON RECEPTACLES
427 FOR PLURAL BEVERAGE-TYPE RECEPTACLES
428 .Strap-type handle
429 .Container exposes one side or row of retained receptacles
430 .Coaxial, abutting receptacles
431 .Noncylindrical receptacles
432 .Shrink-type wrapper
433 .Shock protection
434 .Four-sided wrapper
435 .Inwardly moving side member
528 FOR AMPULE, CAPSULE, PELLET OR GRANULE
529 .Suppository type
530 .Single unit container
531 .Structure for "press-out" of content unit
532 .With rupture means for access
534 .With indicia or indicator
534.1 .Single layer in edge-to-edge array
534.2 ..With means for lateral access
535 .Stacked within container
536 ..Limited access by component manipulation
537 ...Pocket pen type
538 .Compartmented
539 ..Single unit
533 ...With limited access via radial face of "pill box"
540 .Plural loose content
438 FOR BODY TREATMENT ARTICLE OR MATERIAL (I.E., "SURGICAL" OR THERAPEUTIC TYPE)
439 .With gas permeable cover
440 .Bandage, drape or dressing
441 ..Short strip type
63.3 .Ligatures

	FOR BODY TREATMENT ARTICLE OR MATERIAL (I.E., "SURGICAL" OR THERAPEUTIC TYPE)
63.5	.Dental
69	FOR RUBBER BAG OR TUBE (E.G., PROPHYLACTIC)
71	FOR METALLIC LEAF
442	BALE-TIE PACKAGE
443	FOR PLURAL ROD-LIKE ARTICLES
444	FOR MAGNETIC DISC ASSEMBLY
445	FOR PLURAL DISC-LIKE ARTICLES (E.G., BOTTLE CAPS)
554	PLURAL PAPER BAGS, I.E., STACK OR PACK
446	FOR CYLINDER
447	FOR TACKY MATERIAL (E.G., FLY PAPER)
448	FOR CURVED PANEL (E.G., CURVED AUTO GLASS)
449	FOR PLATE OR SHEET
555	.With access means for manual content removal, e.g., desk tray
556	..With follower
450	.Book-type cover with attached retainer
451	.Bound or clamped package
452	..Threaded clamping member
453	.Corner or edge protector
454	.Fragile or sensitive (e.g., glass mirror)
455	..Photo film or plate
456	..Specimen or photo slide
457	WITH ORNAMENTATION OR SIMULATION
458	.Simulates wearing of article
459	WITH INDICIA OR INDICATOR
460	ARTICLE ADHESIVELY SECURED TO SUPPORT
461	ARTICLE HOUSING ATTACHED TO PANEL
462	.Housing projects from panel aperture
463	..Projecting from both sides of panel
464	.Tongue and slot-type attachment
465	..Housing flanges held in parallel slots in panel
466	.Bag-type housing
467	.Movable or detachable housing closure
468	..Sliding
469	..Frangible
470	..Hinged
471	.Housing contoured to retain article
472	BOOK-TYPE COVER WITH ATTACHED ARTICLE RETAINER
473	.Diverse retainers for one or more articles
474	.Tongue and slot-type cover closure
475	.Content inspection opening in cover
476	ARTICLE IN TONGUE OR FOLD APERTURE
477	BASE WITH ATTACHED CLASPING-TYPE ARTICLE RETAINER
478	.Pliant retainer
479	..Plural loops formed from continuous strip or strand
480	.Resiliently biased rigid retainer
481	.Rigid loop-type retainer
482	.Tongue-type retainer struck from base
483	.Diverse retainers for one or more articles
484	LAMINATE SHEET PACKET
484.1	.With gas permeable cover
484.2	.Cover of plural lamina
485	ARTICLE HELD IN APERTURES OF OPPOSED WALLS
486	ARTICLE HELD IN APERTURE IN BASE
487	.Tongue and slot-type base sample connection
488	.Supplementary retainer
489	..Sheet type
490	.Peripheral aperture
601	WITH TEAR, CUT, OR BREAK MEANS
602	.Divisible or separate contanier type
602.1	..Egg carton
603	.With attached cutter or punch
604	.Tear type
605	..With tear strip
606	...Encompassing receptacle
607	...Terminating to provide hinge
608	...Delineated by perforations or score line
609	....With diverse tear means
610	....Bag or envelope type
611	....Perforated only
612	....Score only
613	...In adhesive zone
614	...Plural
615	...With additional tear means
616	..With cord, string or wire
617	...Along seam or fold
618	....Bag or envelope type
619	.....Including content lift or draw-out arrangement
620	..Along weakened line
621	...Forms reusable closure
621.1	....Gable-top container (e.g., milk carton)
621.2	.....Pour spout
621.3	....Pour spout
621.4	.....Located in a side wall
621.5	.....Spout located in top wall at the intersection of only two side walls
621.6	.....Hinged along a line not colinear with wall edge
621.7	....Plug
621.8	....Slide
622	....Tearing plural overlying flaps
623	....Encompassing receptacle
624	....Includes three walls
625	....Includes two walls
626	....Limited to one wall
627	...Encompasses receptacle
628	...With finger accommodation means
629	...Adjacent adhesive seam
630	...Tearable member overlies weakened line
631	..Along an adhesive seam
631.1	...Forms reusable closure
631.2	....Pour spout
631.3	.....Gable-top container (e.g., milk carton)
632	...Bag or envelope type
633	...With pull tab
634	..Frangible wall portion
491	FOLDED BLANK
492	.Article folded with blank
493	RETAINER ENTERS OPENING IN ARTICLE
494	FOR FOLDED SHEET-LIKE ARTICLE
495	SUPPORT PANEL HAVING ARTICLE PINNED OR WRAPPED THEREON
37	FOR POCKET OR PERSONAL USE
37.1	.For a key
37.2	..Including external element for ejecting key
37.3	..Key frictionally retained in container
37.4	..Compartmented
37.5	..Including key retainer of two elements movable relative to each other and to the container
37.6	..Including plural, serially aligned key retainers
37.7	...Removable
37.8	..Including key retainer for common mounting of plural keys
496	.Debris (e.g., ashes)
39	.Ticket case
39.1	..With means to retain stub
39.2	...Piercing pin type
39.3	..Plural stacks, coils or fan-folded strips
39.4	..With ejector mechanism
39.5	..With opening for ejection by finger
39.6	...Pull type
39.7	..Folded card or folded sheet content

	FOR POCKET OR PERSONAL USE
	.Ticket case
39.6	..Coiled strip or fan-folded strip content
1.5	WITH STRUCTURAL LOCKING MODIFICATION
497	SHRINK FILM PACKAGE (E.G., BY HEAT OR VACUUM)
499	NESTING OR VERTICAL STACKING WITHIN CONTAINER OR WITHIN RETAINER
500	.Lamp shades, globes, reflectors
501	DIFFERENT RECEPTACLES WITH MEANS FOR STACKING
502	.Cup and saucer type
503	STRUCTURAL FEATURES FOR VERTICAL STACKING, I.E., SIMILAR RECEPTACLES
504	.Having specified means for lateral stacking
505	.Having specified means for nesting instead of stacking
506	..Selectively positioned abutment (e.g., bail or handle)
507	..By selective orientation of superposed receptacles
508	.Closure structure specified for stacking
509	.Having vertical projecting element or recess for interlock
510	..Handle type
511	..Plural distinct feet or supports type
512	..Corner lug or ear type
513	.Formed from wire or rod of reticulated body fabric
514	DIFFERENT RECEPTACLES WITH STRUCTURAL FEATURES FOR NESTING
515	STRUCTURAL FEATURES FOR NESTING IDENTICAL RECEPTACLES OR CLOSURES
516	.With separate cushion or spacer means
517	.Distortable for nesting or components of "knockdown" receptacles
518	.Noncircular receptacles (e.g., trays)
519	.Having defined means to limit extent of nesting
520	..Defined means at closed end of receptacle
557	TRAY TYPE
558	.Plural lateral array
559	.With content manipulator means
560	.With content latch means
561	.With partition
562	.With aperture for article
563	..Specified shape
564	.With recess or groove for article
565	.With article retainer
566	.For jewelry
567	.For refuse
521	SHOCK PROTECTION TYPE (E.G., FREE FALL)
521.1	.For egg, fruit, or vegetable (e.g., egg carton)
521.2	..Single item
521.3	..Including parallel partitions attached to two opposing container walls by triangular webs
521.4	...Including a transverse partition folded up from the bottom wall
521.5	..Including parallel partitions which project through openings in opposed container walls
521.6	..Item supported in an opening in a retaining element
521.7	...Item supported in openings of spaced retaining elements
521.8	..Including a curved or sloping support surface for an item
521.9	...V-Shaped
522	.Inflated retainer
523	.Foam-like retainer
524	..In situ
583	.With sling or suspension means
584	.With surround or flowable or particulate-like material, e.g., "pop corn"
585	.Stack, pile or nest arrangement
586	.With distinct corner or edge protector
587	.With groove-like support
588	.With article aperture in retainer
589	..Plural apertures for plural article
590	..Plural apertures for article
591	.With yieldable retainer
592	..Configured for article
593	..Separator between articles
594	..Distinct liner
83.5	FOR SALE
524.1	WITH SPECIFIED MATERIAL FOR CONTAINER OR CONTENT
524.2	.Plural different lamina wall
524.3	.For container lining, coating or impregnate
524.9	..Plural similar lamina
524.4	.For content inhibitor or stabilizer
524.5	.For caustic or deliquescent content
524.6	.For container
524.7	..Soluble container
524.8	EVACUATED
525	WITH ARTICLE CONTENT
526	.Plural
527	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
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800	CHEWING GUM
802	SHIRRED SAUSAGE CASING
803	EMERGENCY (E.G., FLARE, FIRST AID, SURVIVAL PACK)
804	WITH MEANS TO LIFT OR DRAW OUT CONTENT
805	RUBBER BAND
806	SUSPENSION
807	TAMPER PROOF
809	X-TYPE
810	ZIPPER (I.E., RECEPTACLE SECUREMENT)
811	WATERPROOF
812	PACKAGED TOWEL
813	ADHESIVE
814	SPACE FILLER
815	FINGER OPENING
816	FLEXIBLE CLOSURE (E.G., SLIDING DESK TOP TYPE)
817	FOLLOWER
818	MAGNET
819	MATERIAL
820	SEPARABLE, STRIP-LIKE PLURAL ARTICLES
821	STACKING MEMBER
822	SPECIAL SHAPE
823	COSMETIC, TOILET, POWDER PUFF
824	TEAR APERTURES FOR ROLL, STRIP OR SHEET
825	RECOIL-TYPE RETAINER
828	MEDICINAL CONTENT
829	VACUUM, OR SUCTION, CUP ADJUNCT
830	BISCUIT PACKAGE
831	DETACHABLE COUPON

CLASS 208 MINERAL OILS: PROCESSES AND PRODUCTS

DECEMBER 1990

1	SYNTHETIC DRYING OILS
2	PHENOLIC OR TOXIC OILS
3	OXIDATION OF MINERAL OILS
4	.To form asphalts, tars or pitches
5	..In presence of soild contact material
6	..Tar, pitch, or asphalt feed
7	.With cracking
390	TAR SAND TREATMENT WITH LIQUID
391	.Inorganic (only) liquid
400	BY TREATMENT OF SOLID MINERAL, E.G., COAL LIQUEFACTION, ETC.
401	.Including a test or measurement
402	.Using electrical, magnetic or wave energy
403	.Chemical modification of solids before hydrogenation
404	.Using molten additive, e.g., heat carrier, etc.
405	..Molten catalyst
406	...Halide-containing
407	.Specified agitation or circulation in gas contact zone
408	..Gas includes hydrogen
409	..Vertical gas upflow, e.g., fluidization, etc.
410	...Using solid heat carrier
411	..Using solid heat carrier
412	.Plural hydrogenation steps
413	..Solid catalyst in at least one step
414	.With hydrogen production from water
415	.Including contact of feed with liquid produced in the process, i.e., recycle
416	..With discrete hydrogenation of recycle stream
417	..Recycle of bottoms (resid)
418	..Including contact with hydrogen gas
419	.Using specifically added catalyst during hydrogenation
420	..Dissolved or suspended-thermally-decomposab le catalyst, component or precursor
421	..Containing Group VI transition metal
422	...And Group VIII metal
423	..Containing Group VIII metal
424	.Specified procedure to improve separation of solids from liquid product
425	..Including centrifugation, filtering, flotation or vibration
426	.Including agglomeration, comminution or size-classification of solids
427	.Including burning of feed or product
428	.Including contact with extraneous additive other than hydrogen, e.g., solvent, etc.
429	..Distinct addition zones
430	..Contact with additive, followed by chemical conversion
431	..Specified hydrogen-donor solvent
432	..With specified circulation procedure in contact zone
433	..Simultaneous treatment with gaseous additive and liquid solvent
434	..Additive is petroleum or fraction from petroleum refining
435	..Additive is specified catalyst or liquid solvent or dispersant
12	COLORNG TREATMENTS (INCLUDES FLUORESCENCE)
13	TREATMENT OF REFINING SLUDGE
14	PRODUCTS AND COMPOSITIONS
15	.Fuels
16	..Gasolines
17	...Admixtures
18	.Lubricating oils
19	..Admixtures
20	.Waxes
21	..Admixtures
22	.Asphalts, tars, pitches and resins
23	..Admixtures
24	PARAFFIN WAX; TREATMENT OR RECOVERY
25	.With ureas
26	.With sorption agents
27	.Chemical treatment (refining or modification except mere solvent extraction)
28	.Separation of paraffin from oil (e.g., dewaxing)
29	..Emulsion dewaxing
30	..Separation of residual oil from wax (i.e., deoiling)
31	...With solvent
32	...Sweating
33	..Solvent dewaxing
34	...With deasphalting treatment
35	...With chilling by evaporation of solvent
36	...With nondewaxing solvent extraction of oil
37	..Chilling
38	...With filtering
39	ASPHALTS, TARS, PITCHES AND RESINS; MAKING, TREATING AND RECOVERY
40	.By chemical conversion of oil
41	.By distillation
42	..Tar feed
43	...By contact with hot gases
44	.Chemical modification of asphalt, tar, pitch or resin
45	.Solvent extraction
46	CHEMICAL CONVERSION OF HYDROCARBONS
47	.With prevention of corrosion or erosion in system
48 R	.With prevention or removal of deleterious carbon accumulations or equipment
48 Q	...Quench
48 AA	...Antifoulant additive
49	.Plural serial stages of chemical conversion
50	..Coking in at least one stage
51	...With reforming
52 R	...With both catalytic and thermal cracking
52 CT	.....Catalyst treatment to remove metal contaminants
53	...First stage is coking
54	....Second stage is cracking
55	.....Catalytic cracking
56	..Hydrogen donor diluent cyclic processes
57	..First stage is an hydrogenation (saturation)
58	..First stage is hydrocracking (includes hydro-desulfurization under cracking conditions)
59	...Hydrocracking in all stages
60	...With subsequent reforming
61	...With subsequent thermal or catalytic cracking
62	..First stage is reforming
63	...Reforming in all stages
64	....Catalyst in at least one stage
65	.....Noble metal containing catalyst
66	...Catalytic
67	..First stage is thermal or catalytic cracking
68	...With subsequent hydrocracking
69	...With subsequent reforming
70	....Catalytic reforming
71	...With subsequent polymerization
72	...Cracking in all stages
73	....Catalyst in at least one stage
74	.....Catalyst in multiple stages

	CHEMICAL CONVERSION OF HYDROCARBONS
	.Plural serial stages of chemical conversion
	..First stage is thermal or catalytic cracking
	...Cracking in all stages
75	....With cracking of total product from first stage
76	....With cracking of the first stage bottoms
77	....With cracking of the first stage intermediate fraction
78	.Plural parallel stages of chemical conversion
79	..At least one stage is reforming
80	..Split feed
81	.With contacting vapor porducts with liquid feed (i.e., product scrubbing and feed stripping)
82	..Only selected fractions of product or feed are contacted
83	..With subsequent fractionation
84	..With added material (to scrubbing-stripping stage)
85	.With preliminary treatment of feed
86	..Deasphalting
87	..Solvent extraction
88	..Refining
89	...With hydrogen
90	...With acids
91	...With solid absorbents
92	..Distillation
93	...With blending of products of distillation with each other or with converted products
94	...Plural stages of distillation
95	.With subsequent treatment of products
96	..Solvent extraction
97	..Refining
98	...With acids
99	...With solid adsorbents
100	..Separation of vapors and liquid products
101	...With absorption with liquid
102	...With additional separation of liquid products from primary separation zone
103	...With additional separation of vapor products
104	....With distillation of second stage liquid
105	....With condensation of second stage vapors
106	.Cracking
107	..Hydrogenative
108	...Catalytic
109	....Silica or silicate containing catalyst
110	.....With metal or metal oxide
111	......Group III metal or oxide
112	....Metal or metal oxide catalyst
113	..Catalytic
114	...Phosphorus, boron or nitrogen containing catalyst
115	...Halogen containing catalyst
116	....Metal halide
117	.....Group III metal halide
118	...Silica or silicate containing catalyst
119	....With metal or metal oxide
120	.....Group III metal or oxide
121	...Metal or metal oxide containing catalyst
122	....Group III metal or oxide
123	.....With Group VI metal or oxide
124	.....With Group VIII metal or oxide
125	..With nonreactive material
126	...Solids
127	....Suspension system
128	...Vapors
129	....Combustion gases
130	....Steam
131	..Soaking
132	..With heating in tubular confined stream
133	.Reforming (includes dehydrogenation, isomerization, cyclization, aromatization, alkylation, dealkylation reactions)
134	..Catalytic
135	...With Group III metal or metal oxide containing catalyst
136	....With Group VI metal or metal oxide
137	....With Group VIII metal or metal oxide
138	.....Noble metal or oxide thereof
139	......With halogen containing additive
140	......With recovery or reactivation of catalyst
141	...Feed of specific composition
142	.Hydrogenation (saturation)
143	..Catalytic
144	...Feed of specific composition
145	....With added source of hydrogen (includes hydrogen donor)
146	.Solids contacting and mixing
147	..Separate contiguous, dissimilar function, contacting zones
148	..Combined gravitating bed and suspension zones
149	..Solids of dissimilar composition
150	..Purging
151	...Plural stages
152	..Solids replenishment, or selective discard
153	..Suspension system
154	...Start-up and shut down procedures
155	...Plural zones of similar function
156	....Solids and contacting fluids are both in series
157	...Liquid feed
158	...With augmented turbulence (in addition to normal mixing in bed)
159	...With temperature regulation
160	....By solids circulation to external heat exchange and return to same zone
161	...Separation of entrained fines from effluents
162	....In presence of a liquid
163	...Fluidized dense bed
164	....Solids transferring
165	..Gravitating compact beds
166	...Liquid feeding
167	....Solids curtain type
168	...Solids-vapor disengagement
169	...Plural zones of similar function (same chamber)
170	...Size stratification prevention
171	...Uniform solids withdrawal
172	...Preheating or quenching with solids
173	...Solids transferring
174	....By pneumatic lifting
175	.....Compact type
176	..Solids moving processes
177	REFINING
178	.With reagent feed control
179	.Purifying used oil
180	..With added organic material
181	..Plural treating agents (sequential or simultaneous)
182	...One is a solid contact material
183	....With acid or alkali
184	..Distillation or degassing
185	...With gaseous treating agent
186	...With solid-liquid separation
187	.Water removal (dehydration)

	REFINING
	.Water removal (dehydration)
188	..With treating agent
189	.Sweetening
190	..With hypochlorites
191	..With copper compounds
192	...With preliminary treatment of oil
193	...With subsequent treatment of the sweet oil
194	....Separation or recovery of copper compound
195	...Copper chloride and free oxygen containing gas
196	..With peroxides
197	..With lead compounds
198	...Lead sulfide
199	...Sodium plumbite
200	....With preliminary treatment of the oil
201	....With subsequent treatment of the sweet oil
202	.....Organic treating agent
203	..With alkali metal hydroxide or carbonate
204	...With added oxygen containing organic compound
205	....Acyclic alcohol
206	...With added nitrogen containing compound
207	..Nitrogen containing compound
208 R	.Sulfur removal (free or combined sulfur)
208 M	...Using free alkali metal
209	..With hydrogen
210	...Plural stage treatments with hydrogen
211	...With preliminary treatment of feed
212	...With subsequent treatment of product
213	...With solid catalyst or absorbent
214	....With hydrogen yielding material (H donor)
215	....With heavy metal sulfide
216 R	....With group VI metal or compound
216 PP	......With specific porosity or pore volume
217	....With Group VIII metal or compound
218	..Split treatment
219	..With acids
220	...Plural stages of sulfur removal
221	...With preliminary treatment of feed
222	...With subsequent treatment of product
223	...Inorganic acid
224	....Sulfuric acid
225	....Hydrochloric acid
226	..With alkali or alkali earth metal compound (except clays)
227	...Plural stages of sulfur removal
228	...With preliminary treatment of feed
229	...With subsequent treatment of product
230	...Alkali metal compound
231	....With added oxygen containing organic compound
232	.....Alcohol containing
233	......With other organic compound
234	.....With regeneration of treating agent
235	....With regeneration of treating agent
236	..With nitrogen containing treating reagent
237	..With organic reagent
238	...Hydrocarbon containing
239	...Heavy metal soap containing
240	...Oxygen containing
241	..With free halogen or nonmetal halide containing reagent
242	..With sulfur oxides
243	..With Group VI metal or compound
244	..With Group VIII metal or compound
245	..With silicon or compound thereof
246	..With Group IB metal or compound
247	..With Group IIB metal or compound
248	..With Group III metal or compound
249	..With Group IV, V, VII metal or compound
250	..Solids contacting and mixing
251 R	.Metal contaminant removal
251 H	...Employing hydrogen
252	..With acid
253	..With metal or metal compound
254 R	.Nitrogen contaminant removal
254 H	...Employing hydrogen
255	.Gum or gum former removal
256	..With acid
257	..With metal or metal compound
258	...Alkali metal
259	...Alkali or alkali earth metal compound (except clays)
260	...Clay type or alumina
261	....Vapor phase treatment
262.1	.Halogen contaminant removal
262.5	..Polychorinated biphenyl (PCB)
263	.Organic acid or phenol contaminant removal
264	.With hydrogen
265	.With acids
266	..Sulfuric acid
267	...With fluid rotation or agitation
268	...White oil making
269	...Split treatment
270	...Plural stages of acid treatment
271	...With preliminary treatment of the oil
272	....Fractionation
273	...With subsequent treatment of the oil
274	....Organic treating agent
275	....Solid absorbent
276	...With nonwater additive
277	....Organic compound
278	....Solid contact material
279	..Phosphorus containing acid
280	..Halogen containing acid
281	...Hydrochloric acid
282	..Organic acid
283	.With alkali or alkali earth metal compound (except clays)
284	..Alkali metal compound
285	...With preliminary treatment of the oil
286	...With subsequent treatment of the oil
287	...With solid carrier
288	...With added material
289	.With nitrogen containing compound
290	.With organic compound
291	..Oxygen containing
292	.With boron, phosphorus, arsenic, antimony or bismuth containing treating agent
293	.With sulfur containing treating agent
294	.With free metal
295	.With Group IV, V, VI, VII or VIII metal compound
296	.With Group IB or IIB metal compound
297	.With Group III metal compound (except clays)
298	.With liquid treating agent (includes slurries of solids)
299	.With solid catalyst or absorbent
300	..Of particular physical shape or structure
301	..With preliminary treatment of the oil
302	..With subsequent treatment of the oil
303	..Plural treating stages
304	..Processes including downward movement of particles
305	..Solids rehabilitation
306	..Composite or plural treating agents
307	..Silicon or carbon containing treating agent
308	FRACTIONATION
309	.Deasphalting

FRACTIONATION
310 R .Adsorption
310 Z ...Zeolite adsorbent
311 .Liquid extraction with solvents
312 ..With blending of separated fractions with each other or with feed
313 ..Extractive distillation
314 ..Plural stages with different oil miscible solvents
315 ...With recycle of product of later extraction to earlier extraction stage
316 ...Difference is mere change in proportions of solvents
317 ..Counter current multistage extraction
318 ..With recycle of oil
319 ..With pressure variation
320 ..With temperature gradient in extraction zone or between extraction zones
321 ..With solvent rehabilitation
322 ..Organic solvent containing
323 ...With added solvent or solvent modifier
324 ....Inorganic
325 ...Heterocyclic
326 ....Hetero-N-containing
327 ....Furfural and derivatives
328 ...Nonoxo carbonylic
329 ....Carboxylic esters
330 ...Nitrogen-containing solvent
331 ....Amino compound
332 ...Oxo compound containing
333 ...Oxy compound
334 ....Ethers
335 ....Aromatic
336 ...Halogen containing
337 ...Hydrocarbon
338 ..Liquid sulfur dioxide
339 ..Liquid-liquid contacting
340 .Recovery of mineral oil from natural or converted gases
341 ..By absorption and vaporization
342 ...With fractional condensation prior to absorption
343 ...Indirect heat exchange between lean and rich absorbent
344 ...Plural absorption stages
345 ....At least one stage is under pressure
346 ...Absorption stage is under pressure
347 .Distillation
348 ..With nonvapor compound added prior to or during vaporization
349 ..With nonvaporization treatment of liquid condensate or residue
350 ..Rectification
351 ...C1-C4 alkane removal
352 ...Flash vaporizaton
353 ...With heat recovery by indirect heat exchange
354 ...Plural or combined with additional distillation
355 ....With product recycle between distillation zones
356 ...With added gas or vapor (e.g., steam)
357 ...Vacuum or pressure
358 ...With liquid product recycle to rectification zone
359 ..Spraying
360 ..Filming
361 ..Flash vaporization
362 ..With added gas or vapor
363 ...Steam
364 ..Plural stages of vaporization
365 ...With heat recovery by indirect heat exchange
366 ..Vacuum or pressure
367 ..With agitation of distilland
368 ..Condensatin by direct heat exchange
369 ..Volatile treatment other than condensation
370 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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950 PROCESSING OF "FISCHER-TROPSCH" CRUDE
951 SOLID FEED TREATMENT WITH A GAS OTHER THAN AIR, HYDROGEN OR STEAM
952 SOLID FEED TREATMENT UNDER SUPERCRITICAL CONDITIONS

****

DIGESTS

****

DIG 1 Automatic control
DIG 2 Molecular sieve

1	MISCELLANEOUS
2	SPECIAL APPLICATIONS
3	PRECEDENT PREPARATION OF ITEMS OR MATERIALS TO FACILITATE SEPARATION
3.1	.Sorting special items or sorting by methods or apparatus includible in subclasses 509 through 707
3.2	..Condition responsive sensor controlling preparation
3.3	..Marking or tagging item
4	.Selective differentiation
5	..Deflocculation and flocculation
7	..Form
8	..Magnetizing and demagnetizing
9	..Surface
10	TREATMENT SUBSEQUENT
11	WITH HEAT TREATMENT
12	COMBINED OPERATIONS
13	.Aqueous suspension, sifting and stratifying
14	.Mercurial adhesion, sifting and stratifying
15	.Fluid suspension and mercurial suspension or adhesion
16	..Aqueous suspension
17	.Aqueous suspension and sifting
18	.Aqueous suspension and stratifying
19	.Gaseous suspension, sifting and stratifying
20	.Gaseous suspension and stratifying
21	.Gaseous suspension and sifting
22	..Coincident
23	...With deposition
24	...Horizontal current
25	....With depositionent
26	...Inclined current
27	....With deposition
28	...Vertical current
29	....With deposition
30	..Successive
31	...With deposition
32	...Horizontal current
33	....With deposition
34	...Inclined current
35	....With deposition
36	...Vertical current
37	....With deposition
38	.Magnetic and sifting
39	.Magnetic and fluid suspension
40	.Magnetic and stratifying
41	.Mercurial suspension and mercurial adhesion
42	.Mercurial adhesion or suspension and sifting
43	.Mercurial adhesion or suspension and stratifying
44	.Sifting and stratifying
44.1	.Including sorting of special items or sorting by methods or apparatus includible in subclasses 509 through 707
44.2	..Fluid jet
44.3	..Drum-type sifter
45	ADHESION
46	.With selective differentiation
47	..Coating
48	...Mercurial (i.e., amalgamators)
49	.Coated surface or mass
50	..Mercurial
51	...Applying or removing coat
52	...Contact elements
53	....Agitators
54	....Baffles
55	....Disks and spheres
56	....Liners
57	....Percolators
58	...Receivers
59	....Rotating
60	.....Centrifugal
61	.....Cylinders, external
62	.....Cylinders, internal
63	.....Endless belt
64	....Shaking
65	....With agitating or conveying
66	.....Fluid
67	.....With rubbing
68	.....Impact
69	.....Reciprocating
70	.....Rotating
127.1	ELECTROSTATIC
127.2	.With heating of particles
127.3	.With vibrating trough charging of particles
127.4	.Free fall type particle charging
128	.Attracting and repelling
129	.Attracting
130	.Repelling
131	.Stratifying
509	SORTING SPECIAL ITEMS, AND CERTAIN METHODS AND APPARATUS (E.G., POCKET TYPE AND LIGHT RESPONSIVE SORTING, ETC.) FOR SORTING ANY ITEMS
510	.Sorting eggs or components thereof
511	..Radiant energy sensing means controls separating means
512	..By weight
513	...Sensing egg weight and controlling separating means in accordance therewith
514	...Orbiting or rotating carrier responsive to egg weight
515	....Carrier tilted by means (e.g., trip, cam, etc.) adjacent travel path when depressed to particular elevation
516	...Same eggs successively placed on means (e.g., balance beams, etc.) responsive to different weights
517	.Sorting lumber, logs, pipes, rails, or like items
518	..Condition responsive means controls separating means
519	...Relatively movable calipers closed against item
520	...Sensor responsive to item contact
521	..With endless conveyer belt
522	.Sorting bottles, ampoules, jars, drinking vessels, or like ceramic or glass containers
523	..Condition responsive means controls separating means
524	...Sensing radiant energy reflected, absorbed, emitted, or obstructed by item or adjunct (e.g., label, cap, etc.) thereof
525	....Sizing with visible light beam
526	....Detecting internal flaw (e.g., air bubble, crack, etc.) in wall of item
527	.....By means of radio frequency radiation
528	....Detecting flaw in, or absence or misplacement of, label on item
529	...Sensing position, shape, or presence of closure
530	...Sensor contacts item
531	....Gauge
532	.....Plug
533	.....Relatively movable calipers closed against item
534	.Sorting paper money
535	.Sorting cigarettes, cigars, or packages thereof
536	..Sensing radiant energy reflected, absorbed, emitted, or obstructed by item or adjunct thereof

SORTING SPECIAL ITEMS, AND CERTAIN METHODS AND APPARATUS (E.G., POCKET TYPE AND LIGHT RESPONSIVE SORTING, ETC.) FOR SORTING ANY ITEMS
.Sorting cigarettes, cigars, or packages thereof
537 ..Fluid or vacuum sensing means controls separating means
538 .Nonconveying driven means for turning item at separating or inspecting station to facilitate sorting
539 .Traveling items shifted to form line, or into end or edge alignment, to facilitate inspection or separation
540 .Traveling item turned to predetermined position
541 ..Plural orienting means
542 ..Reciprocable or pivotable orienting means
543 ..Fluid orienting means
544 ..Means orienting item moved by gravity
545 ..Driven orienting means
546 .Signalling, indicating, or display means
547 ..Indicia associated with cards, file folders, or like coded items, or with sorting means therefor (including cards per se with edge coding)
548 ..Operation of apparatus stopped
549 ..Signal lamp or audible alarm
550 ..Indicating scale
551 ..Item counter
552 .Condition responsive means controls separating means
553 ..Cards or sheets separated by rotatable suction drum
554 ..Sorting cards or sheets coded by perforations
555 ..Diverse
556 ...Diverse electrical tests
557 ...Including noncondition-responsive separating means
558 ...At single station
559 ..Means (e.g., information storing device, timer, delaying relay, etc.) delaying actuation of separating means
560 ...Mechanical
561 ....Rotatable pin carrier
562 ...Magnetic
563 ....Electrical
564 .....Electronic
565 ......Shift register
566 ....Controlled by article
567 ..Magnetic test sensing property of item
568 ...Magnetic core tested
569 ...Reading indicia
570 ...Permeability
571 ..Electrical test sensing property of item
572 ...Detecting flaw in dielectric
573 ...Electrical component tested
574 ....Resistor or capacitor
575 ....Lamp or battery
576 ..Sensing radiant energy reflected, absorbed, emitted, or obstructed by item or adjunct thereof
577 ...Infrared, visible light, or ultraviolet
578 ....Ultraviolet
579 ....Laser
580 ....Color detection
581 .....Intensity
582 ......Measuring ratio of sensed intensities
583 ....Reading indicia
584 .....On mail
585 ....Mirror or prism in optical path
586 ....Sizing
587 ....Reflected from item
588 ....Transmitted through item
589 ...X-ray or gamma ray
590 ...Sonic or supersonic energy
591 ..Sensing by applying fluid or vacuum to item
592 ..Responsive to weight of item
593 ...Detecting movement of item support with electrical sensor
594 ....Photodetector
595 ....Switch
596 ...Pusher or deflector controls movement of item on separate support
597 ..Sensing position, shape, or presence of closure or end wall on container
598 ..Sensing contour of item having no missing parts
599 ..Sorting items according to susceptibility to deform (e.g., malleability, hardness, compressibility, etc.), rupture, or vibrate
600 ..Sensor contacts item
601 ...Gauge
602 ....Relatively movable calipers closed against item
603 ....Sheet gauging
604 ....Sensor generates electrical signal
605 .....Items separated into at least three classes
606 .Separating means
607 ..Corn silk separator
608 ..Sorting items according to edge coding
609 ...Magnet attracts or repels item
610 ...Keyboard control
611 ...Cards, file folders, or like items sorted by means of necked-down notch thereon
612 ...Cards, file folders, or like items alternatively having notch or hole at particular location thereon
613 ..Sorting cards, file folders, or like items having coded sorting holes
614 ..Hand supported implements
615 ..Brush, flail, or rake used other than as one of opposed pair of gauge elements to separate, or to facilitate separation of, items
616 ...Rotatable
617 ..Item gripped between opposed elements
618 ...Rollers
619 ..Gauge enters hole in item
620 ..Gauging passage between orbiting belts
621 ..Rotating or orbiting carrier having expandable gauging passage passing items of different size at different points along carrier travel path
622 ...Belt
623 ....With gauging pocket for individual item
624 .....Pocket formed by rollers, disks, or wheels spaced transversely of belt or by contoured transverse roller, bar, or slat
625 ..Gauge with clearer other than continuous feeder
626 ...Spacing between gauge elements increased to free item
627 ...Rotatable or pivotable clearer
628 ...Stationary clearer
629 ..Diverse
630 ...Including means supporting items for manual sorting or allowing operator to control item destination

SORTING SPECIAL ITEMS, AND CERTAIN METHODS AND APPARATUS (E.G., POCKET TYPE AND LIGHT RESPONSIVE SORTING, ETC.) FOR SORTING ANY ITEMS

.Separating means

..Diverse

631 ...Including separation effected by items following different trajectories through space

632 ...Including separation effected by item of particular size passing through gauging passage between separate elements

633 ....Stationary elements

634 ...Including separation effected by item of particular size passing through gauging aperture in wall (e.g., perforated panel, etc.)

635 ...Including separation effected by different items traveling in different directions while contacting a surface

636 ..Magnet attracts or repels item

637 ..Items thrown or falling through space strike surface and only some rebound

638 ..Items separate by following different trajectories through space

639 ...Fluid jet changes trajectory of item

640 ...Items thrown or falling through space strike surface and rebound with different trajectories

641 ...Takeoff ramp adjustable to different angular positions relative to horizontal plane

642 ...Thrower

643 ..Suction

644 ..Fluid jet

645 ..Sorting items by weight

646 ...Orbiting or rotating carrier responsive to item weight

647 ....Counterbalance on balance beam moved until beam tilts to item discharging position

648 ....Carrier tilted by means (e.g., trip, cam, etc.) adjacent travel path when depressed to particular elevation

649 ...Same items successively placed on means (e.g., balance beams, etc.) responsive to different weights

650 ...Item support swings about fixed horizontal axis to discharge at different vertically spaced points

651 ..Pusher moving item on separate surface

652 ...Pivotable

653 ...Reciprocable

654 ...Rotatable

655 ..Gravity-type conveyer (e.g., chute, etc.) movable between different discharge positions

656 ..Movement of items along different paths controlled by passive deflector

657 ...Deflector movable into and out of path of item

658 ...Deflector spaced above conveying means to pass item of particular size thereunder

659 ..Sorting items by size

660 ...Item of particular size passed through gauging passage between separate elements

661 ....Gauging passage between stationary element (e.g., bar, slat, etc.) and orbiting belt

662 ....Gauging passage between stationary element (e.g., bar, slat, etc.) and roller

663 ....Gauging passage between orbiting belt and roller or wheel

664 ....Gauging passage between elements of rotating cage

665 ....Gauging passage between elements of orbiting belt

666 ....Item moves along curved gauging passage

667 ....Gauging passage between rotatable elements

668 .....Element adjustable to change width of gauging passage

669 .....Helical roller

670 .....Items move longitudinally of gauging passage varying in width along length thereof

671 .....Spindle or roller having projecting elements spaced circumferentially thereof

672 .....Spindle or roller having axially spaced, flat-sided circumferential elements (e.g., flanges, disks, wheels, etc.) projecting therefrom

673 .....Cylindrical rollers

674 ....Gauging passage between moving elements (e.g., vibrating bars, slats, etc.)

675 ....Gauging passage between stationary elements (e.g., bars, slats, etc.)

676 .....Element adjustable to change width of gauging passage

677 .....Items move longitudinally of elongate elements

678 ......With means moving, or regulating movement of, items along elements

679 ......Width of gauging passage varies

680 ...Item of particular size passed through gauging aperture in wall (e.g., perforated panel, etc.)

681 ....Aperture in orbiting belt

682 ....Aperture in chute or trough

683 ....Aperture in circumferential wall of hollow body (e.g., tube, etc.) rotatable about longitudinal axis thereof

684 ...Item of particular size or shape enters pocket

685 ....On orbiting belt

686 ....On exterior of drumlike body (e.g., roller, etc.) rotatable about longitudinal axis thereof

687 ....On interior of hollow drumlike body (e.g., tube, etc.) rotatable about longitudinal axis thereof

688 ..Means pierces, or enters preformed hole in, item

689 ..Items separate by traveling in different directions while contacting drumlike body (e.g., roller, hollow cylinder, etc.) turning about longitudinal axis thereof

690 ...Items travel circumferentially and longitudinally of turning axis

691 ..Items separate by traveling in different directions while contacting same inclined surface of moving support

692 ...Items contact inclined reach of orbiting belt

693 ....Item separating reach inclined only in direction of belt movement

694 ...Translating support

SORTING SPECIAL ITEMS, AND CERTAIN METHODS AND APPARATUS (E.G., POCKET TYPE AND LIGHT RESPONSIVE SORTING, ETC.) FOR SORTING ANY ITEMS
.Separating means
695 ..Items separate by traveling in different directions while contacting same horizontal surface of moving support
696 ..Items separate by traveling in different directions while contacting same inclined surface of static support
697 ...Helical ramp
698 ..Means movable between horizontal item-supporting position and gravity discharge position
699 ..Sorting items according to susceptibility to deform (e.g., malleability, hardness, compressibility, etc.), rupture, or vibrate
700 ..Sorting items according to roughness or adhesiveness
701 ..Item turned while traveling
702 ..Manual sorting
703 ...Item supported on table or chute
704 ....Rotated about vertical axis
705 ...Item supported on orbiting or rotating carrier
706 ..Specific compartment of receptacle brought into alignment with feed means by operator
707 ..Items separated by tipping, rolling, or sliding off support under force of gravity
132 FLUID SUSPENSION
133 .Gaseous
134 ..Horizontal current
135 ...With deposition
136 ..Inclined current
137 ...With deposition
138 ..Vertical current
139.1 ...With deposition
139.2 ....With centrifugal feed distribution
140 ...Expanding
141 ....With deposition
142 ..Grading deposition
143 ...With deflection
144 ....Vortical
145 ..Impetus and countercurrent
146 ..Feeding
147 ...Conveyer
148 ....Centrifugal
149 ....Chute
150 ....Disk or cone
151 ....Stepped plane
152 ...Cylinder internal
153 ...Tossers
154 ..Current control
155 .Liquid
156 ..Horizontal current
157 ..Inclined current
158 ..Vertical current
159 ...With agitation
160 ...Expanding
161 ....With agitation
162 ..Floating
163 ...Buoyant material
....Bubbles
164 .....Processes
165 ......Preferential
166 ......With modifying agents
167 ....Preferential
168 .....Apparatus
169 ......Agitating
170 ......Pneumatic
171 ....Oil
172 ...Gravity liquid
172.5 ....Suspension
173 ....Water or aqueous solution
174 ....Metallic (i.e., amalgamators)
175 .....Processes
176 ......With chemical treatment
177 ....Bath
178 ....Ore
179 ......With electric treatment
180 ....Bath
181 ....Ore
182 ......With heat treatment
.....Feeding and distributing
183 ......Submerging
184 ....Conveyer
185 ....Vacuum
186 ....With agitation
187 ....Baffles
188 ....Agitators
189 ......Surface
190 ....Impact
191 .....With rubbing
192 .....Feeding and discharging
193 ......Bath
194 .....Receptacles
195 ......Reciprocating
196 ....Chutes and tables
197 ....With agitators
198 ......Rotating
199 ....Centrifugal
200 ....With agitators
201 ......Stationary
202 ....Chutes and tables
203 ....With agitators
204 ....Reciprocating
205 ....Rotating
206 .....Riffles and traps
207 ...Surface film tension
208 ..Grading deposition
209 ...Chronometric
210 ...With deflection
211 ...Vortical
MAGNETIC
212 .Diamagnetic
213 .Paramagnetic
214 ..Processes
215 ..Special application
216 ..Multiple type
217 ..Reciprocating magnets
..Rotating magnets
218 ...Belt
219 ...Cylinder external
220 ....Vertical axis
221 ...Cylinder internal
222 ...Disk
223.1 ..Stationary magnets
223.2 ...Cylinder external
224 ...Cylinder internal
225 ..With agitating or conveying
226 ...Magnetic
227 ....Traveling field
228 ..Discharging
229 ...Doffers
230 ....Magnetic
231 ..Feeding
232 ...Fluid suspension
233 SIFTING
234 .Combined type
235 .Special applications
236 ..Distributing
237 ..Material testing
238 .With heating or cooling
239 .With weighting
240 .Feeding and discharging
241 ..Conveyers
242 ..Interconnected
243 .Feeding
244 ..Hoppers

SIFTING
.Feeding
..Hoppers
245 ...With agitators or conveyers
246 ...Cut-offs and valves
247 ..Conveyers
248 ...Receptacles
249 ....Ash pan
250 ...Fluid
251 ..Reversible
252 ..Sifter movement
253 ..Selective
254 .Distributers or spreaders
255 .Discharging
256 ..Conveyers and valves
257 ..Conveyers
258 ..Valves
259 ..Receptacles
260 ..Tilting
261 .Conveying
262 ..Material forcing
263 ..Material positioning
264 ...Guides
265 ....Imperforate sections
266 ....Superposed
267 ..Retarders
268 .With liquid treatment
269 ..Reciprocating sifters
..Rotating sifters
270 ...Drum
271 ...Disk
272 ...Endless belt
273 ..Stationary sifters
274 .Concave and convex sifters
275 ..Reciprocating
276 ...With agitators
277 ....Reciprocating
278 ....Rotating
279 ..Rotating
280 ...With agitators
281 ..Stationary
282 ...With reciprocating agitators
283 ...With rotating agitators
.Drum sifters
..Horizontal and inclined
284 ...Feeding or dischargingd
285 ....Peripheral feed
286 .....Inlets
287 ...Reciprocating and rotating
288 ...Rotating
289 ....Multiple
290 .....Concentric
291 ......Nested
292 .....Superposed
293 ....With agitators and conveyers
294 .....Lifters and deflectors
295 .....Pneumatic
296 .....Rotating
297 ......Attached
298 ......Lifters
299 ....Lifters and beaters
300 ...Stationary
..Vertical
301 ...Reciprocating and rotating
302 ...Reciprocating
303 ...Rotating
304 ....With agitators
305 ...Stationary
306 ....With agitators
307 .Endless belt sifters
308 ..With agitators
.Plane sifters
..Horizontal and inclined
309 ...Reciprocating and rotating
...Reciprocating
310 ....Distorting
311 ....Multiple
312 .....With pneumatic treatment
313 .....Alined
314 .....Stepped
315 .....Superposed
316 ......With intermediate conveyers
317 ......With dischargers
318 ......With pneumatic treatment
319 ......Attaching and adjusting
320 ....With agitators and conveyers
321 .....Pneumatic
322 .....Reciprocating
323 ......Unattached
324 .....Rotating
325 ....With horizontal and vertical shake
326 .....Gyratory
327 .....Lateral
328 ......With impact
329 .....Longitudinal
330 ......With impact
....With horizontal shake
331 .....Longitudinal and transverse
332 ......Gyratory
333 .....Lateral
334 ......Impactive
335 ......Pivoted
336 ....With impact
337 ......Sliding
338 ....With impact
339 ......Swinging
340 ....With impact
341 .....Longitudinal
342 ......Sliding
343 ....With impact
344 ......Swinging
345 ....With impact
346 ....With vertical shake
347 .....Impactive
348 .....Pivoted
349 ......With impact
350 ...Rotating
351 ....With agitators
352 ...Stationary
353 ....Multiple
354 .....Stepped
355 .....Superposed
356 ......Zigzag
....With agitators
357 .....Reciprocating
358 .....Rotating
359 ..Vertical
360 ...Reciprocating
361 ...Rotating
362 .Spiral sifters
363 .Elements
364 ..Actuating
365.1 ...Reciprocating
365.2 ....Cam and linkage
365.3 ....With cushioning
365.4 ....Differential motion
366 ....Gyrating
366.5 .....Unbalanced weight
367 ....Unbalanced weight
368 ....Magnetic
369 ...Rotating
370 ..Bins and casings
371 ...Adapters
372 ...Closures
373 ...Compartments and receptacles
374 ...Household
375 ....Chutes
376 ....Hods
377 ....Stoves and furnaces
378 ...Venting
379 ..Clearers
380 ...Fluid
381 ...Jarring
382 ....Knockers
383 ....Whips
384 ...Pressers

	SIFTING
	.Elements
	..Clearers
385	...Wipers
386	....Brush
387	....Reciprocating
388	.....Brush
389	....Rotating
390	.....Brush
391	..Mesh closures
392	..Dress
393	...Bars
394	....Adjusting
395	....Attaching
396	....Reciprocating
397	...Perforated sheet
398	....Adjusting
399	....Attaching
400	...Cords and wires
401	...Woven
402	....Adjusting
403	....Attaching
	..Frames
404	...Adjusting
405	...Attaching
406	...Drum
407	....Sectional
408	...Plane
409	..Supports
410	...Axial
411	...Rim
412	...Framework
413	....Adjustable
414	....Knockdown
415	...Hangers and standards
416	...Levelers
417	...Manual
418	....Scoop
419	....Shovel
420	...Portable
421	....Vehicles
422	STRATIFIERS
	.With liquid treatment
	..Movable bed
	...Permeable
423	....Constant current
424	.....Divergent or opposite travel
425	....Pulsating current
426	.....Divergent or opposite travel
427	.....Parallel travel
428	...Belt
429	....Divergent travel
430	....Opposite travel
431	....Reciprocating support
432	.....Divergent travel
433	.....Opposite travel
	...Chutes and tables
434	....Spiral
435	....Reciprocating-rotating
436	.....Divergent or opposite travel
437	....Reciprocating
438	.....Annular
439	......Divergent or opposite travel
440	.....With agitators
441	.....Divergent travel
442	.....Opposite travel
443	.....Parallel travel
444	....Rotating
	..Receptacles
445	...Reciprocating-rotating
446	...Reciprocating
447	....Manual support
448	....With agitators
449	.....Reciprocating
450	.....Rotating
	...Rotating
451	....Horizontal or inclined axis
452	.....With agitators or conveyers
453	....Vertical axis
	..Stationary bed
	...Permeable
454	....Constant current
455	....Pulsating current
456	.....Divergent or opposite travel
457	.....Parallel travel
458	....Chutes and tables
459	....Annular, circular or spiral
460	....With divergent or opposite travel
	...Receptacles
461	....With agitators or conveyers
462	.....Reciprocating
463	.....Rotating
464	......Horizontal or inclined axis
465	......Vertical axis
	.With pneumatic treatment
	..Movable bed
	...Permeable
466	....Constant current
467	.....Divergent or opposite travel
468	....Pulsating current
469	.....Divergent or opposite travel
470	...Belts
471	...Chutes, tables, and receptacles
472	....Divergent or opposite travel
473	...Drums
	..Stationary bed
	...Permeable
474	....With constant current
475	....With pulsating current
476	.....Divergent or opposite travel
477	..Chutes, tables, and receptacles
478	.Magnetic
	.Movable bed
479	..Chutes, tables, and receptacles
480	...Divergent travel
481	...Opposite travel
482	..Drums
483	.Stationary bed
484	.Elements
485	..Beds
486	...Permeable
487	..Cleaners
488	..Feeding and discharging
489	...Automatic control
490	..Discharging
491	...Automatic control
492	...Conveyers
493	...Dividers and skimmers
494	...Exits
495	....With positively operated dischargers
496	....Automatic control
497	..Feeding
498	...Distributing
499	...Regulating
	..Fluid supply
500	...Liquid
501	....Circuit
502	...Pneumatic
503	..Operating mechanism
504	...Reciprocating
505	...Rotating
506	..Riffles
507	...Overhung
508	..Supports
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	SORTING FLAT-TYPE MAIL
901	FROTH FLOTATION; COPPER
902	FROTH FLOTATION; PHOSPHATE
903	FEEDER CONVEYER HAVING OPPOSED GRIPPERS
904	FEEDER CONVEYER HOLDING ITEM BY MAGNETIC ATTRACTION
905	FEEDER CONVEYER HOLDING ITEM BY SUCTION
906	PNEUMATIC OR LIQUID STREAM FEEDING ITEM
907	MAGNETIC FEEDER

908	ITEM FED BY FREE FALL
909	ITEM HOLDING FEED MAGAZINE INSERTABLE IN SORTING APPARATUS
910	FEED HOPPER
911	FEED MEANS SUPPORTING OR GUIDING ITEM MOVING UNDER INFLUENCE OF GRAVITY
912	ENDLESS FEED CONVEYER WITH MEANS FOR HOLDING EACH ITEM INDIVIDUALLY
913	SCREW FEED CONVEYER
914	DIVERSE SEQUENTIAL FEEDING STEPS
915	CENTRIFUGAL FEEDER
916	RECIPROCATING PUSHER FEEDING ITEM
917	ENDLESS BELT PUSHER FEEDING ITEM
918	SWINGING OR ROTATING PUSHER FEEDING ITEM
919	ROTARY FEED CONVEYER
920	VIBRATORY FEED CONVEYER
921	RECIPROCATING OR OSCILLATING FEED CONVEYER
922	MISCELLANEOUS FEED CONVEYERS
923	FEED TROUGH INCLUDING AT LEAST ONE ENDLESS CONVEYER
924	GRAVITY CONVEYER MOVING ITEM FROM SEPARATING STATION
925	DRIVEN OR FLUID CONVEYER MOVING ITEM FROM SEPARATING STATION
926	SILVERWARE SORTER
927	COP SORTER
928	CONTAINER CLOSURE SORTER
929	FASTENER SORTER
930	MUNICIPAL SOLID WASTE SORTING
931	MATERIALS OF CONSTRUCTION
932	FLUID APPLIED TO ITEMS
933	ACCUMULATOR RECEIVING SEPARATED ITEM
934	MOVING ITEMS TO SORTING MEANS IN SPACED RELATION LENGTHWISE OF FEED PATH
935	AMBULANT
936	PLURAL ITEMS TESTED AS GROUP
937	LAUNDRY SORTING
938	ILLUMINATING MEANS FACILITATING VISUAL INSPECTION
939	VIDEO SCANNING
940	NONCONDITION-RESPONSIVE SORTING BY CONTOUR
941	ITEM CARRYING BRIDGE RAISABLE TO EXPOSE DISCHARGE OPENING
942	OPERATOR SELECTS DESTINATION OF ITEM

600 PROCESSES
601 .Treatment by living organism
602 ..Including plant or animal of higher order
603 ..Including collecting or storing gas (e.g., fuel, carbon monoxide, etc.)
604 ...And reusing oxidant
605 ..Anaerobically, with subsequently aerobically treating liquid
606 ..Adding enzyme or releasing same by treating microorganism
607 ..Dividing, treating, and recombining liquid
608 ..Regulating floating constituent
609 ..Including dewatering sludge
610 ..Including adding ancillary growth medium for microorganism
611 ...For or with specific microorganism
612 ..And regulating temperature during biological step
613 ...Digesting sludge
614 ..Controlling process in response to stream constituent or reactant concentration
615 ..Utilizing contact surfaces supporting microorganism (e.g., trickling filter, etc.)
616 ...Particulate media
617 ....In bed form
618 .....And rehabilitating or regenerating same
619 ...Rotating contactor
620 ..Aerobic treatment
621 ...Recirculating to prior step
622 ....Of separated liquid
623 ....Of sludge or separated solid
624 .....And returning to or withdrawing from diverse treating zones
625 .....Treating outside mainstream
626 .....To mainstream oxygenation (e.g., activated sludge, etc.)
627 ......Utilizing specific oxidant, other than air alone (e.g., oxygen-enriched air, ozone, peroxide, etc.)
628 ......Utilizing mechanical aeration means
629 ...And internally circulating the liquid
630 ...And anaerobic treatment
631 ..And additional treating agent other than mere mechanical manipulation (e.g., chemical, sorption, etc.)
632 .Treating by enzyme
633 .Extracting utilizing solid solute
634 .Liquid/liquid solvent or colloidal extraction or diffusing or passing through septum selective as to material of a component of liquid; such diffusing or passing being effected by other than only an ion exchange or sorption process
635 ..Liquid/liquid or gel type (i.e., jellylike) chromatography
636 ..Including cleaning or sterilizing of apparatus
637 ..Including regulating pressure to control constituent gradient at membrane or to prevent rupture of membrane
638 ..Including ion exchange or other chemical reaction
639 ..Including prior use of additive (e.g., changing pH, etc.)
640 ..Passing through membrane in vapor phase
641 ..Utilizing plural diverse membranes
642 ..Extracting water from brine utilizing liquid/liquid solvent or colloidal extraction
643 ..Utilizing liquid membrane (e.g., emulsion) in liquid/liquid solvent or colloidal extraction
644 ..Diffusing or passing through septum selective as to material of a component in liquid/liquid solvent or colloidal extraction
645 ...Biological fluid (e.g., blood, urine, etc.)
646 ....Hemodialysis
647 .....Maintaining critical concentration(s)
648 ...Including regenerating or rehabilitating the extracting liquid in liquid/liquid solvent or colloidal extraction
649 ..Diffusing or passing through septum selective as to material of a component of liquid
650 ...Filtering through membrane (e.g., ultrafiltration)
651 ....Removing specified material
652 ....Hyperfiltration (e.g., reverse osmosis, etc.)
653 .....Utilizing specified membrane material
654 ......Synthetic resin
655 ......Cellulosic
656 .Chromatography
657 ..Utilizing rotating column
658 ..Utilizing paper or thin layer plate
659 ..Including liquid flow diversion
660 .Ion exchange or selective sorption
661 ..By passing through suspended bed
662 ..And liquid testing or volume measuring
663 ..Including diverse separating or treating of liquid
664 ...By distilling or degassing
665 ...By making an insoluble substance or accreting suspended constituents
666 ....Utilizing organic agent
667 ....Utilizing aluminum, calcium, or iron containing agent
668 ...By chemically modifying or inhibiting dispersed constituent
669 ...Prior to ion exchange or sorption
670 ..Including rehabilitating or regenerating exchange material or sorbent
671 ...Of oil sorbent material
672 ...Fractional, selective, or partial type
673 ...Utilizing gas, water, or chemical oxidizing or reducing agent
674 ...Utilizing organic regenerant
675 ...Rehabilitating or regenerating in diverse zone or chamber
676 ....Continuous cyclic process
677 ...Using conserved or recirculated fluid
678 ...Including liquid flow direction change
679 ..Utilizing exchange or sorbent material associated with inert material
680 ...Including oil sorbent
681 ..Removing ions
682 ...Radioactive
683 ...Anions
684 ....Metal complexed (e.g., chromate, ferricyanide, chlorplatinate, etc.)
685 ....Including cation
686 .....Utilizing mixed bed or amphoteric material
687 ...Calcium or magnesium (e.g., hardness, water softening, etc.)

PROCESSES
.Ion exchange or selective sorption
..Removing ions
688 ...Heavy metal
689 ..Sorbing water from diverse liquid
690 ..Sorbing organic constituent
691 ...From aqueous material
692 ....Utilizing synthetic resin
693 .....Oil removed
694 ....Utilizing activated carbon
695 .Using magnetic force
696 .Preventing, decreasing, or delaying precipitation, coagulation or flocculation
697 ..Utilizing inorganic phosphorus agent
698 ..Utilizing organic agent
699 ...Phosphorus containing
700 ....Nitrogen containing
701 ...Acrylic polymer
702 .Making an insoluble substance or accreting suspended constituents
703 ..Effecting flotation
704 ...Including chemical addition (with or without bouyancy gas)
705 ....Chemically specified precipitant, coagulant, or flocculant
706 .....And significant characteristic of the bouyancy gas, other than mere addition of same
707 ......Generating gas in situ
708 ..Including emulsion breaking
709 ..Controlling process in response to stream condition
710 ..Treating the insoluble substance
711 ...For recovery of a treating agent
712 ..Including recycling
713 ...Of separated solids
714 ..Seeding
715 ...Utilizing sludge or floc blanket
716 ..Including step of manufacturing inorganic treating agent
717 ...In situ
718 ..Including degassing
719 ..Including chemical reduction
720 ...Of chromium material
721 ..Including oxidation
722 ...Of iron or manganese material
723 ..Utilizing precipitant, flocculant, or coagulant, each with accelerator or with each other or plural precipitants, flocculants, or coagulants
724 ...Regulating pH
725 ....Utilizing organic precipitant
726 ...Sequential introduction
727 ....Including organic agent
728 ...Including organic agent
729 ..Utilizing organic precipitant
730 ...From natural source or chemical modification thereof
731 ....Starch
732 ...Synthetic polymer
733 ....Acrylic
734 .....Nitrogen containing (e.g., amine, azo, etc.)
735 ....Nitrogen containing (e.g., amine, azo, etc.)
736 .....Derived from alkyl halide or epihalophydrin reactant
737 ..Including temperature change
738 ..Including agitation
739 .Including controlling process in response to a sensed condition
740 ..Density or specific gravity sensing
741 ..Pressure sensing
742 ..Temperature sensing
743 ..pH sensing
744 ..Level sensing
745 ..Turbidity or optically sensing
746 ..Electrical property sensing
747 .Including geographic feature
748 .Utilizing electrical or wave energy (directly applied to liquid or material being treated)
749 .Chemical treatment
750 ..Including degassing
751 ..For disposal as a solid product
752 ..Plural spaced feedings
753 ..Utilizing halogen or halogen containing material
754 ...Chlorine or bromine containing
755 ....Organic
756 ....Hypochlorite
757 ..By chemical reduction
758 ..By oxidation
759 ...Utilizing peroxy compound (e.g., hydrogen peroxide, peracid, etc.)
760 ...Utilizing ozone
761 ...Liquid phase high temperature and pressure (e.g., "wet air", etc.)
762 ....Catalytic
763 ...Catalytic
764 ..Destroying microorganisms
765 ..Including liquid recirculation
766 ..Including temperature change
767 .Separating
768 ..Including treating separated solids
769 ...Destroying cake or solid component
770 ...Including drying (e.g., by squeezing or heating, etc.)
771 ....By gas contact
772 ...Washing with a fluid other than the prefilt
773 ..Including preliminary conversion to liquid state
774 ..Including temperature change
775 ...Thermal diffusion
776 ..Skimming
777 ..Including precoating filter medium with filter aid
778 ...With or by addition to prefilt
779 ..Discharging residue to prefilt
780 ..Including movement of filter during filtration
781 ...Centrifugally extracting
782 ....Blood
783 ...Rotating belt
784 ...Rotating drum
785 ...Cleaning filter utilizing wave energy (e.g., vibrating, pulsating, etc.)
786 ...Of particulate bed (e.g., fluidized or moving bed, etc.)
787 ..Cyclonic, or centrifugal (e.g., whirling or helical motion or by vortex, etc.)
788 ...Introducing liquid tangentially
789 ...Isolating layer
790 ..Dividing and recombining
791 ..Rehabilitating or regenerating filter medium
792 ...Particulate bed
793 ....Reverse flow
794 .....Including addition of diverse fluid
795 ......Expanded bed
796 ....Includng mechanical agitation
797 ...By diverse fluid
798 ....Reverse flow
799 ..Filtering immiscible liquids
800 ..Utilizing gravitational force
801 ...Including change of mainstream flow direction
802 ....Utilizing parallel separation passages
803 ...Including specified feature of settled solids removal
804 ...And additional diverse separation

	PROCESSES
	.Separating
805	..And recirculating liquid
806	..Plural separating
807	..Utilizing particulate bed
808	..Including specified pressure change
85	WITH ALARM, INDICATOR, REGISTER, RECORDER, SIGNAL OR INSPECTION MEANS
86	.Material level or thickness responsive
87	.Responsive to fluid flow
88	..Meter-controlled cyclic systems
89	...With time control
90	.Fluid pressure responsive
91	.Position or extent of motion
92	.Test valve
93	.In effluent conduit
94	.Transparent
95	..Sight glass
96.1	CONSTITUENT MIXTURE VARIATION RESPONSIVE
96.2	.With membrane
97	FLOW, FLUID PRESSURE OR MATERIAL LEVEL, RESPONSIVE
98	.Fluid current controlled cyclic system
99	.Prefilt deverting to drain by prefilt accumulation
100	.Flow cut-off requiring reset
101	.Proportionate feed means
102	.Programming plural units
103	.Diverse sensing means
104	..Responsive to material level
105	..With control for auxiliary liquid inlet
106	.Filter cleaning
107	..Rotary movement of filter or mechanical cleaner
108	..Backwash or blowback
109	.Discharge of treated material
110	..With separator inlet control
111	..Responsive to prefilt accumulation or filter clogging
112	..Heavier constituent
113	...By weight of solids
114	...By treated liquid accumulation
115	...With lighter constituent outlet control
116	..Permitted by filtrate accumulation
117	..Check valve controlled
118	...Non-closing, e.g., sand valve
119	...Float type
120	.Vent control
121	.Float
122	..Controls movable separator
123	..Controls valve
124	...Controls flow between two separators
125	...Separator between float and valve
126	...Float in separate rehabilitating fluid tank
127	...Additional fluid inlet control
128	...Float in receptacle other than that of separator
129	....In flow between inlet and separator
130	.Fluid pressure responsive by-pass
131	..By movement of separation medium
132	..With additional separation or treating means
133	..In inlet and outlet closure header
134	.Plural elements controlled
135	..Including manually controlled element
136	.Check valve
137	.Maintaining stream pressure or flow
138	WITH TIME CONTROL
139	.Of additional fluid
140	..Preparation for treating operation
141	WITH PROGRAM ACTUATOR
142	.Plural treating units or sections sequentially controlled
143	AUTOMATIC CONTROL
144	.Responsive to vibration or unbalance
145	.Responsive to rotation
146	..Controlled cover latch
147	..Controlled discharge means
148	.Container movement operated
149	.Thermal
150	WITH GAS-LIQUID SURFACE CONTACT MEANS
151	.With separator
153	STRUCTURAL INSTALLATION
154	.Flume stream type
155	..Plural or diverse screens
156	..Fluid stream or residue operated
157	...Revolving cylindrical strainer
158	..With cleaner for movable strainer
159	..With cleaner and means to remove residue therefrom
160	..Endless belt strainer
161	..Revolving strainer
162	..Fixed strainer
163	.Grated inlet surface drain
164	..Flat grating at surface level
165	...With subsurface weep means
166	..Concentric guard ring or rib
167	.Closed circulating systems
168	..Lubrication
169	..Aquarium or swimming pool
170	.Geographic
171	.Machinery
172	.Ancillary to storage tank
173	COMMINUTING
174	.Cylindrical strainer
175	WITH HEATER OR HEAT EXCHANGER
176	.Thermal diffusion
177	.With treating fluid addition
178	..With mechanical agitator or movable separator
179	.With mechanical agitator or movable separator
180	.Vapor or gas removal
181	.Flow line connected in series with distinct separator
182	.Diverse separators
183	..Common casing coaxial with heater
184	.For filter
185	..Imbedded or between filter media
186	..External of casing
187	.Within gravitational separator
188	WITH GAS SEPARATOR
189	PLURAL CHAMBERS WITH MOVEMENT OF GRANULES THEREBETWEEN
190	WITH EXTERNAL SUPPLY MEANS FOR REGENERATING MEDIUM, E.G., WATER SOFTENING SYSTEM
191	.With pump, injector or siphon
192	WITH PRELIMINARY CHEMICAL MANUFACTURE
193	WITH PRECOAT ADDING OR APPLYING MEANS
194	RECIRCULATION
195.1	.Serially connected distinct treating or storage units
195.2	..With semipermeable membrane, e.g., dialyzer, etc.
195.3	..With sediment recycle means directly to main stream
195.4	...Means is baffle slot
196	.Of filtrate
197	.From bottom of separator
198.1	WITH MEANS TO ADD TREATING MATERIAL
198.2	.Chromatography
198.3	..Thin layer, e.g., plate, etc.
199	.Spaced along flow path
200	.Plural distinct separators
201	..Serially connected
202	...Diverse type
203	..Filters
204	...Sectional chamber press type
205	.With distinct reactor tank, trough or compartment
206	..Chemical holder in series with separator

	WITH MEANS TO ADD TREATING MATERIAL
	.With distinct reactor tank, trough or compartment
207	..Within gravitational separator
208	...With mechanical agitator
209	.Directly applied to separator
210	..To interior of moving filter, e.g., drum
211	...Through separator supporting rotary shaft
212	...With stationary casing closure feature
213	...With coaxial rotary impeller or distributor
214	...With stationary mount for movable distributor
215	...With effluent dividing means
216	..Moving filter medium
217	...Drum
218	..Gas removed from closed tank
219	..With mechanical agitator
220	..Submerged fluid inlet
221.1	...With outlet at surface, e.g., froth flotation, etc.
221.2	....And gas injecting means other than by mechanical agitation
222	MAGNETIC
223	.With additional separator
224	SECTIONAL CHAMBER PRESS TYPE
225	.With residue removal or liquid agitation
226	.With porous filler
227	.Medium clamped in joint
228	..With spacing frame
229	..Imperforate base recess in plate
230	.With repair or assembling means
231	.Plates or frames
232	WITH REPAIR OR ASSEMBLING MEANS
233	.Piercing or closure knock out means
234	.Removable treatment part with normally disabled flow controller
235	.Placement of container opens flow controller
236	.Sliding or rolling on guide means
237	.Hoist or handle means
238	..Hand manipulable
239	CONVERTIBLE
240	.Filter having selectively usable flow connector means
241	WITH MOVABLE SUPPORT
242.1	.Float
242.2	..With aerating means
242.3	..With oil water skimmer
242.4	..With oil water sorption means
243	ELECTRICAL INSULATING OR ELECTRICITY DISCHARGING
244	PORTABLE RECEPTACLE WITH HOOD OR CLOSURE
245	.Attached variable flow controller
246	.Limited opening cover
247	FILTRATE SPLASH PLATE AND/OR DEFLECTOR
248	WITH DRIP, OVERFLOW OR CONTENT DRAINING FEATURE
249	BRACKET OR LEG SUPPORT FOR STATIC SEPARATOR ASSEMBLY
250	.Leg
251	COMBINED
252	SERIALLY CONNECTED DISTINCT TREATING WITH OR WITHOUT STORAGE UNITS
253	.Parallel
254	.With by-pass
255	.Cascade
256	.One unit inside another
257.1	.With storage unit
257.2	..Having membrane
258	.With pump, gas pressure or vacuum source
259	.Diverse
260	..Including multiple operation unit
261	..One unit supports another
262	..On different levels
263	PARTICULATE MATERIAL TYPE SEPARATOR, E.G., ION EXCHANGE OR SAND BED
264	.Selective units or compartments
265	.With gravitational separator
266	.With spaced non-particulate separating means
267	.Trunnion mounted casing
268	.Gravity flow of particles type
269	.With rehabilitation means
270	..Movable means for particle pickup and redeposit
271	..Surface traversing type
272	...Rotating on stationary axis
273	...Moving fluid distributor
274	..Including means to apply gas to bed
275	..Backwash or blowback means
276	...With mechanical agitator or residue remover
277	...Flow controller external of closed casing
278	....Multi-way valve unit
279	...With embedded fluid distributor
280	..With agitator
281	..With access opening to normally closed casing
282	.Removable cartridge or hand-manipulated container
283	.Pervious divider between and contacting beds
284	.Spaced beds
285	.Embedded baffle
286	..Vertical
287	.Within flow line or flow line connected closed casing
288	..Conduit through bed, inlet and outlet at same end of casing
289	..With particular liquid receiving means or foraminous bed retainer
290	.With multi-layer beds
291	.Particular liquid receiving means or foraminous bed retainer
292	..Hood or top protector type
293	..Floor type, e.g., false bottom
294	DIVERSE DISTINCT SEPARATORS
295	.Including a filter
296	..Including liquid as a separating medium
297	..Moving filter medium
298	..With mechanical residue or sediment mover
299	..Including constituent trapping feature
300	...Alternate filters and traps in series
301	....Plural traps
302	...Flow-line valve upstream of separator
303	...Cut-off sediment trap
304	...Tangential flow, spiral or convolute baffle
305	...Baffle preceding or within sediment trap
306	....Deflecting prefilt from filter medium
307	...Downstream of filter medium
308	...Directly communicating with tubular filter interior
309	....Attached to filter element
310	...Lateral trap
311	...Downflow inlet, upflow through filter medium
312	...Sediment discharge means
313	....Valve controlled
314	..Spaced filters
315	...One within another
316	...One adjacent inlet or outlet conduit
317	...Including non-self-supporting medium
318	...Incompatible shapes
319	.With agitator

DIVERSE DISTINCT SEPARATORS
320 .With baffle perpendicular to flow direction
321.6 CASING DIVIDED BY MEMBRANE INTO SECTIONS HAVING INLET(S) AND/OR OUTLET(S)
321.61 .Membrane secured with adhesive of specified composition
321.62 .Antithrombogenic membrane
321.63 .Rotating mechanical agitator adjacent membrane
321.64 .Plural diverse structured membranes within a single casing
321.65 .Permeated liquid quantity measurement or control
321.66 .Energy recovery from treated liquid
321.67 .Membrane movement during purification
321.68 ..Nontranslatory rotary
321.69 .With membrane cleaning or sterlizing means (other than by filter movement or rotating agitator)
321.7 ..Solid cleaning material (e.g., balls)
321.71 .Dialyzer with dialysate proportioning means
321.72 .Each section having inlet(s) and outlet(s)
321.73 ..Noncoiled nonannular cross section tube
321.74 ..Coiled membrane
321.75 ..Planar membrane
321.76 ...Spiral flow
321.77 ..Pleated membrane
321.78 ..Cylindrical membrane
321.79 ...Plural cylindrical membranes all connected for parallel flow
321.8 ....All cylindrical membranes are parallel
321.81 .....With embedded baffle
321.82 .Noncoiled nonannular cross section tube
321.83 .Coiled membrane
321.84 .Planar membrane
321.85 ..Spiral flow
321.86 .Pleated membrane
321.87 .Cylindrical membrane
321.88 ..Plural cylindrical membranes all connected for parallel flow
321.89 ...All cylindrical membranes are parallel
321.9 ....With embedded baffle
322 PLURAL DISTINCT SEPARATORS
323.1 .Filters
323.2 ..Tubular
324 ..Movable separating elements
325 ...Planetary
326 ...Drum type on parallel axis
327 ...Plural cleaners and plural movable elements
328 ...Pivotally mounted sections
329 ...Relatively movable
330 ...Connected for group operation
331 ....Spaced filter wall type, e.g., multiple hollow leaves
332 ..With residue removal or liquid agitation
333.01 ...Backwash or blowback
333.1 ....Sequential backwash
334 ...Alternating filter and residue remover
335 ..In series for prefilt flow
336 ...Tortuous path
337 ...Nested units
338 ....Concentric filter elements
339 ...Internal flange supporting filter element
340 ..Parallel filters with flow controller
341 ...Individually controlled for removal with common receiver
342 ..One element within another
343 ..Alternating oppositely opening liquid distributors
344 ..Abutted alternating medium and pan type receiver
345 ..Radial or radially connected to central header
346 ..Spaced wall-type filters
347 ...Central header
348 FILTER
349 .Pulsation dampener or gas trapping
350 .With movable means to compress medium
351 ..Actuating means external of closed casing
352 ..Internal spring
353 .Free cleaning means, e.g., loose abrading particles
354 .Medium, cleaner or agitator moved by fluid
355 ..Cleaner
356 ..Medium flexed
357 .Relatively movable members interleaved for cleaning
358 .Imperforate drum, medium on arc, chord or end
359 .Movable medium
360.1 ..Centrifugal extractor
360.2 ...With inward flow of feed component
361 ...With individual article container or support
362 ....Container or support reversible
363 ...With adjustable rotation stabilizer
364 ...Casing, shaft and filter unit gyratorily mounted
365 ...Shaft and filter unit gyratorily mounted
366 ....Gyratory mounting above filter
367 ...Filter gyratorily mounted on shaft
368 ...With rotation brake
369 ...Discharging residue
370 ....Secondary motion of filter medium
371 ....With variable flow controller
372 ....By residue engaging means
373 .....Fixed
374 .....Rotatable
375 ......Pivoted
376 .....Axially reciprocable
377 ...Internal work distributor
378 ...Including filtrate receiving means having plural filtrate outlets
379 ...Including filtrate receiving trough adjacent top discharge
380.1 ...Rotating element construction
380.2 ....Laundry
380.3 ....Horizontal axis
381 ....Inwardly extending partitions
382 ....Top filtrate discharge
383 ..Separate agitator
384 ..Vibrator and unidirectional motion filter medium
385 ..With plural motion
386 ..Rolls or confining members contacting residue
387 ..Unrollable
388 ..Vibrating or longitudinally reciprocating
389 ...Longitudinally moving prefilt type
390 ..Mounted on movable valve element
391 ..With cleaning means
392 ...Fixed position or attached valve blocking means
393 ...Backwash or blowback and additional cleaner
394 ...Discharging inside, e.g., internal-type drum
395 ...With filter-driven valve means
396 ...Solid cleaner, e.g., scraper
397 ....With plural outlets from filter casing

	FILTER
	.Movable medium
398	..Within sealed enclosure
399	...Movable casing
400	..Belt type
401	...Superimposed on additional moving support
402	..Drum type
403	...Internal feed
404	...Annular segmented compartment
405	.Movable prefilt distributor
406	.Vacuumized filtrate receiver
407	.With residue removing means or agitation of liquid
408	..Diverse, e.g., combined agitators, scrapers, aeration blowback
409	..Fluid cleaning
410	...Air pump type
411	...Backwash or blowback
412	....Liquid pulsator
413	..Fixed filter medium and movable stirrer or cleaner
414	...With plural outlets from filter casing
415	...Nontranslatory rotary
416.1	.With pump, gas pressure, or suction source
416.2	..For aquarium or swimming pool
416.3	..For drinking water
416.4	..For fuel system
416.5	..For lubricating or oil treating system
417	.Alternating oppositely opening liquid distributors
418	.With flow controller for material being treated
419	..Attached to or within portable prefilt receiver
420	..Selective directive flow relative to filter
421	...Pivoted prefilt deflector
422	...Plural outlets from filter casing
423	....Attached unitary plural passage header
424	...Multi-way valve
425	....Backwash
426	.....Encased
427	...Backwash
428	..Combining or dividing flow passages with filter in combined passage
429	..Filter coaxial with valve seat or valve stem
430	...Filter surrounds valve
431	...Filter fixed to valve seat, opposed to valve head
432	..Filter in valve body recess
433.1	.Divided filtered, and unfiltered liquid passages
434	..Recombining
435	.Within flow line or flow line connected close casing
436	..Vented
437	..Central internal liquid receiver, e.g., tube
438	...Imperforate central liquid tube
439	....Axial flow through filter element
440	...Inlet and outlet at same end
441	...Attached to casing
442	....Head and base connected
443	..Inlet and outlet at same end
444	...Filter suspended from head
445	..Clamped in casing joint
446	..Axially aligned inlet and outlet
447	...Laterally removable
448	...Single open-end-type filter element
449	...Pipe end attached closed casing, e.g., faucet
450	..Gasket within casing or spaced removable end members
451	..Internal fixed shoulder supporting filter element
452	...Single open-end-type filter element
453	..Filter element clamped between closure and end wall
454	..Filter element attached to closure
455	.Receptacle and modified spacing surface or support for filter medium
456	.Prefilt flow distributor or diverter
457	.With central pervious tubular receiver
458	..Plural concentric receivers
459	.Pipe or plate attached type
460	..Attached to open end of pipe
461	...Spaced wall-type element
462	...Pipe is connection to plate
463	...Inserted holder
464	.Portable receptacle draining type
465	..Cooperating handles on receptacle and drainer
466	..Receptacle spout
467	...Within receptacle proper
468	...Spaced from spout discharge
469	..On or adjacent receptacle upper edge
470	.Handled
471	..Ring type
472	.Vented
473	.Resting on supporting receiver, e.g., portable
474	..At upper edge of filtrate receiver
475	...Filter offset in cover
476	...Telescoped receivers or receiver sections
477	..Resting on internal stop or surface
478	...Unitary filter medium and radially expandable retainer
479	...Inner separate retainer
480	....With contractor for expandable retainer
481	...Longitudinal retainer or guide, (e.g., reflex coffee maker)
482	..At lower end or prefilt receiver
483	.Supported, shaped or superimposed formed mediums
484	..Medium within foraminous supporting container or sheath
485	..External cage-type support
486	..Spaced wall type, e.g., hollow leaf
487	...Concentric, convolute or pleated
488	..Abutted or superimposed members
489	...For series flow
490	....Integral or coated layers
491	.....All fibrous
492	...Alternating dissimilar
493.1	..Pleated
493.2	...Bonded end caps
493.3	...Rectangularly shaped
493.4	...Spirally formed
493.5	...Filter element
494.1	..Convolute
494.2	...Metal
494.3	...With edge spacer
495	..Single ring or closed frame type
496	..Bound, fused or matted, e.g., porous shapes, sponges, etc.
497.01	..Cylindrical, conical, or trough shape
497.1	...Helically wound
497.2	...Filter blank
497.3	...Conical
498	..Perforated or grooved plates
499	..Screens, e.g., woven
500.1	.Material
500.21	..Semipermeable membrane
500.22	...Isotropically pored
500.23	...Hollow fiber or cylinder
500.24	...Antithrombogenic coating or membrane
500.25	...Metal containing
500.26	...Glass
500.27	...Organic

	FILTER
	.Material
	..Semipermeable membrane
	...Organic
500.28	....Cyclic
500.29	.....Cellulosic
500.3	......Cellulose acetate
500.31	.......Cellulose diacetate
500.32	.......Cellulose triacetate
500.33	.....Homocyclic
500.34	......Styrene
500.35	....Acrylate
500.36	....Alkene other than vinyl
500.37	....Amine
500.38	.....Amide
500.39	......Imide
500.4	....Carbonate
500.41	....Sulfone
500.42	....Vinyl
500.43	.....Acrylonitrile
501	..Sterilizing or neutralizing agent containing
502.1	..Sorptive component containing
503	..Diverse granular or fibrous
504	...With adhered coating or impregnant
505	...Including fibers
506	..Coated or impregnated, e.g., adhesively bound
507	...Fabrics
508	...Fibrous
509	....Inorganic
510.1	..Porous unitary mass
511	LIQUID AS SEPARATING MEDIUM
512.1	TANGENTIAL FLOW OR CENTRIFUGAL FLUID ACTION
512.2	.Multiple cyclone
512.3	.With movable means affecting flow
513	GRAVITATIONAL SEPARATOR
514	.Portable invertible, e.g., milk and cream separator
515	..Selective withdrawal of constituents
516	..Resilient deformable isolator
517	...Hinged to handle
518	..Sectional isolator
519	.Material supply distributor
520	..Rotatable
521	.Superposed compartments or baffles, e.g., parallel plate type
522	..Each with lighter constituent discharge
523	.Mechanical constituent mover
524	..Diverse serial
525	..Scum sediment removal
526	..Endless belt or chain
527	..Rectilinearly movable supporting means
528	..Horizontally rotating scraper
529	...Polygonal container and correlating mover
530	...Tank rim-supported carriage
531	...Elevatable scrapers
532.1	.Heavier constituent trap, chamber, or recess
532.2	..Septic tank
533	..Closure or valve controlled discharge
534	...In sloping recess
535	....Downstream of separator
536	...In side wall of separator
537	...With discharge means for two or more lighter constituents
538	.Lighter constituent trap
539	..Gas vent or bypass
540	..With discharge port
541	ADJUNCTS
542	MISCELLANEOUS

CROSS-REFERENCE ART COLLECTIONS

900	ULTRA PURE WATER (E.G., CONDUCTIVITY WATER)
901	SPECIFIED LAND FILL FEATURE (E.G., PREVENTION OF GROUND WATER FOULING)
902	MATERIALS REMOVED
903	.Nitrogenous
904	..-CN containing
905	..Protein
906	.Phosphorus containing
907	..Phosphate slimes
908	.Organic
909	..Aromatic compound (e.g., PCB, phenol, etc.)
910	..Nonbiodegradable surfacant
911	.Cumulative poison
912	..Heavy metal
913	...Chromium
914	...Mercury
915	.Fluorine containing
916	.Odor (including control or abatement)
917	.Color
918	MISCELLANEOUS SPECIFIC TECHNIQUES
919	.Using combined systems by merging parallel diverse waste systems
920	.Using combined systems of sequential local and regional or municipal sewage systems
921	.Flow equalization or time controlled stages or cycles
922	.Oil spill cleanup (e.g., bacterial, etc.)
923	..Using mechanical means (e.g., skimmers, pump, etc.)
924	..Using physical agent (e.g., sponge, mop, etc.)
925	..Using chemical agent
926	.Using oxidation ditch (e.g., carousel, etc.)
928	PAPER MILL WASTE (E.G., WHITE WATER, BLACK LIQUOR, ETC.) TREATED
929	HEMOULTRAFILTRATE VOLUME MEASUREMENT OR CONTROL PROCESSES
930	PAINT DETACKIFYING

DIGESTS

DIG 3	Belt alignment
DIG 5	Coalescer
DIG 6	Dehydrators
DIG 7	Drier blocks
DIG 8	Fat fryer
DIG 9	Floating cover
DIG 13	Part flow-full flow
DIG 17	Twist-on

CLASS 211 SUPPORTS, RACKS

1	MISCELLANEOUS
1.3	INOPERATIVE IN HOUSED POSITION
1.5	POWER OPERATED
2	CONVERTIBLE TYPE
4	ARTICLE LOCKING
5	.Velocipede type
6	.Towel service type
7	.Horizontal rod type
8	.Combined lock and clamp
9	..Unlocked retained key
10	SORTING TYPE
11	.Desk file
12	.Bag holder
13	SPECIAL ARTICLE
14	.Ball or egg type
15	..With discharge mechanism
16	.Towel service type
17	.Velocipede type
18	..Wall mounted
19	...Tire or wheel
20	..Tire or wheel
21	...Foldable
22	..Stands
23	.Tire or wheel type
24	..Stands
26	.Electric fixture type
27	.Furniture type
28	.Mattress type
29	.Shock type
30	.Hat type
31	..Ceiling or seat mounted
32	..Wall mounted
33	..Stands
34	.Shoe or boot type
35	..Wall mounted
36	..With shelves
37	..Stands
38	..Foldable
39	.Hand stamp type
40	.Phonograph record type
41	.Plate type
42	.Book support type
43	..Adjustable
44	.Bolt or card
45	.Paper or textile sheet type
46	..With trackway
47	..Pivoted support
48	...Wall mounted
49.1	.Stacked Articles
50	..Card or sheet
51	...With follower
52	....Terraced
53	....Rotatable
54.1	....With impaling means
55	...Terraced pockets
56	....Rotatable
57.1	...With impaling means
58	...Rotatable
59.1	..With impaling means
59.2	..Having feature perfecting the dispensing of articles
59.3	...Including follower
59.4	..With distinct separator positioned between articles
60.1	.Article includes elongated portion
61	..Shoelace type
62	..Umbrella or cane
63	...Wall mounted
64	..Gun
65	..Brush and broom
66	...Suspended
67	..Whip
68	..Cue
69	..Drill or bit
69.1	..Writing implement
69.2	...Ink supply means and implement support (e.g., penrack), combined
69.3	....Closure controlling implement support
69.4	....Including implement supporting base for ink receptacle
69.5	...Socket support
69.6	....Swingable
69.7	.....Single plane swing
69.8	...Spring gripping means
69.9	...Spaced support arms
70	..Rotatable
70.1	..Special article support or rack made from sheet material
70.2	..Golf club
70.3	..Cigar, cigarette, or smoking pipe
70.4	..Well pipe or pump sucker rod
70.5	..Ski
70.6	..Tool
70.7	..Cutlery (i.e., spoons, forks, knifes)
70.8	..Fishing rod
71	.Receptacle support type
72	..Of sheet material
73	...Single blank
74	..Bottle or jar
75	...Wall or window mounted
76	...With closure
77	...Rotatable
78	..Rotatable
79	..Reciprocable support
80	...Pivotal support
81	..With pivotal mount
82	...With closure operator
83	..With closure operator
84	..With closure
85	..Foldable or collapsible
86	SPECIALLY MOUNTED OR ATTACHED
87	.Wall or window
88	..Tray or receptacle type
89	..With article-gripping means
90	..Shelf
94	..With trackway
94.5	...Plural, horizontally spaced
95	..Rotatable
96	..Pivoted support
97	...Vertical and horizontal axis
98	....Vertically adjustable
99	...Horizontal axis
100	....Bar or arm
101	.....Vertically adjustable
102	...Vertically adjustable
103	..Vertically adjustable
104	..Foldable
105	...Lazy tongs
105.1	..Single horizontal rod type
105.2	...Curved or angular end type
105.3	...Extensible
105.4	....Screw adjusted
105.5	....Spring or elastic actuated
105.6	.....Enclosed spring
106	..Of wire
107	.Stovepipe or column
110	..Pivoted
111	...Horizontal axis
112	..Of wire
113	.Suspended type
115	..Rotatable
116	..Pivoted support
117	..Vertically adjustable
118	..Knockdown or foldable
119	..Of wire
119.01	CLOTHESLINES, ISOLATED SUPPORTS
119.02	.Looped lines
119.03	..Horizontal plane
119.04	..Pulley support inside of building
119.05	..Pulley support movable through building opening
119.06	...Swingable support
119.07	....On vertical axis only
119.08	....On horizontal axis only

	CLOTHESLINES, ISOLATED SUPPORTS
	.Looped lines
	..Pulley support movable through building opening
119.09	...With loop tighteners
119.1	.Single run line
119.11	..With pin or gripper actuator
119.12	..With suspended article support
119.13	..With article gripper
119.14	...Linked lines
119.15	..Line tighteners
119.16	..Bodily displaceable line
119.17	...Vertically translatable
119.18	.Line covers
120	SERIES SPRING GRIP TYPE
121	ENDLESS CARRIER TYPE
122	.Horizontal travel
123	HORIZONTAL ROD TYPE
124	.With article gripping means
125	SPIKED TYPE
126	TRAY OR RECEPTACLE TYPE
127	.With sprinklers
128	.Terraced trays
129	..Rotatable
130	..Foldable
131	.Rotatable
132	.Foldable
133	.Stands
134	SHELF TYPE
135	.Of sheet material
144	.Rotatable
186	.Knockdown
187	..Vertically adjustable
188	..Stacked similar units
149	..Foldable
150	.Pivoted shelves
151	.With roller mounts
153	.Shelves
162	WITH TRACKWAY
163	ROTATABLE
164	.Horizontal axis
165	.Pivoted support
166	.Vertically adjustable
167	.Foldable
168	PIVOTED SUPPORT
169	.Panels or frames
169.1	..Movable on horizontal axis
170	.Horizontal axis
171	..Bar or arm
172	...Telescopic
173	..Vertically adjustable
174	.Vertically adjustable
189	KNOCKDOWN
190	.Vertically adjustable
191	..Plural beams between plural pairs of uprights (e.g., pallet rack, etc.)
192	...With discrete latch means for locking beams to uprights
193	..Cantilevered arm
194	.Stacked similar units
195	.Foldable or collapsible
196	..Including central support (e.g., tree-like, etc.)
197	...Umbrella construction
198	..Similar planar frames pivotally joined at adjacent edges (e.g., A-frame, etc.)
199	...Pivoted about vertical axis
200	..Similar planar frames pivotally joined inwardly of their edges (e.g, crossed frames, etc.)
201	..Frames movable toward each other in parallel relationship
202	..Lazy-tong construction
203	..Including multiple legs pivotally joined at a single zone (e.g., tripod, etc.)
204	..Horizontal rod supported by one or more uprights (e.g., hanger rod, etc.)
205	.Including central support (e.g., tree-like, etc.)
206	.Horizontal rod between uprights
175	ADJUSTABLE
207	.Vertically
208	..To plural distinct increments
209	..By hoist or pulley
180	WITH SCREENS OR CURTAINS
181	OF WIRE
182	OF PIPES OR BARS AND CONNECTORS
183	ELEMENTS
184	.Adjustable partitions
	******************************
	DIGEST
	******************************
DIG 1	Magnetic article holder

CLASS 212 TRAVERSING HOISTS

DECEMBER 1990

146 HAVING MEANS TO PREVENT OR DAMPEN LOAD OSCILLATIONS
147 .Antisway
148 ..By triangulation of cables on movable boom
149 HAVING MEANS TO SENSE A RANDOMLY OCCURRING CONDITION TO CONTROL STOPPING OR DISABLING MEANS
150 .And means to calculate moment produced by load
151 .Responsive to boom overtravel or proximity to powerline
152 .Hoisting stops upon load being elevated to a predetermined position
153 HAVING RANDOM CONDITION SENSOR TO REGULATE INDICATOR, ALARM, OR CONTROLLER
154 .Senses crane tilt
155 .And means to calculate moment produced by load
156 .Sensor regulates counterweight or counterbalancing means
157 HAVING MECHANICAL INDICATOR
158 .Weight indicator
159 HAVING MEANS TO ACTIVATE OR REGULATE MOTOR
160 .Remote control or dual control positions
161 .Cyclic operation
162 .Manual fluid valve actuator
163 ..And plural fluid motors
164 ...Controlled by common actuator
165 .In control cab
166 CLOSURE REMOVER
167 WITH HAUL-IN LINE
168 WITH MEANS TO PROJECT LOAD ENGAGER BEYOND END OF BOOM
169 GROUND WHEEL OPERATED
170 HAVING CLUTCH OR VARIABLE SPEED TRANSMISSION
171 .Traveling bridge
172 .Power takeoff
173 .Variable speed transmission
174 .Including means to selectively couple plural hoist functions to common power shaft
175 HAVING MEANS FACILITATING ASSEMBLY OR DISASSEMBLY
176 .Of sectional vertical support for boom
177 .Of boom sections
178 .Of counterweight from hoist
179 .Of traversing hoist from support
180 ..Vehicle support
181 ...And having motor to swing boom
182 ADJUSTABLE TO TRANSPORT OR NONUSE POSITION (E.G., COLLAPSIBLE
183 .Crane boom supported by foldable or collapsible tower
184 ..Extensible tower of relatively sliding sections
185 ..Hydraulically actuated or sectionally hinged tower
186 .Collapsible inverted "V" frame supports boom rigging
187 .Collapsible or foldable boom
188 ..Vertically swinging boom having pivoted sections
189 .Ground-engaging stabilizing means (e.g., outrigger)
190 FLOATING OR SHIP MOUNTED
191 .Including counterweight or means to compensate for list, trim or skew of vessel
192 .Having horizontally and vertically swinging boom
193 ..Cable actuated horizontally and vertically
194 ...Plural booms
195 HAVING COUNTERWEIGHT OR COUNTERBALANCING MEANS
196 .Counterweight movable relative to load support
197 ..Along rectilinear path
198 ...On wheeled carriage
199 HAVING BOOM SHIFTABLE VERTICALLY ALONG A LINEAR PATH
200 .Movable along nonvertical rectilinear path
201 .Length of hoisting cable between boom and load decreases automatically as boom is raised
202 .Vertically spaced fastening means along boom support
203 .Fluid actuated
204 .By mounting on vertically extensible support
205 TRAVELING BRIDGE
206 .Having operator support
207 .Flexible
208 .Having vertically adjustable track
209 .Supporting second traveling bridge
210 .Having plural trolleys
211 .Having vertically or horizontally swinging boom on bridge or trolley
212 .Having horizontally swingable track- or load-rotating means on trolley
213 .Having load engager mounted for guided vertical movement beneath trolley
214 .Motor fixed to bridge-supporting structure
215 .Trolley-mounted motor having cable shift
216 .Bridge-mounted motor
217 ..Hoist motor
218 .Having vertical supporting legs (e.g., gantry)
219 ..Overhanging end
220 ..Having specific engager for load
221 .Having specific engager for load
222 HAVING SNUBBER OR BOOM BACKSWING STOP
223 HAVING HORIZONTALLY SWINGING BOOM OR BRIDGE
224 .Boom mounted for guided horizontal translation (e.g., trolley mounted)
225 .Having trolley thereon
226 ..Having vertical support remote from pivot (i.e., swinging bridge)
227 ..And vertically swinging
228 ..And means acting independently of hoist mechanism to shift trolley
229 .And boom position lock
230 .Extensible by movement of boom or boom segment along longitudinal axis thereof
231 ..And vertically swinging
232 .And vertically swinging
233 ..Plural booms
234 ..With adjacent load-supporting rack
235 ..Including means for sluing boom as it is swung vertically
236 ..Including plural actuating means converging toward boom tip to effect both horizontal and vertical swinging
237 ..Including means to swing boom vertically
238 ...Fluid actuated ram
239 ...Flexible cable
240 ....Having passage for luffing cable through boom supporting member
241 ....Human or animal powered
242 ..Having specific engager for load
243 ...Grab
244 ..Ambulant or portable
245 .And means to swing boom horizontally

	HAVING HORIZONTALLY SWINGING BOOM OR BRIDGE
	.And means to swing boom horizontally
246	..Including flexible member driving gear or pulley having axis collinear with boom pivot
247	..Gear drive
248	...Including rack or worm
249	..Human or animal powered
250	.Having fluid ram directly actuating load cable or sheave therefor
251	.Having specific engager for load
252	.Having passage for hoist cable through boom supporting member
253	.Having specific bearing structure
254	.Ambulant or portable
255	HAVING VERTICALLY SWINGING BOOM
256	.And compensating means to maintain horizontal movement of load
257	.And trolley
258	.Protruding laterally from vehicle
259	.Having specific engager for load
260	.Having means to swing boom vertically
261	..Fluid actuated ram
262	..Flexible cable
263	...Human or animal powered
264	.Extensible by movement of boom or boom segment along longitudinal axis thereof
265	.Ambulant or portable
71	LINEAR
72	.Cable, ship coaling type
73	.Shiftable track
74	..Longitudinally movable
75	..Tilting
76	.Cable
77	..Load-handling
78	...Draft-rope
79	....Dumping
80	.....Double tackle
81	.....Grab
82	.....Sling
83	...Load suspension
84	....Grab
85	....Sling
86	..Automatic stop
87	..Draft-rope, hoist-rope traverse
88	...Divided hoist-rope
89	...Hook-lowering
90	...Running track
91	...Cable return
92	...Gravity return
93	....Cable
94	..Draft-rope, independent traverse
95	...Anchored hoist-rope
96	...Hook-lowering
97	..Load suspension
98	...Hoist, carry and lower
99	...Running rope
100	...Sheave catch
101	....Pivoted cable extension
102	...Sheave-frame catch
103	....Sliding
104	....Pivoted
105	.....Double
106	...Rope catch
107	....Sliding
108	....Pivoted
109	.....Double
110	...Rope grip
111	....Variable elevation
112	.....Carriage release
113	.....Side draft
114	....Coacting sheave
115	...Ratchet sheave
116	...Trips, stops and knockers
117	..Rope carriers
118	...Cable stop-operated
119	...Trolley-supported
120	...Carrier sheave-operated
121	...Permanently spaced
122	..Carriage holders, track clamp
123	..Pulley changers
124	.Self-propelled
125	..Load-handling
126	...Electric
127	....Grab
128	....Guide bar
129	.....Grab
130	.....Ladle
131	..Electric
132	...Automatic stop
133	.Hanging cable traverse
134	.Nonmotor traverse
135	..Load-handling
136	...Discharging
137	....Automatic
138	..Fluid hoist
139	..Lever hoist
140	.Surface
141	..Self-propelled
142	..Drum
142.1	.Wheeled trolley
266	BOOM OR MAST
267	.Extensible by sliding sections
268	..By fluid pressure
269	..Having bearing means between extensible sections
270	METHODS
271	MISCELLANEOUS
	******************************
	DIGEST
	******************************
DIG 1	Pallet handling

CLASS 213 RAILWAY DRAFT APPLIANCES

DECEMBER 1990

1 R MISCELLANEOUS
1 A ..One-shot shock absorber
1.3 COMBINED COUPLER AND ELECTRIC CONNECTOR
1.6 .With additional circuit-making or breaking means
2 LOCOMOTIVE AND TENDER
3 .Locomotive to tender
4 .Movable to inoperative position
5 ..With drawbar-lifting means
6 .Pocket type
7 CUSHIONED
8 .Continuous
9 .Combined with car end buffer
10 .Single center sill
11 .Bolster-positioned
12 .Radially movable
13 ..Vertically
14 ...Combined horizontally
15 ..Truck-controlled
16 ..Hand-controlling devices
17 ...Combined uncoupling levers
18 ..Swing head
19 ...Centering devices
20 ..Centering devices
21 ...Drawbar carriers
22 .Combined spring and friction
23 ..Preliminary spring
24 ...Shoes and wedges with casings
25 ..Springs only on draft
26 ..Differential spring compression
27 ...Rotating friction elements
28 ..Rotating friction elements
29 ..Interengaging friction springs
30 ...Plate springs
31 ..Friction casings
32 R ...Shoes and wedges
32 A .....Plural spring
32 B .....Retaining means on draft gear barrel
32 C .....Draft gear assembly
33 ....Interleaved friction plates
34 ....Compound wedges
35 ..Central friction post
36 ...Shoes and wedges
37 ..Transversely movable friction element
38 ...Transverse springs
39 ....Inwardly movable
40 R .Springs
40 D ...Interlocking parts
40 S ...Special
41 ..Varying resistance
42 ..Tension
43 ..Fluid
44 ..Multiple
45 ...Tandem arrangement
46 R ....Separate springs for buff and draft
46 A ......Draft rod through cushion
47 ....With yokes
48 .....Opposed overlying plungers
49 ...Parallel arrangement
50 .Cooperating parts fixed to car
50.5 ..Draft key retainers
51 ..Draft sills
52 ...Parallel-spring arrangement
53 ...Tandem-spring arrangement
54 ..Cheek plates
55 ...Tandem-spring arrangement
56 ..Individual-follower stops
57 ...Combined bolster casting
58 ..Striking block
59 ...Resilient
60 ...Combined drawbar carrier
61 ..Drawbar carrier
62 R .Drawbars
62 A ...Rotatable couplers
63 ..Extensions
64 ..Connections to cushion
65 ...Friction casings
66 ...Links
67 R ...Yokes
67 A .....Special
68 ....Longitudinally divided
69 ....Drawbar connections
70 .....Hooded
71 ......Pivotal
72 .....Pivotal
73 CONTINUOUS
74 RADIALLY MOVABLE
75 R COUPLINGS
75 A ..Operated by trackside mechanism
75 B ..Mine car
75 TC ..Toy train
75 D ..Magnetic
75 GT ..Glass table
76 .Combined car and air train line
77 .Counterpart
78 ..Link or bar type
79 ...Selective coupling element
80 ....Beveled link and swing catch
81 .....Arrowhead type
82 ....Hook and link
83 .....Bails
84 ....Hook and link combined
85 ....Headed link and shouldered slot
86 ....Pin and link
87 .....Swing pin
88 ...Hook and catch
89 ....Pivoted hooks
90 .....Horizontally swinging
91 ...Beveled link and swing catch
92 ....Arrowhead type
93 ...Hook and link
94 ....Bails
95 ...Hook and link combined
96 ...Headed link and shouldered slot
97 ....Rotary head or link
98 ...Pin and link
99 ....Swing pins
100 R ..Interengaging hooks and knuckles
100 W ....Willison coupler
101 ...Arrowhead type
102 ....Plural
103 ...Transversely sliding bill
104 ...Horizontally swinging
105 ....Miller hooks
106 .....Movable bill
107 ....Star wheel
108 ....Plural
109 ....Janney type
110 .....Always in coupling position
111 .....Auxiliary and emergency
112 ......Transition construction and devices
113 .....Plural-tailed knuckles
114 .....Pinless knuckles
115 .....Knuckle openers
116 ......Springs
117 ......Gravity
118 ....Knuckles
119 ......Combined locks
120 ....Vertically movable and horizontally rotatable
121 ....Vertically movable and tilting
122 ....Vertically sliding
123 ....Pivotally-attached member
124 ....Pivoted or rotatable
125 ......Lock-operated
126 ....Vertically sliding locks
127 ....And rearwardly swinging
128 ....Vertically swinging levers
129 ....Vertically swinging locks
130 ....Horizontally sliding locks
131 ......Lock-operating
132 ....Continuing movement
133 ....Horizontally rotating shaft
134 ....Pivoted levers

	COUPLINGS
	.Counterpart
	..Interengaging hooks and knuckles
	...Horizontally swinging
	....Janney type
	.....Knuckle openers
	......Lock-operating
	.......Continuing movement
135	........Sliding
136	.........Vertically
137	.......Separate movement
138	........Rotating and sliding
139	.....Gravity locks
140	......Knuckle-attached
141	......Vertically swinging
142	.......With lock set and anticreep
143	.......With lock set
144	.......With anticreep
145	......Vertically sliding
146	.......With lock set and anticreep
147	.......With lock set
148	.......With anticreep
149	.....Horizontally sliding locks
150	.....Horizontally swinging locks
151	.....Contour
152	.....Knuckle and head interengagement
153	.....Vertical disengagement prevention
154	.....Guard-arm construction
155	.....Knuckle and knuckle pins
156	.....Knuckle-pin bottom retainers
157	.....Detachable ears
158	.....Lifter and lock-hole closures
159	.....Uncoupling devices
160	......Emergency
161	......Selectively movable
162	......Pull rods, chains or ropes
163	......Interengaging levers
164	.......Vertically swinging
165	......Vertically swinging
166	......Rotating horizontal shafts
167	.......Journaled to coupler head
168	.......Directly connected to lock
169	.......Horizontal link to lock
170	.......Vertical link to lock
171	......Brackets
172	...Vertically swinging
173	....Vertical hook
174	...Rotating
	.Link or bar type
175	..Hook and catch
176	..Beveled link and wing catch
177	...Arrowhead type
178	..Hook and link
179	...Pivoted hook
180	....Multiple
181	...Bails
182	..Headed link and shouldered slot
183	...Pivoted head
184	...Rotating head or link
185	..Beveled link and sliding catch
186	...Arrowhead type
187	..Beveled link and fixed catch
188	..Pin and open link
189	...Automatic pin moving
190	....Swing pin
191	.....To coupling position
192	...Pin supports
193	....Tilting pin
194	....Gravity
195	.....Combined link lifters and supports
196	......Rollers
197	.....Pivoted latches
198	......Pin-attached
199	......Stirrups
200	....Spring
201	.....Combined link lifters and supports
202	.....Horizontally sliding
203	......Link-operated
204	.....Pivoted
205	...Link lifters and supports
206	....Opposed car
207	....Levers
208	..Links
209	...End opening
210	...Handled
211	.Uncoupling devices
212	..Central control
213	..Operable from car top or side
214	...Rotating vertical shaft
215	..Operable from car top only
216	..Rotating vertical shafts
217	..Flexible
218	..Vertically swinging lever
219	..Rotating horizontal shafts
220	CAR-END BUMPERS OR BUFFERS
221	.Resilient
222	..Car platform type
223	..Fluid
224	SIDE-TRACK PUSH RODS

CLASS 215 BOTTLES AND JARS

DECEMBER 1990

1 R	MISCELLANEOUS
1 B	..Wooden vessels
1 A	..Drinking straw
1 C	..Plastic
2	BOTTOM FILLED
3	EJECTING
4	.Siphon type
5	..Spring controlled
6	COMPARTMENT
365	CONTENT INDICATING
366	.Interior of receptacle
367	.Poison
10	NESTING
11.1	NURSING BOTTLES AND NIPPLES
11.2	.With temperature responsve indicator
11.3	.Collapsible liner or wall
11.4	.With valve for liquid
11.5	.With vent or valve for air
11.6	.With cover
12.1	MULTILAYER BARRIER STRUCTURE
12.2	.Coating or lamination
13.1	.Insulating material between spaced wall panels
14	NONREFILLABLE
15	.Air trap
16	.Ejecting
17	.Guard or valve type
18	..Valves
19	...Single type spring controlled
20	...Single type float controlled
21	...Single type gravity controlled
22	....Separate disconnected weight
23	....Pendant weight
24	....Pivoted
25	...Multiple type
26	..Guards
27	...Integral with the container
28	...Cap
29	...Fasteners
30	..Separate neck
31	NECKS
32	.Breakable
33	..Stoppers
34	...Multiple
35	..Stopper fasteners
36	...Spring
99.5	GOBLET TYPE
200	CLOSURES
201	.Having warning means or means impeding closure removal (e.g., child proof)
202	..Barbed
203	..With exhibitive feature
204	..Receptacle opening sealed by each of plural closures
205	..Closure at or forms receptacle base
206	..Having registerable indicia to facilitate closure removal
207	..With key actuated lock
208	..Multi-directional turn or twist type
209	..Closure removal includes receptacle deformation
210	..Closure removal includes receptacle tilting
211	..Closure or closure portion engagingly enters receptacle opening
212	...Expandable
213	...With movable closure removal obstacle
214	...Closure guided in simultaneous turning and reciprocating movement, e.g., threaded
215	..With provision for opening tool
216	..Flexible locking member integral with or attached to closure
217	..Closure guided in simultaneous turning and reciprocating movement, e.g., screw threaded
218	...Closure threaded to receptacle and/or rotatable closure removal obstruction
219	...Encompassing closure removal obstacle and closure engaging for concurrent movement
220	....Axially movable closure removal obstacle or obstacle portion
221	...Closure removal obstacle movable to unobstructive position
222	...Quick removal, e.g., bayonet
223	..Closure guided in sequential turning and reciprocating movement
224	..Snap-type closure
225	...With movable closure removal obstacle
226	.Substitute closure having means to remove original closure
227	.With structure for removably holding an article or material
228	.Combined or convertible
229	..With straw
230	.Including visual indicia
231	.Provided with means to purposely depress or contact receptacle contents
232	.Retained by bonding or adhesive means
233	.With hardenable liquid or plastic seal
234	.With liquid seal at closure seat on receptacle
235	.Closure pivoted about receptacle opening
236	..Pivoted at right angle to plane of closure
237	..With fastening means
238	...Cam type
239	...Closure mounted on lever-actuated yoke
240	....With specific closure structure
241	.....Yoke-receiving slot or hole
242	....Lever bears directly on closure
243	...Screw-type clamp or threaded
244	...Spring type
245	....Catch or hook type
246	.Shrinkable closure, fastener or seal
247	.Self-sealing, piercable-type closure
248	..With vent and air filter means
249	..With frangible cover portion
250	.Frangible member or portion
251	..Outer closure breaks or tears away to expose second closure
252	..Twist off motion frees reusable closure
253	..About line or point of weakness
254	...Tear strip
255	....With nonintegral actuator, e.g., attached pull ring
256	....Line of weakness extends circumferentially of receptacle mouth opening
257	..With cutting or tearing means, e.g., wire or string rip cord
258	.Closure removal causes portion thereof to remain with receptacle
259	.Gas passes through a liquid
260	.With pressure responsive valve
261	.Barrier permeable to gas and impermeable to liquid
262	.With vacuum breaker
263	.Nonresealable, nonremovable closure
264	.Applied from within receptacle
265	..Plural closures
266	..Ball type
267	..With manipulator
268	...Wire
269	.Having an inflatable member
270	.With pressure-responsive seal
271	.Closure expands responsive to internal receptacle pressure

	CLOSURES
272	.Cap type with manually actuated means to contract depending skirt part
273	.With separate applied fastener to hold closure in closed portion
274	..Ring type
275	...Contracting
276	...Screw
277	..Cap-type fastener
278	...Bound or tied
279	..Expanding fastener
280	..Clamping fastener
281	...Inclines to interrupted threads
282	....Spring-type clamp
283	...Screw actuated
284	...Lever actuated
285	....Bail
286	...Bail type
287	...Spring
288	....Coil
289	....Closure engaging spring arm hinged to receptacle or support thereon
290	....Spring clip traverses closure, with depending ends thereof diametrically gripping receptacle exterior
291	...Flexible tie
292	..Disk exerts radial force against cup-shaped closure within receptacle mouth or neck
293	.With attached nonintegral spring-type clamping fastener engaging exterior receptacle surface
294	.Stopper with attached, nonintegral clamp means engaging interior receptacle surface
295	.With means to facilitate closure removal
296	..Stopper-type closure
297	...Piercing-type closure extractor
298	...Disk-type closure with finger-engageable projection
299	...Permanently secured in stopper cavity
300	....Cavity extends circumferentially of stopper surface
301	..Actuated by downwardly applied force
302	..Tool engaging means or closure or receptacle
303	..Separate opening means associated with closure
304	...Lever-type, pry-off means
305	..Hand or finger engageable projection
306	.Retainer, e.g., closure tethered to receptacle
307	.Receptacle interior communicable with exterior with closure in applied position, e.g., vented
308	..Communicating through a filter
309	..With separate inlet and outlet passages
310	..Communicable through small, openable aperture in disk-type closure
311	..With valve
312	...Ball type
313	...Rotary type
314	...Screw actuated
315	...Spring actuated
316	.Cap type
317	..Resilient distortion of closure skirt holds it in closed position
318	...Push on, twist off
319	...Specifically designed to accommodate plural sizes
320	...Combined with stopper structure
321	...Closure and receptacle having preformed, coacting configurations
322	..Slidable transverse to receptacle opening axis
323	..Skirt made of separate strip bent into cylinder
324	..Crimped flange or skirt portion
325	...Closure portion engagingly enters receptacle mouth
326	...Flexible material, e.g., paper or foil
327	...Crimp deforms seal against receptacle
328	...With vertical corrugation, e.g., crown cap
329	..Removably attached to receptacle by relative rotation between keepers, e.g., screw threads or lugs
330	...With means to prevent unintentional rotation in closure releasing direction
331	...Projection engages keeper to stop rotation in closure applying direction
332	...Keeper has vertically and horizontally extending slots, e.g., bayonet
333	...Keeper formed by bend in bead encircling lower edge of cap skirt
334	...Keeper formed only on inner wall of double wall cap or consists of separate member on cap
335	...Keeper consists of separate member on receptacle
336	...Keeper consists of tab or strip struck from cap skirt
337	...Cap skirt impressed with circumferential inclined keeper indent, or with circumferentially spaced keeper indents
338	...Keeper shaved from inner surface of cap skirt
339	...Keeper formed by inward facing beads spaced along lower edge of cap skirt
340	...Keeper formed by horizontal flange projecting inward from lower edge of cap skirt
341	..With identifiable, integral or separate gasket, seal or liner
342	...Spring biased
343	...Depending sealing rib engages receptacle top
344	....Integral with closure
345	....Rib on seal ring
346	...Seal locks closure to receptacle
347	...Distinct layers
348	...Foam
349	...Disk
350	....Closure structure retains disk
351	....Annular depending deformation on closure engages disk
352	...Ring
353	..Having flaired skirt
354	..Closure portion engagingly enters receptacle mouth
355	.Stopper type
356	..Removably attached to receptacle by rotation, e.g., screw threaded or lugged
357	...Interrupted threads
358	..Expanding type
359	...Cam or lever actuated
360	...Screw actuated
361	...Stem operated
362	...Permanently deformed
363	..Disk type
364	..Composite
100 R	ATTACHMENTS
100 A	..Handles
100.5	.Condensate or drip collection
101	.Clip

****

DIGESTS

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DIG 1	Fins
DIG 2	Coatings and laminations for making of bottle caps
DIG 3	Medical
DIG 4	Capping materials
DIG 5	Spoons
DIG 6	Resin-coated bottles
DIG 7	With drinking cup
DIG 8	Mixing

CLASS 217 WOODEN RECEPTACLES

4	TANKS
5	BOXES
128	.Temperature-barrier wall structure
129	..Enclosing refrigerant-accommodating space
130	.Enclosing refrigerant-surrounded contents
127	.Bottle mailing cases
6	.Block
7	.Compartment
8	..Folding
9	...Display
10	..Display
11	.Display
12 R	.Knockdown
12 A	...Wraparound type
13	..Sectional
	..Folding
14	...Horizontal and vertical pivot
15	...Horizontal pivot
16	...Vertical pivot
36	.Crates
37	..Bicycle
38	...Folding
40	..Fruit box
42	..Ventilating
43 R	..Knockdown
43 A	....Pallet-attached
44	...Cylindrical and bilge
45	...Sectional
	...Folding
46	....Horizontal and vertical pivot
47	....Horizontal pivot
48	....Vertical pivot
49	..Cylindrical
51	..Wired slats
52	..Cushioned
53	...Padded
54	...Spring
55	....Spiral
17	.Walls
18	.Cells
19	..Bottle
20	...Cord
21	...Plate
22	...Strip
23	..Bent
24	..Clip
25	..Cord
25.5	..Block
26	..Plate
26.5	...Cupped
27	...Cushioned
28	..Pocket
29	..Separable
30	..Strip
31	...Locking
32	....Angular
33	....Bent
34	....Cushioned
35	..Cushioned
56	.Closures
57	..Hinged
58	...Display
59	...Sliding
60 R	...Supports
60 B	.....Single arm
60 C	......Separate guide
60 D	......Integral guide
60 E	.....Two pivoted arms
60 F	.....Two telescoping arms
60 G	.....Three or more arms
61	....Detachable
62	..Sliding
63	...Display
64	.Followers
65	.Joints
66	.Straps
67	..Corrugated
68	..Wire
69	.Stays
70	..Driving
71	...Wire
131	TEMPERATURE BARRIER WALL STRUCTURE
72	BARRELS
73	.Cases
74	.Ventilated
75	.Compartment
76	.Closures
77	..Braced
78	..Expanding
79	...Wedge
80	..Croze and chamfer
81	..Covers
82	...Compartment
83	...Hinged
84	...Sliding
85	...Wire
87	..Gates
89	..Fasteners
86	.Followers
88	.Staves
90	.Hoop sockets
91	.Hoops
92	..Elastic
93	..Retainers
94	..Tighteners
95	...Screw
96	.Joints
97	.Moisteners
98	.Bungs
99	..Valved
100	...Automatic
101	....Safety
102	....Controllers
103	....Collapsible
104	....Flexible diaphragm
105	....Liquid seal
106	..Locking
107	...Bayonet and screw
108	...Expanding
109	....Gasket
110	..Plugs
111	...Frangible diaphragm
113	..Bushings
114	..Protectors and cancelers
122	BASKETS
123	.Bottoms
124	.Closures
125	.Handles
1	BENT
2	.Angular
3 R	LININGS
3 BC	..Box and cover
3 CB	..Cylindrical, barrels
3 C	..Collars
3 CV	..Covers
3 FC	..Fruit rate
126	BUCKET EARS

6.5	INDUCTION HEATING, ELECTRO-STATIC OR ELECTRO-MAGNETIC
7.5	.Metal working (e.g., levigation, machining, stretching)
8.5	..Tubes and pipes
9.5	..Bonding to metal (e.g., welding)
10.41	.Methods
10.43	..Selective area
10.47	.With diverse-type electrical heater
10.491	.With heat exchange
10.492	..Roller (e.g., godet)
10.493	..Cooking means
10.51	..Fluent material conduit
10.53	.Bonding (e.g., seam welding)
10.55 R	.Electromagnetic wave irradiation (e.g., resonant cavity type)
10.55 A	...Pass thru waveguides
10.55 B	...Power supply circuitry
10.55 C	...Interlock circuitry and structure
10.55 D	...Radiation protection
10.55 E	...Cookware
10.55 F	...Field modification and energy distribution
10.55 M	...Methods
10.57	.Special application (e.g., heated specific device or material)
10.59	..Gears
10.61 R	..Webs, strands or sheets
10.61 A	....Godets
10.63	..Shoes
10.65	.Fluent material
10.67	.With article or material support
10.69	..Conveyer
10.71	...Plural heating zones
10.73	..Article or material manipulator (e.g., pressure applicator)
10.75	.Inductive heating systems
10.77	..With automatic control
10.79	.Inductors
10.81	.Electrodes
50	METAL HEATING (E.G., RESISTANCE HEATING)
51	.Chain
52	..Methods
53	.Rail bond
54	..Arc weld
55	..Resistance weld methods
56	.Wire, rod or bar bonding
56.1	..Of wire leads
56.21	...By microbonding
56.22	...Methods
57	..Butt bonding (e.g., welding)
58	..Methods
59.1	.Of cylinders (e.g., pipes and tubes)
60 R	..Electric arc
60 A	....Rotatable tube welders
60.2	...Tube sheet welding
61	...Methods
61.1	..Having internal support means
61.11	...With forming means
61.12	...With cleaning means
61.13	...With edge guidance means
61.2	..Utilizing high frequency resistance heating
61.3	..With edge guidance means
61.4	..With adjustable electrode means
61.5	..With condition responsive control of the welding process
61.6	..Using three or more electrodes
61.7	..With cooling means
62	..Helical seam
63	..Rotary transformer part
64	..Container (e.g., cans)
65	..Nonrotary electrode (e.g., oscillating)
66	..Inside electrode
67	..Resistance heating methods
68	.Cutting or disintegrating (e.g., machining engraving)
69.1	..Electric arc
69.11	..Electric spark machining
69.12	...Wire cutting
69.13	...Circuits
69.14	...Dielectric composition and purification
69.15	...Electrodes
69.16	...Gap spacing control
69.17	...Methods
69.18	...Pulse
69.19	...Safety circuits
69.2	...Vibrating electrodes or workpiece
70	...Hand-type tools
71	.Liquid electrode
72	.Nonatmospheric environment at hot spot (e.g., resistance weld under oil, vacuum)
73	..Slag (e.g. submerged arc)
73.1	...Including electroslag welding
73.11	....For coating
73.2	...With granular flux supply
73.21	....For deposition welding
74	..Gas supply (e.g., by ingredient of electrode, by external source)
75	...Nonconsumable electrode (e.g., atomic hydrogen)
76.1	.For deposition welding (e.g., coating or building up)
76.11	..With cooling means
76.12	..Of multiple distinct layers
76.13	..By spark discharge
76.14	..By electric arc
76.15	...With nonconsumable electrode
76.16	...Plasma
76.17	..By resistance heating
77	..Cutting edges of tools
78.01	.For bonding with pressure (e.g., resistance welding)
85.1	..Brazing or soldering
85.11	...Utilizing induction heating
85.12	...Utilizing radiant energy
85.13	....Methods
85.14	...With filler metal in circuit
85.15	....Methods
85.16	...Electrically heated tool (e.g., electrodes, heaters, etc.)
85.17	...Furnaces or enclosures
85.18	...Wire lead bonders
85.19	...Machine for predetermined operation
85.2	...Fluxes or solders
85.21	...Solder preforms
85.22	...Methods
78.02	..By solid-state bonding (e.g., diffusion)
78.11	..Honeycomb
78.12	...Methods
78.13	..With additional heating device
78.14	..With work cleaning means
78.15	..With work cutting means
78.16	..With work deforming means (e.g., tube sealing)
79	..With conveyer for workpiece
80	...Spot bond
81	..Roller electrode
82	...Roller moves over work
83	...Methods
84	...Electrode structure
86.1	..By spot bonding
86.21	...With hand-manipulative portable devices
86.22	...With separately applied pressure and heat
86.23	...With welding pressure controlled by the work support
86.24	...With work orientation means
86.25	...With significant electrode support
86.31	....Having cooling means

	METAL HEATING (E.G., RESISTANCE HEATING)
	.For bonding with pressure (e.g., resistance welding)
	..By spot bonding
	...With significant electrode support
86.32	....Having magnetic force actuated electrode
86.33	....Having adjustment means
86.41	.....With condition responsive control means
86.51	......Responsive to pressure
86.61	.......By force balancing
86.7	.....For predetermined welding operation
86.8	....Having interchangeable welding electrodes
86.9	...For one-face welding
87	...Multiple spot type
88	...Electrode positionable along fixed bus bar (e.g., reaction bar type)
89	...Fluid pressure actuated electrode
90	...Plier or tong type
91.1	...With condition responsive control of the welding process
91.2	...Methods
91.21	....Of welding through insulation
91.22	....With additional heating to same spot
91.23	....With work deforming
92	....Current limitation (e.g., by interposed insulation)
93	.....By localized projection
94	.....By interposed button
95	..Percussive
96	...Methods
97	..Flash
98	...Stud
99	....Methods
100	...Methods
101	..Butt
102	...Extended seam
103	...One part fed
104	...Methods
105	....Preparation of edges
106	....By use of a bridging member (e.g., splice plate)
107	....End or edge to surface
108	..Systems of current supply
109	...With indicator (e.g., recorder)
110	...Controlled in response to current, voltage or temperature
111	...Repeat or interrupted current systems (e.g., multiple welds, multiple-heated weld)
112	...Stored energy discharge (e.g., inductive)
113	....Condenser discharge
114	...With space-discharge tube control (e.g., thyratron, ignitron)
115	...Synchronous switching on and off
116	...With transformer
117.1	..Methods
118	...Particular material (e.g., dissimilar, aluminum)
119	..Electrodes (e.g., structure)
120	...With cooling
121.11	.By Arc
121.12	..Using electron beam
121.13	...Welding
121.14	....Methods
121.15	...Deposition (e.g., Sputtering)
121.16	...Melting
121.17	....Methods
121.18	...Cutting
121.19	....Etching or Trimming
121.2	.....Methods
121.21	...Chamber
121.22	....Sealing
121.23	....Monitoring
121.24	...Nonvacuum environment
121.25	...Shaping
121.26	....With focusing
121.27	....With electrode or gun structure
121.28	...Position control
121.29	....Swept or scanned
121.3	....Condition responsive
121.31	...Workpiece position control
121.32	....Condition responsive
121.33	...With fluid supply (e.g., shielding gas or coolant)
121.34	...Power Supply
121.35	...Methods
121.36	..Using plasma
121.37	...Melting
121.38	....Methods
121.39	...Cutting
121.4	....Etching
121.41	.....Methods
121.42	.....Rate control
121.43	.....With chamber
121.44	....Methods
121.45	...Welding
121.46	....Methods
121.47	...Spray coating
121.48	...Plasma torch structure
121.49	....Cooling system
121.5	....Nozzle system
121.51	....Gas supply system
121.52	....Electrode structure
121.53	....Consumable electrode
121.54	...Control systems
121.55	....Gas supply
121.56	....Arc positioning
121.57	....Arc ignition
121.58	...With work holder
121.59	...Methods
121.6	..Using laser
121.61	...Beam energy control
121.62	....Condition responsive
121.63	...Welding
121.64	....Methods
121.65	...Melting
121.66	....Methods
121.67	...Cutting
121.68	....Etching or trimming
121.69	.....Methods
121.7	....Hole punching
121.71	.....Methods
121.72	....Methods
121.73	...Shaping
121.74	....With mirror
121.75	....With lens
121.76	...Multiple beams
121.77	....With sing source
121.78	...Beam position control
121.79	....Path adjustment
121.8	....Swept or scanned
121.81	....Condition responsive
121.82	...Workpiece position control
121.83	...With monitoring
121.84	...With fluid supply
121.85	...Method
121.86	...Chamber
122	..Control of arc direction
123	...Magnetic
124.01	..With ignition by retraction
124.02	..With gap control
124.03	...By arc voltage
124.1	..With automatic positioning of arc
124.21	...Including work cutting
124.22	...In response to work shape
124.31	....Having carriage supported by work
124.32	....Having variable welding head travel rate (e.g., gravity feed)
124.33	....Having electrode angle control
124.34	....By using probe means
124.4	...In response to work position

METAL HEATING (E.G., RESISTANCE HEATING)
.By Arc
..With automatic positioning of arc
124.5 ...In response to the transfer rate of the weld metal
125.1 ..With predetermined welding operation
125.11 ...For closed path welding (e.g., circumferential welding)
125.12 ...For oscillating electrode welding
126 ...Vertical work (e.g., horizontal seam in vertical wall)
127 ..Spot arc bonding (e.g., arc riveting)
128 ..With working of bonding metal (e.g., by peening)
129 ..Brazzing or soldering
130.01 ..Including circuits for monitoring arc parameters
130.1 ..Including arc-power supplies
130.21 ...With automatic output control (e.g., shortcircuit, infrared)
130.31 ....Responsive to arc voltage only
130.32 ....Responsive to arc current only
130.33 ....Responsive to both arc voltage and arc current
130.4 ...With arc ignition and stabilization arrangements
130.5 ...With predetermined time variation of arc voltage or current (e.g., programmed)
130.51 ....Pulsating or periodic output
132 ...Remote control
133 ...With generator (e.g., gas engine driven)
134 ....Electric motor driven
136 ..Welding
137 R ...Process
137 PS .....Power supply
137 WM .....Weld metal composition
137.2 ..With consumable electrode device
137.31 ...Gun
137.41 ....Having fume extractor
137.42 ....Having gas flow limiting shape (e.g., gas diffuser)
137.43 ....Having spatter shield
137.44 ....Having integral electrode guide
137.51 .....With flexibility
137.52 .....With wear resistant liner
137.61 ....Having filler electrical contact structure
137.62 ....Having cooling means
137.63 ....Having supply connection means (e.g., quick disconnect)
137.7 ...Rate control
137.71 ....Circuits
137.8 ...Including filler wire deforming
137.9 ...Supply cables (e.g., for current, shielding gas, coolant)
138 ..Electrode holder (e.g., spring biased tong)
139 ...Plural adjustable electrodes (e.g., hand torch)
140 ...Spring jaw (e.g., sprung by electrode)
141 ....With separate actuator
142 ...Plunger jaw (e.g., screw actuated)
143 ....Spring biased
144 ...Positive grip
145.1 .Weld rod structure
145.21 ..Nonconsumable
145.22 ..Flux cored
145.23 ..Flux coated
145.31 ...Partially
145.32 ...With wire wrap
145.41 ..Nonmetal cover
146.1 .Weld rod composition
146.21 ..Nonconsumable
146.22 ..Nonferrous
146.23 ..Containing nickel, chromium, and iron
146.24 ..Metal deoxidizer or denitrogenizer
146.3 ...Particulate
146.31 ..Particulate
146.32 ...Alloying
146.41 ....Nickel or chromium
146.51 ...Containing carbide
146.52 ...Shielding
147 ..With eye shield
148 .Bonding
149 .With forging or shaping (e.g., of powder)
150 R ..Upsetting
150 V ....Riveting
151 ...Anvil electrode
152 ...Simultaneous with heating
153 ..Bending or twisting
154 ..Subsequent to heating
155 .Endless strip
156 .Rods and bars
157 .Rivets
158 .Work holders
159 ..Rotating supports
160 ..Mandrels (e.g., anvil)
161 ..Clamp
162 .Methods
200 HEATING DEVICES
201 .Combined with diverse-type art device
202 ..Vehicle or vehicle component
203 ...Windshield or window
204 ...Steering device
205 ...Motor or engine
206 ....Manifold
207 ....Carburetor
208 ....Radiator or cooling system
209 ..Electrical devices
210 ...Crystal or other vibratory device
211 ..Apparel
212 ..Bed covering (e.g., blanket)
213 ..Static structure (e.g., building pavement, etc.)
214 ..Vending, dispensing or display device
215 ..Shoe machinery
216 ..Printing or reproduction device
217 ..Chair, bed or other body-supporting means
218 ..Table or cabinet
219 ..Mirror
220 ..Light means
221 .Tool or instrument
222 ..Hair heaters
223 ...Singeing apparatus
224 ...Electrolytic
225 ...With heated clamp means (e.g., hand-held)
226 ...With heated casing
227 ..Hand-manipulative
228 ...With heat distribution means (i.e., heat applied to extended area)
229 ...With heated tip or other heat concentration means (i.e., heat applied to localized area)
230 ....With tip cooling, clamping or lighting means
231 ....Convertible
232 ....Internal arc-type heating unit
233 ....Tip in electrical circuit
234 .....Work in circuit
235 .....With transformer secondary
236 ....Coil or loop-type heating element
237 .....Integral with tip
238 .....Detachable tip
239 ......Threaded
240 ...With power supply, voltage or current control, or connection and/or disconnection means
241 ....With thermal control means
242 ...Supports

HEATING DEVICES
243 .Combined with pressure application means
244 ..Rotatable
245 ..Sole plate type pressure application means (e.g., flatiron)
246 ...Combined with stand
247 ....With complementary electrical connector means to external circuit terminating in stand
248 ...With condition-responsive indicator
249 ...Convertible
250 ...With power supply, voltage or current-control means
251 ....Thermally responsive
252 .....Adjustable
253 .....Comprising fusible metal, expansible liquid or bar means
254 ...With heating unit structure
255 ....Plural heating units
256 ...With electrical circuit completion or terminal structure
257 ....Automatically operated
258 ...With heat storage, exchange or reflector means
259 ...Supporting devices
260 .Resistive element igniter type
261 ..With blower, suction or other ignition facilitating means
262 ..With current control or external circuit connection or disconnection means
263 ...Automatic
264 ....Thermally responsive
265 .....Bimetallic or other flexible means
266 ...Resilient means
267 ..With housing casing or support means for igniter unit
268 ..With source of power or current
269 ..With indicating means
270 ..With igniter unit structure

Class 392 is an integral part of Class 219 as shown by the position of this box. This Class 392 provides for electrical resistance heating devices.

383 .Electric arc type devices
384 ..With perforating or disintegrating means
385 .Combined with container, enclosure or support for material to be heated
386 ..Portable or mobile
387 ...Food conveying type (e.g., lunch box)
388 ..With means whereby material to be heated may be passed continuously through heated area (e.g., conveyor)
389 ..Revolving enclosure
390 ..Muffle-type enclosure
391 ..Oven type
392 ...Combined with additional material support
393 ...Oven performs plural diverse functions
394 ...With plural ovens
395 ...With plurality of separate heating units
396 ....Of diverse construction or functioning in diverse manners
397 ....Of different resistive values
398 ....Selectively energized
399 ...With heat energy transfer, distribution or accumulator means
400 ....By convection
401 ...With steam generating means
402 ...With casing or support for heating unit or units
403 ....Retractable or detachable (from heated enclosure)
404 ....Hinged or adjustable (within the heated enclosure)
405 ....Including heat energy reflecting or directing means
406 ...With resistance heating means surrounding heating area
407 ....Embedded within or between walls of container
408 ...With resistance heating unit or units fixed enclosed by or located within heating area
409 ...With heating unit structure or composition
410 ....With plural section heating element
411 ....With infrared generating means
412 ...With current or voltage control or regulating means
413 ....Automatically responsive to condition of heating area
414 ...With switch or other external circuit completing means
415 ..Deep well
416 ...Convertible
417 ...With plurality of separate heating units
418 ...With adjustable position heating unit or units
419 ...With current control or external circuit opening or closing means
420 ..Crucible or furnace type (i.e., adapted to hold meltable material)
421 ...Melting pot
422 ...With plural separate heating units
423 ...With protection means for heating unit or switch
424 ...With resistance heating element surrounding or embedded within walls of container
425 ...With current or voltage control means
426 ...With significant heating unit structure or composition
427 ....Container comprises resistance heating element
428 ..Plural containers
429 ..With vessel and stand
430 ...With heat storage or transfer means
431 ...With pressure generating or maintaining means
432 ...Vessel separable from stand
433 ...With heating unit unitary with or attached to the stand
434 ....Adjustable relative to vessel or stand
435 ...With external electrical circuit connection or disconnection means
436 ...With heating unit attaching or support means
437 ....Immersible
438 ..With vessel
439 ...With heat storage or transfer means
440 ...With pressure generating or maintaining means (e.g., pressure cooker)
441 ...With temperature or current control means
442 ....Adjustable
443 ..Exposed horizontal planar heating surface (e.g., hot plate type)
444 ...With stowaway or concealing means
445 ...With plural individual heating units or elements
446 ....Selectively activated
447 ....Detachable or interchangeable
448 ...With electrical voltage or current regulation or control means
449 ....Thermally responsive

HEATING DEVICES
.Combined with container, enclosure or support for material to be heated
..Exposed horizontal planar heating surface (e.g., hot plate type)
...With electrical voltage or current regulation or control means
....Thermally responsive
450 .....In direct contact with material to be heated
451 ...With external circuit connection or disconnection means
452 ....Automatically operated
453 ....With circuit condition indicating means
454 ...Convertible (e.g., acts as heating unit for oven)
455 ...Self-supported heating unit adapted to furnish material support
456 ....Adjustable to shape of material to be heated
457 ...Heating unit embedded within or unitary with material support
458 ...With housing, casing or support means for heating unit
459 ....Combined with material support surface
460 ....With thermal insulation or ventilating means
461 ....With heat energy reflecting or deflecting means
462 ....With heat energy storage, transfer or exchange means
463 ....With heating unit attachment or securing means
464 ...Planar heating surface or particular material or structure
465 ...With heating unit structure
466 ....Comprising plural resistive elements
467 ....With element-attaching or supporting means
468 ....With resistance element structure or material
469 ..Cylindrical or roller-type support for material to be heated
• 470 ...With plural heating units
471 ...With external electrical circuit completion means
472 .Plural functions simultaneously or convertible
473 ..To nonheating device
474 ..To diverse-type electric heating device
475 .With plural heat utilization means (single heater)
476 .Plural separate heating devices
477 ..With common power supply or current control means
478 ..With unitary housing, support or casing means
479 ..Diverse type (each electric)
480 ..Selectively activated
481 .With protective means for heater
482 .With power supply and voltage or current regulation or current control means
483 ..Controlling or regulating plural separate distinct heating resistance elements(i.e., one control system for all elements)
484 ...Of diverse resistance characteristics or value
485 ...With total current or power limiting means
486 ...Selectively, sequentially or alternately
487 ....With indicator means
488 ..With voltage limitation, conversion or adapting means
489 ..Combined manual and automatic regulating or control means
490 ..Automatic regulating or control means
491 ...Combined (e.g., electro-mechanical and thermal)
492 ...Comprising timing or cycling means
493 ....Electro-mechanical
494 ...Thermally responsive
495 ....Thermomagnetic
496 ...Pressure responsive
497 ...Comprising voltage and/or current measuring and comparing or combining means
498 ....Including follow-up servo means
499 ....Including bridge means
500 ...Including electron or glow-discharge tube means
501 ...Including semiconductor means (e.g., transistor)
502 ...Utilizing light-sensitive and/or responsive means
503 ...Inductive reactor means (e.g., auto transformer)
504 ...Comprising variable resistance means
505 ....Comprising nonlinear or negative temperature coefficient resistance means
506 ...With signal or indicating means
507 .With current connection and/or disconnection means (e.g., switch)
508 ..Plural means intermittently or selectively operated
509 ..Automatically operated
510 ...Thermally responsive
511 ....With auxiliary heating means for thermal switch means
512 ....Comprising linearly expansible metal
513 ....Comprising expansible fluid (e.g., alcohol or mercury)
514 ....With solenoid means
515 ....Adjustable means
516 ....Insertable into or in direct contact with heated material
517 ....Fusible link
518 ...Responsive to weight, position or presence of body to be heated
519 ...Including electromagnetic relay means
520 .With heater-unit housing, casing or support means (e.g., frame and single sheet)
521 ..Including or comprising holding or support means for material to be heated
522 ..Housing, casing or support performs plural diverse functions (e.g., window)
523 ..Housing, casing or support insertable into material or space to be heated (e.g., immersion type)
524 ..Comprising hinged or separable compartment (e.g., waffle iron type)
525 ...With plurality of or sectional heating means
526 ..With means for attaching housing or casing to an external device (e.g., magnetic or vacuum)
527 ...Body-supported (e.g., human body)
528 ..Flexible or resilient (e.g., warming pad)
529 ...Cloth or other fabric
530 ..With heat storage or transfer means (vanes) •
531 ..With thermal insulation or cooling means
532 ..With open frame or grid-type support
533 ..Portable (e.g., with handle)

	HEATING DEVICES
	.With heater-unit housing, casing or support means (e.g., frame and single sheet)
534	..Rigid tubular housing, casing or support (e.g., flattened tube)
535	..Specially formed or adapted to fit material to be heated (e.g., a pipe)
536	..With heating unit mounting or attaching means
537	...Plural units combined with single casing housing or support
538	.With heating unit structure
539	..Comprising plural separate and distinct resistive elements
540	..With heat storage or transfer means (e.g., fins or plate)
541	..With terminal or connector means (e.g., to external circuit means)
542	..With resistive-element attaching, securing or electrical insulation means
543	...Comprising coating printed or deposited on core sheath or support means
544	...Element embedded within or completely surrounded by core, sheath or support means
545	...Resistive element interwoven with fabric support
546	..Core, sheath or support means for heating element
547	...Comprising material to be heated
548	...Of particular construction or material
549	....Flexible
550	....Sectional or interconnectable insulator means
551	....Gasket or wafer-type insulator means
552	..Heating element structure
553	...Of particular construction and/or material (e.g., infrared generator)

560	FLOATING CONTAINER
561	CONTAINER HAVING RECONDITIONED OR RECONDITIONABLE END WALL
562	VEHICLE MOUNTABLE TANK
563	.With baffle
564	.Compartmented
565	STATIONARY TANK
566	.Toroidal (i.e., doughnut shaped)
567	.Elevated (e.g., municipal water tank)
568	COCKTAIL SHAKER
569	MILK CAN
570	PAINT TRAY
571	DRAIN PAN OR DRIP PAN
572	.With article drying support (e.g., dish-rack pan)
573	.For a vehicle
574	TABLE DISH (E.G., PLATE, BOWL, PLATTER, ETC.)
575	.Compartmented table dish
576	SMOKING STAND
1.5	FREIGHT CONTAINERS
2	COAL RECEPTACLES
2.1 R	ENVELOPE FOR ELECTRIC LAMP OR SIMILAR DEVICE
2.1 A	..TV tube
2.2	.With evacuating stem or valve
2.3 R	.Partly of conducting material
2.3 A	...TV tube
3	HIGH-PRESSURE-GAS HOLDERS
3.1	THERMAL MATERIAL
3.2	OUTLET OR JUNCTION BOX TYPE
3.3	.Wall, floor, or panel mounted
3.4	..Concrete, lath or plaster engaging means
3.5	..In opening
3.6	...Opposed engaging means
3.7	.With adjustable parts
3.8	.With closure
3.9	.With support
3.92	..Sectional receptacle
3.94	.Sectional receptacle
4.01	SECTIONAL
4.02	.Electrical housing
4.03	.Extension
4.04	.Barrel-shaped container
4.05	..Formed of thermoplastic material
4.06	..Comprising only two similar cup-shaped sections
4.07	...Separable sections
4.08	..Knockdown
4.09	...Separable sidewall and end walls
4.11	....Sidewall formed of separable stave-like parts
4.12	.Tank for fluids
4.13	..Formed of thermoplastic material
4.14	..Vehicular fuel tank
4.15	...Removable aircraft fuel tank
4.16	..Knockdown
4.17	...Bolted construction
4.21	.Container formed of only two similar sections
4.22	..Sections hinged together
4.23	...Hinge integral with sections
4.24	..Identical halves
4.25	...Hemispherical sections
4.26	.Stacked or aligned similar sections
4.27	..Sections are container units
4.28	.Knockdown
4.29	..Sidewalls vertically hinged to each other
4.31	..Sidewalls slide vertically to engage each other
4.32	..Sidewall slides horizontally to engage the base
4.33	..Removable fastening element
4.34	...Retaining pin extends through aligned openings in knuckle-like elements
6	.Folding
7	..Fastening members
8	.Telescoping
9.1	FLACCID WALL MATERIAL PERMANENTLY UNITED WITH A SKELETAL FRAMEWORK
9.2	.Collapsible or foldable framework
9.3	..Laterally collapsible or foldable
400	WITH SEPARABLE LINER OR ENCASEMENT
401	.Skeleton encasement (i.e., outer lattice work)
402	.Including shield for liner
403	."Flexible" or "flaccid" liner
404	..Supported at open terminus (e.g., bag, sack)
405	..Plate or tray-type (e.g., foil ash-tray, paper dish)
406	...Plural stack or nest
407	..With liner supply
408	.Erected liner for erected container
409	..With liner lifter mechanism
410	..Nonmetallic liner
411	..Prefilled "can"-type
412	..."Hot", "cold", "insulated" chest-type
413	....With specified liner retainer
414	FILAMENTARY WOUND BARRIER STRUCTURE
415	MULTILAYER BARRIER STRUCTURE
416	.Folded single blank-type
417	..Including coated layer
418	..Plural lamina blank
419	..Metallic blank
420	.Evacuated space between layers
421	..With intermediate insulating means
422	...Fluent material
423	...Plus distinct reflector means
424	..With intermediate reflector means
425	..Layer-space-layer only
426	.Fluid-filled space between layers (fluid other than "dead" air)
427	..Compartmented dish or tray (e.g., baby server)
428	..Water or steam
429	.Intermediate fluent mass layer (e.g., powder, loose hair, particles, etc.)
430	.Separate edge-bridge (e.g., "breaker-strip")
431	..Spaced wall-contacting
432	...With fastener means
433	....Pronged bridge
434	.Separate resilient fastener
435	.Specified structure for relative layer movement
436	..Articulated layer members
437	..Distinct nonlayer member
438	...With corrugated layer
439	...Plural slip elements
440	..Corrugated layer
441	.Including a corrugated layer
442	..Metallic corrugation
443	..Coextensively bonded
444	.Intermediate foamed-in-situ layer
445	.Specified spacer means (nonlayer)
446	..Adjacent an open and/or neck-like portion
447	...And a closed-end spacer
448	..Resilient
449	.Pliant wrapper supported by content
450	.Including a foil layer
451	.Including asbestos filler
452	.Including a batt layer
453	.Coextensively bonded self-sustaining layers
454	.Specified coated or impregnated layer (e.g., dipped, sprayed)
455	..External
456	..Specified plural coatings
457	..Specified nonmetal coating
458	...Compatible with food content
459	...Hot water boiler-type

MULTILAYER BARRIER STRUCTURE
460 .Including flaccid veneer-like layer (e.g.,cloth, paper)
461 .."Plastic" (e.g., polyethylene, rubber, latex, etc.)
462 ...Within erected blank
463 ..Within erected blank
464 .Intermediate self-sustaining panel
465 .Including specified barrier aperture fitting (e.g., flange, bung)
466 .Double-walled barrel or drum-type
467 .Refrigerator cabinet-type
468 .Plural self-sustaining layers
469 .Spaced walls
470 LINING PER SE
17.1 LEG OR LAP SUPPORTED
17.2 .Bail ear engaging or integral therewith
17.3 .With pail encircling band or ring
475 POLE OR ROD SUPPORTED CONTAINER
476 WALL SUPPORTED CONTAINER
477 .Recessed wall mounting
478 .Container pivotally attached
479 ..Container pivots through or over wall
480 .Detachably supported container
481 ..Separate support means secured to wall
482 ..Container has hook means engaging wall upper edge
483 ..Suction cup or magnetic support structure
484 IN GROUND, NONTANK CONTAINER (E.G., METER BOX, GARBAGE CAN, ETC.)
485 WIRE CONTAINER
486 .Compartmented
487 ..Dish holding (e.g., dish rack)
488 ...Dishwasher rack
489 .Adjustable or contortable wall provides multiple configurations of use (i.e., alternative shapes)
490 .Spiral sidewall
491 .Rigid wire bent to form portion of bottom wall and sidewall
492 ..Blank
493 .Wall formed of flexible wire cloth (e.g., screen wire)
494 .End wall structure
495 ..Nonwire bottom (e.g., sheet metal, wood, plastic, etc.)
23.2 HORIZONTALLY ATTACHED RECEPTACLE SETS
23.4 .Detachable
23.6 .With stacking feature
23.8 .Integral
23.83 ARRANGEMENTS OF PLURAL RECEPTACLES
23.86 .At least one combined or convertible
500 COMPARTMENTED CONTAINER
501 .Intercommunicable compartments
502 ..With externally operable means for establishing and blocking communication
503 .Compartments accessible from different planes
504 ..Accessible from parallel, opposing planes
505 .Compartments of differing vertical extent
506 .Substantially concentric compartments
507 .Cells (i.e., identical or similar compartments each intended to hold a single item)
508 ..Egg carrier
509 ..Bottle case
510 ...Removable partition
511 ...Wire partition
512 ...Cells formed by apertures in a horizontal plate
513 ...Cells formed by upwardly opening cup-like or cylindrical members
514 ...Cell bottom includes structure intended to engage inverted bottle mouth
515 ...Case includes structure to receive bottles individually or packaged (e.g., six packs, etc.)
516 ...Molded in one piece
517 ....Blow molded
518 ....Cells have bottle locating finger-like members
519 ....Case bottom configured to stack on top of bottle in underlying case
520 .Compartments fold together
521 .Compartment in closure
522 ..Closure compartment only accessible when closure is in its open configuration
523 .Closure for compartment
524 ..Separate closure for each compartment
525 ..Closure permits access to one compartment while blocking access to another
526 ..Closure has means to engage compartment forming elements (e.g., forms seal between closure and compartment)
527 .Compartment forming element includes a bottom wall
528 .Compartment insert
529 .Compartment partition is movable or removable
530 ..Flexible partition provides a variable volume
531 ..Hinged partition
532 ..Vertical partition received in groove or notch in the container
533 ...Plural partition-receiving grooves or notches
534 ..Vertical partition horizontally slidable
535 ...Horizontal rod extends through opening in partition
536 ....Including spring means biasing the partition
537 ....Including screw threaded interengaging means on rod and partition
538 ....Including locking means engaging the rod
539 .....Frictional locking means
540 ....Including locking means engaging the container
541 ...Partition has reciprocating locking member acting between partition and sidewall
542 ....Locking member received by means on or in container sidewall
543 ...Partition includes means to slidably engage the upper edge of container sidewall
544 ...Partition slides along guide means (e.g., groove, track, etc.) on or in container sidewall
545 ....Partition includes releasable means locking it in position
546 .....Guide means has spaced apertures or ribs to receive the locking means
547 ......Locking means includes a gear-like member which engages the spaced apertures or ribs
548 .....Partition locking means is engaged with the guide means by rotation
549 ...Partition slides along guide means (e.g., groove, track, etc.) on or in container bottom wall
550 ....Partition includes releasable means locking it in position
551 ..Extendable partition

COMPARTMENTED CONTAINER
.Compartment partition is movable or removable
552 ..Intersecting partitions
553 .Compartment partition is stiff and fixed in position
554 ..Horizontal partition
555 ..Partition and walls molded or cast together
556 ...Configured for use as a food service tray
557 ..Partition one-piece with and folded from a container wall
558 TILTABLE FRONT PANEL FOR DRAWER OR TRAY (E.G., FILE DRAWER HAVING HINGED FRONT PANEL)
559 COMPRESSOR OR FOLLOWER PLATE FOR DRAWER OR TRAY
200 CLOSURES
201 .Thermal releaser or actuator
202 .With condition responsive vent or valve
203 ..Responsive to pressure
204 ...In each of plural passages
205 ...Liquid trap or seal
206 ...Manually adjustable
207 ...Rupturable
208 ...Having relatively movable closure and receptacle rim parts
209 ...With flexible, resilient vent closing member
210 .Key controlled
211 .Motor driven
212 .Combined or convertible
213 .Convex or concave closure conforms to curvature of opening to be closed
214 .With separately applied sealing means for indicating unauthorized closure movement
215 .With heat insulating insert or captive air space
216 .Floating closure
217 ..With liquid gasket
218 ..Sectional, relatively moveable
219 ..With surface water receiver, e.g., drain
220 ..With support for aground closure
221 ..With gasket means intermediate closure rim and receptacle
222 ...Attached to closure
223 ....Magnetic means urges gasket towards receptacle
224 ....Mechanical means urges gasket towards receptacle
225 ....Fluid filled gasket
226 ....Resilient foam or stuffed gasket
227 ..With vent means
228 .Having liquid or semi-liquid gasket
229 .Closure penetrated through intersecting slits
230 .Magnetic
231 .With vacuum breaker or manually operable vent
232 .Having inflatable gasket or packing
233 .Externally adjustable plug or gasket
234 ..Closure carried gasket and expander means
235 ...Screw actuated
236 ....With retainer
237 ....With wedging expander
238 ...Cam actuated
239 ..Fluid pressure
240 .With seal means biased by internal pressure
241 .Face plate type
242 ..With closure for face plate opening
243 .External and internal bar or closure
244 ..Closure mounted for swinging, e.g., hinged
245 ..Plural operators
246 ..Spring biased operator
247 ..Eccentric operator
248 ..Sectional bar
249 ..Bar tethered to closure support
250 ..Integral bar and operator
251 ..Bar and operator removable with closure as a unit
252 .Pivotally or slidably mounted semispherical hood-type closure
253 .Closure members having alignable openings
254 .Secondary closure within parameter of primary closure
255 .Closures interconnected for common opening movement
256 .Superposed closures for common opening
257 ..Destructible outer closure
258 ..Destructible inner closure
259 ..Hinged
260 .With closure opening arrangements or means, e.g., opening devices
261 ..Opening means comprises explosive charge
262 ..Operator actuates closure in its opening or closing movement, e.g., foot pedal
263 ...Hinged closure
264 ....Biasing means
265 ..Frangible member or portion
266 ...About line or point of weakness
267 ....With cutting device
268 ....Non-removable member or portion
269 .....Gripping means attached to or integral with member or portion, e.g., pull tab
270 ....With gripping means, e.g., pull tab
271 .....Provided with vent
272 .....Rivet connection between pull tab and removable portion integral with pull tab
273 .....Rivet connection between pull tab and removable portion integral with removable portion
274 .....Adapted for engagement with special tool, e.g., slotted key
275 ......With strip or tool guide
276 ....Line of weakness extends circumferentially of receptacle mouth
277 ...With cutting, punching, or cutter accommodating means
278 ....Puncturing tool serves as closure
279 ....Wire, string, or like, e.g., rip cord
280 .....About seam
281 ..Released by axial or radial pressure
282 ...Closure tilts on fulcra portions or rocker points
283 ....Hinged closure
284 ..Special tool or tool engaging means
285 ...Attached raising or pry-off means
286 ....Repositionable about closure periphery
287 .Closure adaptable for various sizes or openings
288 .Removable closure guided in rotary movement, e.g., screw
289 ..Threads formed or altered upon application of closure
290 ..With means to hold closure in a full or partially open position
291 ..Swinging and rotary
292 ...Biased
293 ..Quick removal, e.g., bayonet
294 ...Elliptical closure flange or passage mouth
295 ...With biased gasket or packing

CLOSURES
.Removable closure guided in rotary movement, e.g., screw
..Quick removal, e.g., bayonet
296 ...Interrupted threads
297 ...Keyhole slot
298 ...Radially inwardly and outwardly extending interlocking lugs
299 ....With anti-friction means
300 ...Locking lug engages "L" or cresent-shaped keeper slots
301 ...Lugs engage cammed keeper
302 ....Biased or resilient lugs
303 ..With valve or vent means
304 ..With packing or gasket
305 .Warped cover flexed into operative position
306 .Removable closure retained by resilient distortion of preformed configuration, e.g., detent
307 ..Interlocking means internal of passage mouth, e.g., stopper-type closure
308 ..With gasket or packing
309 .Removable closure retained by ductile type in situ deformation, e.g., crimp
310 ..With gasket or packing
314 .Crossbar carries closure and serves as closure fastener
315 .Having means for securing or retaining closure in its closed position, e.g, fastening devices
316 ..With internal pressure-condition release
317 ..Tilting handle fastens while pouring
318 ..Handle attached
319 ..Ring type
320 ...For applying radial pressure, e.g., contractable bands encircling member
321 ....Lever operated
322 ..Comprising "U" shaped or bifurcated members, e.g., pivoted bails
323 ..Elongated members (e.g., leaf spring, radiating arms) acting between face of closure and opposed abutments or walls of the container
324 ..Clamps, clips, hooks or latches
325 ...Screw actuated
326 ...Biased
327 ..Threaded member, e.g., stud, bolt or screw
328 ...With retainer
329 .Mounted for compound movement
330 ..About container carrying bail
331 ..Swinging and sliding
332 ..Multiple plane swing
333 ..Swings about multiple pivots
334 .Mounted for swinging, e.g., hinged
335 ..With means holding closure in open position
336 ..About pivot at right angle to plane of closure
337 ..Hinge members formed integrally with closure and closure support
338 ...Complementary hinge elements frictionally interlocked
339 ...Flexible hinge
340 ...Hinged formed by overlapping reentrant flanges on closure and closure support
341 ...Hinge element deformed in situ
342 ...Complementary hinge elements interlocked by separate member
343 ....Pintle
344 ..With gasket or packing
345 .Closure guided in reciprocating movement
346 ..Having means securing closure against movement
347 ...Cammed keeper
348 ..Spring biased
349 ..Having antifriction means
350 ..Flexible closure
351 ..Closure encompasses passage mouth
352 .Removable closure retained by friction
353 ..With closure guiding means
354 ..Closure received by upwardly opening trough at passage mouth
355 ..Passage mouth received by downwardly opening channel in closure
356 ..Closure flange embraces passage mouth
357 ...With gasket or packing
358 ..With gasket or packing
359 .Removable closure retained by adhesive or fusion means
360 .Closure controls vent in receptacle
361 .Sealing or closing means for vent or filling opening
362 ..By crimping
363 ..Nonmetallic
364 ..By application of hardenable material
365 ...With contents shield
366 .Vent means at closure, closure support juncture
367 .Vent means in closure
368 ..With reservoir for vent discharge
369 ..Antispattering cover
370 ...Screen
371 ..With filter
372 ...Screen
373 ..With means to prevent escape of contents through vent
374 ...Tortuous passage
375 .Tethered closure
376 .Ornamental
377 .Transparent
377.1 ..Percolator top type
378 .Having gasket or packing
379 .With disparate support for displaced closure
380 .Having structure to stack or nest when not in use
62 BLANK
62.1 .Corner fold
600 END WALL STRUCTURE
601 .Having an outlet or inlet opening (e.g., bunghole, etc.)
602 .Transparent
603 .With weight or counterweight
604 .One-piece side and end wall
605 ..With support structure
606 ...One-piece with container
607 ..End wall formed as a one-piece grid or mesh structure
608 ..Contoured end wall (e.g., curved, corrugated, ribbed, etc.)
609 ...Pressure responsive contour
610 .Joint or seam between sidewall and end wall
611 ..End wall and sidewall of dissimilar materials
612 ..Adhered (e.g., welded, cemented, soldered, bonded, etc.)
613 ...Plastic end wall or sidewall
614 ..Including a packing element (e.g., gasket)
615 ..Interlocked joint
616 ...Joint includes separate reinforcing element
617 ...Sidewall received in a channel in the end wall
618 ...Sidewall includes both a ledge-like area receiving the end wall and means engaging the outer surface of the end wall

END WALL STRUCTURE
.Joint or seam between sidewall and end wall
..Interlocked joint
619 ...Joint bent or rolled outwardly
620 ...Joint bent or rolled inwardly
621 ...Sidewall and end wall have interlocking grooves
622 ..Joint includes separate fastener (e.g., rivet, nail, screw, etc.)
623 ..Contoured end wall (e.g., curved, corrugated, ribbed, variable thickness, etc.)
624 ...Pressure responsive contour
625 .Removable bottom wall (i.e., not a closure)
626 .Multi-layer end wall structure
627 ..Spaced layers
628 .Support structure
629 ..Movable on container (e.g., adjustable)
630 ..Removable support structure
631 ..Fixed support structure provides alternate container orientations (e.g., angled bottom support areas)
632 ..Cushioned support structure
633 ..Support formed by downward extension of sidewall
634 ..Chime (i.e., supporting ring circumferentially attached to sidewall)
635 ..Support and bottom wall are of one-piece construction and attached to sidewall
636 ..Support attached to bottom wall
637 ..Support formed by rod or wire encased in bead folded under bottom wall
638 ..Sidewall, bottom wall and support are separate elements and attached at a common joint
639 SEPARATE REINFORCING ELEMENT
640 .Open end edge reinforcing means
641 ..Edge (e.g., rim, lip, brim, etc.) bent or rolled around a reinforcing element
642 ..Edge encompassed by U-shaped reinforcing element
643 ..Molded container including separate edge reinforcing element
644 ...Embedded element
645 .Molded container with embedded reinforcing element
646 .Externally attached sidewall reinforcing element
647 ..Spaced element supports container (e.g., cradle, end frame, etc.)
648 ..Circumferential band or belt
649 ...Handling ring or collar
650 ..Longitudinal element
651 .Internally attached reinforcing element
652 ..Extending between adjacent walls
653 ..Attached to and extending between opposite walls across the container
654 ..Circumferential
655 OPEN END EDGE CUSHIONING MEANS
656 ONE-PIECE, REINFORCED OPEN END EDGE
657 .Flange
658 .Bead
659 .Molded
660 SIDEWALL STRUCTURE
661 .Having an outlet or inlet opening (e.g., bunghole, etc.)
662 .Transparent wall or portion
663 ..Sight glass
664 ..Instrument casing (e.g., for a meter, etc.)
665 ..Two or more walls
666 .Collapsible wall feature
667 ..Wall permanently deformed when collapsed
668 .Skeleton framework
669 .Contoured sidewall (e.g., curved, corrugated, ribbed, variable thickness, etc.)
670 ..Corrugated
671 ...Axially extending only
672 ...Circumferentially extending only
673 ...Circumferentially and axially extending
674 ..Embossed
675 ..Molded container
676 .Apertured sidewall (e.g., hole, slot, etc.)
677 .Sidewall seam or joint
678 ..Adhered (e.g., welded, cemented, soldered, bonded, etc.)
679 ...Butt welded joint
680 ...Overlapped
681 ..Including packing element (e.g., gasket)
682 ..Interlocked joint
683 ...Separate strip-like element
684 ....Slide connector (e.g., "C" shaped rigid strip)
685 ....H-shaped connector
686 ....Exterior circumferential clamping band
687 .....With interior circumferential backup band
688 ....Exterior strip and interior strip secured together by transverse connector:
689 ...Joint bent or rolled
690 ...Including tab on one edge which passes through slot on other edge and is bent
691 ...Snap-type (i.e., secured by resilient distortion)
692 ..Joint includes separate fastener (e.g., rivet, bolt, screw, etc.)
693 ...Removable fastener
85 R ATTACHMENTS
85 A ..Expanding bell type
85 B ..Expanding; flexible wall or partition
85 CH ..Cover holders
85 D ..Hand implement
85 E ..Handle shield
85 F ..Filling fitting
85 H ..Receptacle holders
85 K ..Bumpers
85 P ..Valve protectors
85 SP ..Spouts
85 S ..Tank systems
85 TC ..Transformer casings
85 V ..Single valve
85 VR ..Vapor recovery (tank system)
85 VS ..Vapor saving (tank system)
86.1 .Filling member
86.2 ..Automotive type
86.3 ...With anti-siphon means
86.4 ..Nonrefillable
87.1 .Disinfectant device
87.2 ..Spray
88.1 .Fire prevention
88.2 ..Screen (flame arrester)
88.3 ..By inert gas
89.1 .Pressure relief means
89.2 ..Frangible pressure relief means
89.3 ...With cutting means
89.4 ..Fusible pressure relief means
90 .Scrapers
90.2 .Drinking, e.g., mustache guards
90.4 ..Splash or spill inhibiting
90.6 ..Lip guards
91 BAIL EARS
92 .Wire

93	FOLLOWERS
94 R	HANDLES
94 A	..Integral
94 B	..Multiple container
95	.Wire
96	.Holders
890	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	RUPTURE PROOF
901	LIQUIFIED GAS CONTENT (CRYOGENIC)
902	FOAM
903	INSULATING JACKET FOR BEVERAGE CONTAINER
904	PAIL OR BUCKET OF FLEXIBLE OR FLACCID MATERIAL (E.G., FABRIC, RUBBER, ETC.)
905	FLEXIBLE FUEL TANK FOR A VEHICLE
906	BEVERAGE CAN (I.E., BEER, SODA, ETC.)
907	.Collapsible
908	TRASH CONTAINER
909	.Segregated
910	.Table-top type
911	..Can converted to ash container
912	COOKWARE (I.E., POTS AND PANS)
913	VENTILATED CONTAINER
914	CONTAINER CONTOURED TO FIT A BODY PART
	******************************
	DIGESTS
	******************************
DIG 1	Beer barrels
DIG 2	Bottle crates
DIG 3	Breaker strips and sealing strips
DIG 4	Bushings
DIG 5	Antidrip
DIG 6	Drains
DIG 7	Flexible tubes
DIG 8	Ice cream cabinets
DIG 9	Insulating materials
DIG 10	Lunch kits
DIG 11	Materials
DIG 12	Molded
DIG 13	Odd-shaped
DIG 14	Plastic
DIG 15	Plastic bottle crates
DIG 16	Pressure indicators
DIG 17	Pressure and temperature locks
DIG 18	Refrigerator linings
DIG 19	Rubber plugs and caps
DIG 20	Safety locking devices
DIG 21	Shields
DIG 22	Seamless
DIG 23	Fiberglass
DIG 24	Tank trucks
DIG 25	U-shaped, sectional
DIG 26	Vanity
DIG 27	Vents
DIG 28	Washtubs
DIG 29	Welded seam
DIG 30	Biodegradable
DIG 31	Sonic seal
DIG 32	Radiator cap
DIG 33	Gasoline tank cap
DIG 34	Anti-tamper pharmaceutical capsules (e.g. tamper indicating or resistant)

CLASS 221 ARTICLE DISPENSING

DECEMBER 1990

1 PROCESSES
2 WITH RECORDER, REGISTER, INDICATOR, SIGNAL OR EXHIBITOR
3 .Audible
4 .Dispenser part position or adjustment indicator
5 ..Article selection indicator
6 .Empty source indicating means
7 .Dispenser operated register
8 .Dispenser operated display device
9 AUTOMATIC CONTROL
10 .Of supply to dispenser
11 ..By replacing depleted stack with a similar stack
12 .Of article releasing outlet closure
13 .Of discharge assistant operation
14 ..In response to depletion of supply
15 WITH TIMING OR DELAY MECHANISM
16 .Dashpot restrained discharging means
17 WITH EMPTY SUPPLY SOURCE RESPONSIVE MEANS
18 .Having motion inhibitor for discharge means
19 ..Latch means
20 ...On follower
21 WITH DISPENSER MALFUNCTIONING RESPONSIVE MEANS
22 SUBSEQUENT ARTICLE SEPARATING MEANS ACTUATED BY ARTICLE REMOVAL
23 .Article operated discharge assistant
24 SIMULATIONS
25 PROGRESSIVELY DESTROYED CELLULAR MAGAZINE-TYPE SUPPLY SOURCE
26 WITH ARTICLE TEARING OR DEFORMING SUPPLY RETAINING MEANS
27 CAPTIVE ARTICLE TYPE
28 .With means to remove articles from point of use
29 .Slidable relative to supporting guide
30 WITH CUTTER OR PUNCH
31 .To form outlet opening
32 ..Tear strip type
33 CONCURRENT SEPARATION AND DISTORTION OF FLEXIBLE ARTICLE (E.G., NAPKIN HOLDERS)
34 .Plural sources, stacks or compartments
35 ..Oppositely faced dispensing outlets
36 .By ejecting means
37 ..Actuated by source container section movement
38 ..Interleaved folds
39 ..Preliminary motion in direction away from outlet
40 ..Compound motion of ejecting means
41 ..Stationary guide or abutment cooperating with leading edge of article
42 ..Rotary
43 ...Friction roller
44 .Adaptable to use with different size articles
45 .With casing or support
46 ..With removable supply magazine
47 .With presentation of non-coextensive or distorted fold
48 ..By cooperation of interleaved folds
49 ...Refill package
50 ...With starter strip
51 ...Feeding from concave side of a stack of folded or arcuate articles
52 ...With follower
53 ...With means to relieve stack pressure
54 ....Movable
55 ..By stationary guide or abutment acting on non-coextensive folds
56 .With follower
57 ..With replenishment interlock
58 ..Spring form
59 ..Spring biased
60 ...Pivoted
61 .With separate replenishment or access inlet means
62 ..Pivoted container component
63 .Deformation by non-coextensive outlet opening
64 WITH FLEXIBLE SUPPLY CONTAINER WALLS
65 WITH COLLAPSIBLE OR TELESCOPING SUPPLY CONTAINER WALLS
66 ARTICLE DELIVERY DEPENDENT UPON INSERTION OF REPLACEMENT ARTICLE
67 DISPENSING FROM STAGGERED STACKS
68 PLURAL DISPENSING STACKS FORMED FROM SINGLE SOURCE
69 CELLULAR MAGAZINE TYPE
70 .Rolled or folded web type magazine (e.g., flexible pin strips)
71 ..With means for feeding web for dispensing
72 ...Article release by magazine movement
73 ....By stripping off surface adhered articles
74 ...With ejector
75 .With article movement from cell to cell
76 .Conveyer type
77 ..Multiple strand conveyer
78 ...With ejector
79 ..With means to remove article from cells
80 ...Stationary ejector
81 ...Interrelated with means to advance cell position
82 ..With gravity discharge from cells
83 ...With outlet closure operator and interrelated magazine advancing or locking means
84 ...Flexible conveyer belt carried cell structure
85 ....Having horizontal article carrying run
86 ...With relatively movable cell or component thereof
87 .With non-gravity means to remove articles from cells
88 ..Single ejecting means for all cells
89 .Articles discharged by relative movement of cell structure components
90 ..Pivoted shelf or door
91 ..Sliding closure common to plural cells
92 PLURAL SOURCES, STACKS OR COMPARTMENTS
93 .Dispensing from plural sources by single actuation
94 ..With selection of number of sources
95 ..Single discharge means successively loading from plural sources
96 .With fluent material dispenser
97 .With non-dispensing compartment
98 ..Movable or removable relative to dispensing compartment
99 ...Sliding drawer
100 ...Hinged
101 ..Movable or removable common wall
102 ..Used article compartment
103 .Each entirely depleted in order
104 ..Replacement source or stack movement relative to discharge means
105 ...Pivotal movement about a fixed axis
106 ...Rectilinear movement
107 ..Feeding from subsequent source or stack prevented by articles in discharge path
108 ...By article presence or absence responsive means
109 ....Progressive release of multiple gates for three or more sources or stacks

	PLURAL SOURCES, STACKS OR COMPARTMENTS
	.Each entirely depleted in order
110	..Serially activated discharge assistants
111	..Articles present in dispensing stack block subsequent stack
112	.Dispensing from sources sequentially
113	..Sources rotate relative to common outlet
114	..By individual interrelated segregating means
115	...Axially spaced
116	...Alternately
117	....With oppositely faced outlets
118	....From relatively stepped sources
119	.Rotatably mounted or endless belt carried source assembly
120	..Axially spaced sets of peripherally arranged sources
121	..Relative to common outlet
122	...With means assuring alignment of source and outlet
123	.With discharge means for each source
124	..Separate discharge means for each source
125	...With lockout means
126	...With common selector element
127	....Selection by actuator manipulation (i.e., actuator is selector)
128	.....By reverse manipulation
129	...Electrical control
130	...Superposed dispensers
131	...Dispensers in juxtaposed alignment
132	...Annularly arranged dispensers
133	.With common discharge outlet
134	WITH MEANS TO SELECT INTERMEDIATE ARTICLES FROM STACKS
135	WITH ARTICLE TREATMENT
136	.With igniting means
137	..Match striker
138	...Positively actuated striker
139	...Ignition by manual removal of match
140	...Ignition by discharge assistant forcing match against igniter
141	....Axial movement of match
142	....Transverse movement of match
143	..Electrical
144	...Including vacuum or draft producing means
145	....Pump or fan
146	....Stack or chimney
147	...Heater energized by dispensing operation
148	..With interrelated flint lighter and dispenser operation
149	...Movement of container part initiates operation
150 R	.With cooling or heating
150 HC	...Heating and cooling combined
150 A	...Heating
151	WITH MEANS FOR BLOCKING OR DISABLING EJECTOR OR RELEASER
152	.By engagement with slot, notch or protuberance
153	.Motor operated
154	WITH LOCK, LATCH, OR SEAL FOR CONTAINER AND/OR SUPPORT
155	WITH TRANSPARENT INSPECTING OR VIEWING MEANS
156	WITH ORIENTING
157	.Segregation of aligned articles according to orientation
158	..With recombining of articles
159	..With return to supply
160	...Within confines of, or overlying supply container
161	....By means movable relative to terminal outlet
162	.....Rotary wheel or brush
163	.Selective separation from supply
164	..By movable lifting means engageable with aperture, groove, enlargement or depression in article
165	...Head only of headed article
166	...By individual picker finger
167	..Rotatable or oscillatable means
168	...With agitator or exit clearing means
169	...With multiple traveling shaped outlets
170	....Outlets formed by pins
171	.By manipulation of successive individual articles
172	..Gravitating articles contacting fixed abutments
173	..By positive rotation of articles
174	SUPPLY FEED MEANS TO DISPENSING HOPPER
175	WITH STACK FORMING MEANS
176	.From stack source
177	.Pivoted hopper
178	.Movable chute or part thereof
179	..Within hopper
180	...Oscillating pivoted chute section
181	...Axially movable
182	.Member rotatable or oscillatable about inclined axis
183	.Agitator carried by or interrelated with discharging means
184	..Rigidly connected
185	AMBULANT OR BODY SUPPORTED
186	SUPPLY CONTAINER MOVABLY MOUNTED FOR DISPENSING
187	.With means for moving separated article transversely
188	.Pivotally mounted supply container
189	..Relative to stationary article trap
190	.Vertical motion to separate articles
191	DISPENSER DELIVERING TO STATIONARY ARTICLE SUPPORT FOR MANUAL REMOVAL
192	.With article elevation to raised support
193	.With article motion retarding baffle at inlet to support
194	.Articles released for gravity deposit in or on support
195	..By discharge assistant
196	...Movable segregating chamber
197	WITH SUPPLY CARTRIDGE OR CONTAINER REMOVABLE FROM ENCLOSING CASING
198	.With follower operating in cartridge or container
199	COMBINED OR CONVERTIBLE
200	WITH MEANS TO AGITATE, VIBRATE OR JAR ARTICLES IN SUPPLY CONTAINER
201	.Three or more agitators or discharge assistants in series
202	.Rigidly mounted on or incorporated in discharge assistant
203	..Rotary
204	.By movement of container section
205	..Pivoted wall section
206	WITH QUANTITY PRESELECTION MEANS
207	.Variation by adjustment
208	WITH DISCHARGE ASSISTANT
209	.Cooperating with movably mounted supply container
210	.Article adhering or gripping type
211	..Suction carrier
212	..Magnetic
213	..Impaling
214	...With means to strip articles from impaling means
215	....Cam-operated stripping means
216	....Stationary abutment
217	..With endless or rotary article gripper carrying means
218	...Endless belt carrier

WITH DISCHARGE ASSISTANT
.Article adhering or gripping type
..With endless or rotary article gripper carrying means
219 ...Having cam-operated pivoted jaw type gripper elements
220 ..Having spring form, resilient gripper elements
221 .Multiple, simultaneously acting and circumposed (e.g., cup dispensers)
222 ..Rotary
223 ..Oscillating
224 .Plural or combined with manipulating means
225 ..Three or more
226 ..Follower
227 ...With follower disabling, retracting or releasing means
228 ...With source container cover related ejector
229 ....Cover controlled ejector
230 ...With interrelated actuators
231 ...With rotary ejector
232 ...With reciprocating (including oscillating) ejector
233 ..Means removing article from movable segregating chamber
234 ...Mechanically interconnected with segregating chamber
235 ...Spring pressed or gravity actuated finger
236 ..Separately acting in series
237 ...All rotary
238 ...All reciprocating (including oscillating)
239 .Delivering segregated articles to holddown means
240 .Acting on fold or non-coextensive part
241 .With size adjusting means
242 ..Magazine
243 .Lost motion actuation and/or yieldable wall
244 .Self-compensating for decreasing supply
245 .With return stroke inhibitor (i.e., full-stroke mechanism)
246 .Segregation by sliding movement of cover relative to container
247 .Ejector with relatively movable outlet closure
248 ..Mechanically linked to or locked by ejector
249 ...Closure moves ejector
250 ..Opened by dispensed article
251 .With separate holdback means
252 .With plural article outlets
253 .Endless belt carried
254 .Movable through hopper to separate and elevate articles
255 .Article retained by discharge assistant for manual removal
256 ..With pocket for retaining article
257 ...Having means facilitating article removal
258 .Motor-operated
259 .Surface contact only (i.e., friction)
260 .Deformable discharging element
261 .Ejector cooperating with article direction changing deflector
262 .Compound motion
263 .Having movable segregating chamber (i.e., trap chamber)
264 ..Axial inlet and outlet
265 ...Rotary
266 ..Single inlet-outlet
267 .Segregation by ejection through resilient-type outlet
268 .Reciprocating (including oscillating)
269 ..With integral outlet closure
270 ..With retractable pusher element
271 ..Spring biased to discharging position
272 ..Relatively movable actuator
273 ...Cam
274 ...Lever or link
275 ...Gearing
276 ..Spring biased
277 .Rotary
278 .Fluid pressure
279 .Follower
280 ..With cooperating interior deflector
281 WITH SEPARATE INLET FOR REPLENISHMENT OR ACCESS
282 WITH CASING OR SUPPORT
283 .Bracket or suspension supported
284 .Weighted base or support
285 .Base or support for angular disposition of supply container
286 .With spaced casing
287 WITH REMOVABLE CONTAINER ENCLOSING SUPPLY
288 TILTABLE CONTAINER WITH TRAP
289 MECHANICAL RELEASE OR SEPARATION OF ARTICLES
290 .With additional article manipulating means
291 ..Article inversion
292 ..Rectilinearly reciprocating
293 ...Interrelated releaser and manipulating means
294 .Delivering segregated articles to holddown
295 .Latch released, article weight-operated
296 .Dispensing plural articles
297 .Multiple, simultaneously acting and circumposed controllers
298 .Separately acting series controllers
299 .Plural integral transversely acting controllers
300 ..Three or more
301 ..Pivoted
302 WITH FRANGIBLE ELEMENT FOR OUTLET
303 WITH DISPENSING-TYPE OUTLET
304 .Adjustable size
305 .Folded flat blank type
306 .With closure for outlet
307 .Resilient
308 ..Plural series
309 ..Having slot facilitating grasping of article
310 ..Plural spring biased or resilient fingers
311 WITH DEFLECTOR FOR PARTIALLY SEPARATING ARTICLE
312 R MISCELLANEOUS (E.G., INTERIOR ARTICLE GUIDING MEANS)
312 A ..Articles on rod
312 B ..Magazine charging
312 C ..Special dispensing packages
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DIGEST
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DIG 1 Storage retrieval

1 PROCESSES OF DISPENSING
590 .Molten metal
2 CHECK CONTROL
3 GAS OR VAPOR DISPENSING
4 .With nongaseous material dispensing
5 .With cutter or punch
6 .Parallel connected, serially used
591 MOLTEN METAL DISPENSING
592 .With heating or cooling
593 ..Heating
594 .Flow controllers or assists
595 ..Fluid pressure assist
596 ..Piston displacement
597 ..Closure
598 ...Movable about an axis
599 ....Perpendicular to flow
600 ...Reciprocating transverse to flow
601 ...Stopper operator structure beneath receptacle
602 ...Stopper operator structure above receptacle
603 .Gaseous fluid engages molten metal
629 .Submersible dipper or trap chamber
604 .Tilting receptacle
605 ..Teakettle type
606 .With subjacent flow guide
607 ..Unattached
14 CUTOFF OPERATED BY SELECTIVELY PRESET VOLUME OR RATE OF FLOW-RESPONSIVE MECHANISM
15 .With means to prevent change of setting during discharge
16 .Operating cycle including reset to starting position
17 .Moving cutoff operating element with variable initial position
18 ..Having plural revolutions
19 ...Plural dials
20 ..Cutoff by valve closing
21 .Cutoff by single trapped volume
22 .Cutoff set after discharge begins
23 WITH RECORDER, REGISTER, INDICATOR, SIGNAL OR EXHIBITOR
24 .Register with shutter
25 .Plural
26 ..Two or more volume devices
27 ..Register and signal
28 ..With common operating means
29 .Plural scale
30 .Recorder
31 .With motion ratio adjusting means and/or relatively adjustable scale and pointer
32 .With zero-setting mechanism
33 ..Operating cycle including reset to zero
34 ..With means to prevent zero setting during discharge
35 ..With means to prevent discharge prior to zero setting
36 .Totalizer for successive dispenser cycles
37 ..Varying cycles or quantities per cycle
38 ..Reciprocating (including oscillating) dispenser part
39 .Audible
40 .Flow and/or overflow type
41 .Position or extent of motion indicator
42 ..Selection from plural outlets, valves or traps
43 ..Comprising an adjustable stop or stops
44 ..Scale and pointer, with detents
45 ..Flexibly connected indicator and dispenser element
46 ..Common screw means for indicator element and dispenser part
47 ..Indicating element rigidly carried by movable dispenser element
48 ...Pivoted or rotary dispensing part
49 ...Slidable indicator element projecting from container
50 ....Scale or container
51 .Float-level indicators
52 AUTOMATIC CONTROL
53 .Involving conveying conduit jacket and/or inert atmosphere (including vacuum) providing means
54 .Temperature responsive or soluble controller
55 .Constant weight, volume or pressure control by output
56 .Delivery from source controlled by quantity in discharging receiver
57 .By weight, volume or pressure of a second dispensed material
58 .By the weight of the material in the supply container
59 .Cutoff operated by rate of flow responsive mechanism
60 ..Single complete revolution of controller element
61 .Of dispensers with fluid pressure discharge assistance
62 ..Float-controlled pressure liquid
63 .Motor control
64 .Material level control
65 ..Full and/or empty interlock
66 ..Empty container cutoff
67 ..Float-operated flow controllers
68 ...Plural
69 ...For vent only
638 INCLUDING TIMER
639 .For timing dispensing period
640 ..Of beverage or beverage component dispenser
641 ...Including electrical timing circuit
642 ..Of discharge assistant
643 ...Rotary
644 ..And means for timing the period between dispensing cycles
645 ...Of aerosol dispenser
646 ....Including electrical timing circuit
647 .....And mechanical timing element
648 ......And battery power supply
649 .For aerosol dispenser
650 .For plant or animal feed dispenser
651 .For wash cycle ingredient dispenser
652 ..Movably mounted ingredient container
71 VOLUME OR RATE OF FLOW METERING
72 .With meter bypass, gas separation, antisyphon priming
73 .With hose pressure relief or maintenance
74 HOSE OR OTHER MOVABLE DISCHARGE GUIDE INTERLOCKS AND INTERCONNECTIONS
75 .Switch or motor control and discharge controller actuator
77 WEIGHING
78 SIMULATIONS
79 .Firearms
80 WITH CUTTER AND/OR PUNCH
81 .To form dispensing opening in container
82 ..With discharge assistant
83 ..Mounted for relative motion
83.5 ...With sleeve or rest for container cut
85 ..For cutting plural openings
86 ...With sleeve or rest for container cut
87 ..With container-destroying means
88 ..With sleeve or rest for container cut
89 ..With nonfriction fit means to secure discharge guide to container
90 ...Abutment for container interior
91 ...Screw
92 COLLAPSIBLE WALL-TYPE CONTAINER
93 .With additional article-holding means
94 .Plural container and/or compartment

COLLAPSIBLE WALL-TYPE CONTAINER
95 .With wall-collapsing means
96 ..With interconnected flow controller or closure operating means
97 ..Plural types
98 ...Winding and roller types
99 ..Winding type
100 ...With casing or support
101 ..Roller type
102 ...Plural roller
103 ..Clamping type
104 ..Twisting type
105 .With casing or support
106 .Combined
107 .Nonmetallic
108 DRIP, LEAKAGE OR WASTE CATCHING OR DISPOSAL
109 .Return to main supply
110 ..Valved
111 ..With enclosing cover
113 WITH ILLUMINATOR OR BURNER
576 INKWELL
577 .With support (i.e., inkstand)
578 .Including nongravity feed to dip well
579 ..Spillover type
580 ..Including discharge assistant supporting and movable with dip well
581 ...Diaphragm-type discharge assistant
582 ...Biased for resetting
583 .Including dip well filled by immersion into supply
584 .Tiltable to fill dip well
585 .Barometric
586 ..Including base supporting removable inverted container
587 ...And valve or base-opened closure
588 ..Dip opening below peak level of supply
589 ...Including closure or valve for dip well outlet
129 PLURAL SOURCES, COMPARTMENT, CONTAINERS AND/OR SPACED JACKET
129.1 .Cabinet-type dispenser for single mixed drinks
129.2 ..One ingredient operates dispensing means for another
129.3 ..With ingredient charge measuring
129.4 ...Plural measured charges in single drink
130 .At least one nondispensing
131 ..Jacketed
132 .Three or more diverse sources
133 .Measured discharge from one and indeterminate flow from another
134 .Interconnected discharge volume varying means
135 .With discharge assistant for each source
136 ..Single, operable on material from all sources
137 ..Unitary reciprocating
138 ..Two or more rotary or swinging
139 ...Co-axial
140 ....Vertical axis
141 .....Single plane
142 ...Parallel axes
142.1 .Hand manipulable shaker type
142.2 ..Selection by relative movement between containers or containers and casing
142.3 ..Containers removable from base or casing
142.4 ..Selection as a result of container shape, configuration or arrangement
142.5 ..Container within container concentrically arranged
142.6 ..With common selector
142.7 ...Interconnected relatively movable closures
142.8 ...Bodily slidable closure
142.9 ...Axially rotary closure for axial outlets
143 .Packing or stacking arrangements
144 .Rotatably mounted assembly
144.5 .With selecting means
145 .With common discharge
146.1 WITH HEATING OR COOLING MEANS
146.2 .Heating only
146.3 ..Having an aerosol
146.4 ..By steam
146.5 ..By electrical energy
146.6 .Cooling only
147 WITH REFILL PREVENTING MEANS
148 WITH CLEANING MEANS
149 .Element extending through dispenser outlet
150 ..Operated by resilient container walls
151 ..Extending inwardly through container outlet
152 WITH CONVEYING CONDUIT JACKET AND/OR INERT ATMOSPHERE (INCLUDIND VACUUM) PROVIDING MEANS
153 WITH LOCK OR FASTENING SEAL
154 INSPECTION DEVICES
155 .External gauge tubes
156 .Sight openings
157 ..Graduated for level determination
158 .Graduated transparent container or trap
159 .Transparent flow-line section
160 MOVABLY MOUNTED SUPPLY CONTAINER
161 .Vibratory (i.e., for agitation of container contents)
162 .Moving relatively to trap, impeller or valve to cause discharge
163 .Adjustable relatively to discharge assistant to vary the discharge volume
164 .Tiltable
165 ..For refilling or changing cartridges or containers
166 ..For gravity discharge
167 .Rotatable
168 ..Vertical axis
168.5 ...Circumferentially arranged measuring or trap chambers
169 ..Peripheral discharge
170 ...With trap chambers
171 ...With sleeve-type discharge controller
172 ...With annular outlet
173 WITH CASING OR SUPPORT
174 .Pole or extension
175 .Body carried and/or operated type
608 .Ambulant
609 ..With assembly or disassembly feature
610 ...Dispensing means detachably carried upon vehicle
611.1 ..With guide or guide line marker
611.2 ...Mortar applying machine
612 ..With height adjustment
613 ..Dispensing means driven or controlled by surface contact
614 ...Ground wheel operated discharge controller
615 ...With variable transmission
616 ...With clutch
617 ...Fluid flow discharge
618 ...Plural ground wheel driven discharge assistants in series
619 ...Ground wheel driven vibrator or jarring means
620 ...Rotary motion of ground wheel to reciprocating, oscillating, or linear motion
621 ....Fluid pump
622 ...Endless conveyer
623 ...Ground wheel driven rotary discharge assistant or rotary agitator
624 ....With adjustable discharge controller

	WITH CASING OR SUPPORT
	.Ambulant
	..Dispensing means driven or controlled by surface contact
	...Ground wheel driven rotary discharge assistant or rotary agitator
	....With adjustable discharge controller
625	.....Sliding gate or shutter
626	..Motor operated dispensing means
627	...Power take off
628	..Manually actuated fluid pump
179	.With pedal-controlled discharge means
179.5	.Removable for discharge
180	.Bracket or suspension supported
181	..For bottom discharge
182	.Enclosing cover for actuating parts of discharging means
183	.Jacketed
184	.Extended sidewall base
185	.For bottom discharge
186	.Foot piece or rest
187	WITH WICK OR ABSORBENT MATERIAL FEED
188	WITH FLUID TRAP SEAL FOR INLETS OR OUTLETS (E.G., VENTS)
189	WITH STRAINER, FILTER, SIFTER, FLAME ARRESTER OR FORAMINOUS GUARD
190	WITH MATERIAL TREATMENT OR CONDITIONING MEANS
191	WITH TOOL OR IMPLEMENT HANDLE
192	COMBINED
630	FLUID FLOW DISCHARGE
631	.Fluid flow generated by manually actuated working member
632	..Flexible working member
633	...Bellows or bulb
634	..Telescoping supply container
635	.Pressurized aerosol container
636	.From movable trap chamber
637	.Open blast
195	WITH GAS AGITATION
196	JARRING AND/OR VIBRATING
196.1	.Hand manipulable shaker type
196.2	..Movable outlet element
196.3	...Pattern-type outlet with hole clearers
196.4	...Caged outlet element
196.5	..Guided or restrained internal element
197	.Movable or conveyer-type trap chamber
198	.Single outlet bounded by plural vibrating members
199	.Bottom forming member reciprocable (including oscillatable)
200	.Member reciprocable (including oscillatable) transversely of material flow
201	.Discharge rotor is actuator for vibratable wall
202	.Supply container wall flexing
203	..Flexible wall
204	SIPHON COMBINED WITH DISCHARGE ASSISTANT
205	NONGRAVITY FEED TO TRAP OF VACUUM, GRAVITY, OR MANUAL REMOVAL TYPE
206	RESILIENT WALL
207	.Supply container delivering to receiving chamber
209	.Fluid pressure generating pump or pulsator and/or removable flexible wall closures
210	.With container handle or handgrip
211	.Internally extending outlet pipe
212	.With flow controllers or closures
213	..Resilient wall actuated
214	.Wall deflecting means
215	.Nonmetallic
216	AGITATOR AND/OR EJECTOR OPERATING ON MATERIAL IN EITHER (1) CONVEYER-TYPE DISCHARGE ASSISTANTS HAVING TRAP CHAMBERS OR TRANSVERSE GROOVES, OR (2) MOVABLE TRAP CHAMBERS
217	.Mounted on or in conveyer or movable trap chamber
218	..Radially movable ejector in rotary conveyer or trap chamber
219	...Double-ended ejector
220	.Meshing conveyer trap or groove and ejector rotor
221	.Cam-operated agitator or ejector
222	.Pivoted ejector
223	..With pivoted striker
224	.Ball or roller form agitator or ejector
225	.Resilient ejector
226	AGITATOR FOLLOWED BY DISCHARGE ASSISTANT AND/OR INTERCONNECTED DISCHARGE CONTROLLER
227	.Three or more in series
228	.Flexible or pivoted agitator carried by assistant or controller movable about an axis
229	.Axially aligned, with axially rotary and longitudinally movement
230	.Biasing means constitutes agitator
231	.Free engagement-type connection
232	.Connection through eccentric carried by rotary assistant or controller
233	.One rotary and one reciprocating (including oscillating)
234	..Reciprocating, nonpivoted
235	...Rotary agitator
236	.All rotary
237	..Relatively rotatable rings and/or plates
238	..Parallel axes
239	..Coaxial
240	...Helix or vane agitator and terminal element
241	...Agitator and terminal screw, helix, or vane
242	...Agitator rigidly mounted on succeeding device
243	.All reciprocating (including oscillating)
244	..Relatively movable in parallel planes, nonpivoted
245	..Pivoted and nonpivoted reciprocating elements
246	..Reciprocable axially of outlet
247	..Pivoted only
248	...Unitary
249	FLOATING PISTON WITH PLURAL OR ALTERNATE DISCHARGE
250	.With discharge volume varying means
251	WITH DISCHARGE ASSISTANT (E.G., IMPELLER, PUMP, CONVEYER, MOVABLE TRAP CHAMBER, ETC.)
252	.Plural
253	..With material-operated differential piston
254	..Three or more in series
255	..Pumps only
256	..Follower combined with casing enclosed impeller
257	...Interconnected with movable nozzle
258	....Utilizing fluid pressure and/or motor
259	....Follower and impeller coaxial or parallel and interconnected
260	...Follower and impeller coaxial or parallel and interconnected
261	....Utilizing fluid pressure and/or motor
262	...Utilizing fluid pressure and/or motor
263	..Utilizing fluid pressure and/or motor

WITH DISCHARGE ASSISTANT (E.G., IMPELLER, PUMP, CONVEYER, MOVABLE TRAP CHAMBER, ETC.)
.Plural
264 ..Rotors with concentrically arranged sets of axial trap chambers
265 ..In sets
266 ...With selecting means
267 ...With common discharge volume varying means
268 ....Variable capacity rotors
269 ...Container wall sections carrying set units
270 ...With interior material discharge guides between units
271 ...Rotary
272 ....Opppositely directed
273 ....Coaxial only
274 .....Spaced units
275 ...Reciprocating (including oscillating)
276 ....Unitary
277 .....Pivoted
278 ..Alternatively usable
279 ...Movable or removable baffles or covers for nonused assistant
280 ..Single outlet formed by plural discharge assistants
281 ...Parallel rolls
282 .With discharge volume varying means
283 ..Plural
284 ..Trap chambers in series
285 ..Source and assistant relatively adjustable axially of source outlet
286 ...Sleeve-type discharge controller for outlet
287 ..Adjustment in relatively movable actuator
288 ..Interchangeable, removable or selectively usable discharge assistant or element thereof
289 ...Reversible
290 ..Adjustable deflector for conveyer-type discharge assistant
291 ..Retractable projections
292 ..Interconnected radially movable adjusting means for plural rotor projection or traps
293 ..Rotor having plural adjustable parts of rotor form
294 ...Substantially coextensive disks and/or rings, axially rotary adjustment
295 ...Axially adjustable
296 ....Disk with axially projecting pins
297 ....Cup rotor with horizontal axis
298 ....Groove or trap rotor slidable through discharge channel
299 .....With channel blocking means
300 ......With nonrotary sleeve
301 .....Rose washer bearing
302 ....Material passage parallel to axis of rotation
303 ....Groove or trap blocking means
304 .....Axial pocket trap
305 ..Movable or conveyer-type trap chamber with capacity varying means
306 ...Single inlet-outlet, adjustable bottom
307 ...Wall with straight line movements
308 ....Screw adjusting means
309 ..Adjustable stroke pump piston, pulsator or follower
310 ..With discharge controller
311 ...Rotor with discharge controller
312 ....Discharge passage between drum-type rotor and controller
313 .....Biased controller
314 .....Reciprocating nonpivoted controller
315 ....Cup rotor with horizontal axis
316 ....Sectional discharge controller
317 ....On container side of rotor
318 .With bypass or return to supply
319 .Displacement type
320 .With movable nozzle interconnected therewith
321 ..With material supply container and discharge assistant casing
322 .Movable element actuator projection through outlet
323 .With container handle or handgrip
324 ..With material supply container and discharge assistant casing
325 .Insertable cartridge or removable container
326 ..With follower
327 ...Part of cartridge or removable container
328 .With material discharge guide on container side of discharge assistant
329 .Removable or movable depending cups for rotors
330 .With plural material outlets
331 ..Of different types
332 .With vent passage for movable trap chamber
333 .Motor operated
334 ..Fluid motor
335 .Actuated by pressure of or suction on material to be dispensed
336 .With biasing means for discharge assistant and/or its casing
337 ..Joint sealing bias only
338 ...Movable encasing wall
339 ..For oscillating discharge assistant
340 ..For reciprocating piston on follower-type impeller
341 ...Biasing means within material chamber or passage
342 .With scraper or wiper for or carried by discharge assistant
343 .With retractable projections
344 .Movable or conveyer-type trap chamber
345 ..With striking or clearing means
346 ...Not part of the supply container outlet
347 ...Plural and/or interconnected with gate at point of trap reentry to supply
348 ...Sectional
349 ...Yielding
350 ....Pivoted
351 ....Reciprocating
352 ....Brush
353 ..Barometric or angle of repose
354 ..With relatively movable cutoff carried by trap chamber
355 ..With cutoff interconnected with trap chamber for operation
356 ..Dipping trap chamber, nonrotary, nonendless belt
357 ...Compound movement
358 ...Oscillating
359 ..With relatively movable actuator
360 ...Intermittent rotary
361 ..Reciprocating (including oscillating) conveyer-type trap chamber
362 ...Oscillating
363 ....Single inlet-outlet
364 .....Pivot lying in chamber rim
365 ...Plural concentric enlargements on stem
366 ...Single inlet-outlet
367 ..Rotary conveyer-type trap chamber
368 ...Single inlet-outlet
369 ....Scoop type
370 ...Axial inlet and outlet

	WITH DISCHARGE ASSISTANT (E.G., IMPELLER, PUMP, CONVEYER, MOVABLE TRAP CHAMBER, ETC.)
	.Movable or conveyer-type trap chamber
371	..Endless belt carried
372	.With material supply container and discharge assistant with casing (e.g., supply container and pump)
373	..Fluid pressure discharge
375	..With antileak or antisiphon means or full-stroke mechanism
376	..With plural-point inlet to casing
377	..Inlet trap (e.g., sump)
378	..Aligned discharge assistant, actuator, container and nozzle
379	..Telescopic outlet and/or discharge-assistant casing inlet
380	..Valve outlet
381	..Movable discharge assistant casing
382	..Internally extending outlet pipe
383	..Container-mounted pump or pulsator
384	...With piston holding means
385	...Pump or pulsator casing within supply container
386	.Container with follower
386.5	..Nonrigid follower
387	..Valved outlet, movable discharge guide and/or gas vent
388	..With side wall filling opening
389	..Fluid pressure actuated
390	..Screw actuated
391	..Intermittent grip-type actuator
392	..Ribbon-type follower and/or stand actuator
393	..Scoop type
394	.Fluid pressure
395	..Liquid pressure
396	..With pressure limiting means
397	..With pressure fluid relieving means
398	..Telescopic container and/or outlet
399	..With gas pressure supplying reservoir
400.5	..Simultaneously operative material discharge valve and pump or pulsator operating member
400.7	..Unitary mounting for fluid pressure inlet and material outlet
400.8	...With pump or pulsator
401	..Container-mounted fluid pressure generating pump or pulsator
402	...With piston or pulsator holding means
402.1	..Valve actuated by nozzle or through valve outlet
402.11	...With actuation disabling means
402.12	...With discharge orifice contamination guard
402.13	...With container end overcap having actuator
402.14	...With means to hold valve open
402.15	...With container-carried actuating lever
402.16	...With bypass for filling or charging
402.17	...With external selector of flowpath
402.18	...Separate inlets for gas and material in duct to valve
402.19	...Alternative flowpath to valve when inverted
402.2	...Pressure lock trap chamber
402.21	...Tilting nozzle
402.22	....Nozzle inner end valve headed
402.23	....Valve stem in nozzle
402.24	...Nozzle sliding in or flexing seal ring
402.25	...Rod actuator pushed through valve outlet
403	.Film accumulating type
404	.Compound motions
405	.Discharge of material from top of supply
406	.Deformable discharging elements
407	..Biased
408	.Conveyer type with deflector
408.5	.Agitator rigidly mounted on movable closure
409	.Reciprocating (including oscillating)
410	.Rotary
411	..Central discharge
412	..Helically arranged projections (e.g., screws)
413	...Screw with terminal outlet only
414	..Peripheral surface material contact
415	.Endless belt
416	SIPHON
420	DROP FORMERS
421	.Grooved closure and/or container neck or outlet
422	.With valve
423	WITH FILM ACCUMULATING MATERIAL REMOVERS
424	WITH MATERIAL RETURN TO SUPPLY
424.5	SUPPLY CONTAINERS WITH TRAPS
425	.With trap chamber cutoffs
426	..Plural traps, nonserial
427	...Single rotary cutoff member
428	...Interconnected discharge controllers
429	....For simultaneous discharge
430	...Of different capacities
431	..With plural discharge
432	...Plural level discharge volume varying
433	....Independent discharge controllers
434	..With discharge volume varying means
435	...With means to prevent adjustment during discharge
436	...Trap chambers in series
437	...Barometric or angle of repose
438	...With means to change trap chamber volume
439	....Movable cutoff of cutoff seat carrying elements
440	....Having straight-line motion
441	..With container handle or handgrip
442	..With vent passage for trap
443	..With bypass or free-flow adjustment
444	..Single inflow-outflow trap passage
445	..Nonrigidly interconnected cutoffs
446	...Free engaging element carried by one cutoff
447	...Both reciprocating, nonpivoted
448	..With relatively movable actuator
449	..With biasing means
450	..For both inlet and outlet
451	...Rigidly interconnected or unitary cutoffs
452	....Rotary and/or pivoted only
453	....Axially slidable only
454	.With tiltable container trap only
455	..Supplementary trap
456	..Single discharge passage forming trap
457	.Barometric or angle of repose trap chamber
457.5	HAND MANIPULABLE SHAKER WITH REVERSE OUTLET PASSAGE
459	STATIONARY AGITATOR
460	FUNNEL-TYPE OUTLET
461	.Movably interconnected
462	.Integral
463	ROCKABLE OR WEIGHTED
464	INTERNALLY EXTENDING OUTLET PIPE
465.1	WITH CONTAINER HANDLE OR HANDGRIPS
466	.Plural handles
467	..Detachable
468	.Vent in handle
469	.Movable handle interconnected with flow controller or closure
470	.Handle and actuator for flow controller or closure juxtaposed for one-handed manipulation

WITH CONTAINER HANDLE OR HANDGRIPS

.Handle and actuator for flow controller or closure juxtaposed for one-handed manipulation

471 ..Nonpivoted actuator reciprocable lengthwise of handle

472 ..Pivoted actuator

473 ...On handle

474 ...Generally lengthwise of handle

475 .Handle as spout, spout holder or guard

475.1 .Handle and spout for hot liquid decanters (e.g., coffee servers)

476 SPACED, ALTERNATELY SEATED FLOW CONTROLLERS OR CLOSURES FOR SINGLE OUTLET

477 RETARDED OR DELAYED ACTION FLOW CONTROLLERS OR CLOSURES

478 WITH PLURAL OPENINGS OR DISCHARGE GUIDES

479 .Coterminous (barometric)

480 .Hand-manipulable shaker, diverse-type openings (e.g., dredge top)

481 .Having flow controllers or closures

481.5 ..With movable flexible or remotely connected vent pipes

482 ..Plural and/or single for plural openings

483 ...Interlocked controllers and/or closures

484 ...Interconnected for operation and/or integral

485 ....For plural dispensing outlets

486 .....Variable number exposed and/or variably opened

487 ....Nonrigidly interconnected

488 ..For single passage into which plural passages merge

489 ...Screw-type flow controller or closure

490 SLITTED RESILIENT DIAPHRAGM OR NIPPLE

491 OUTLET ELEMENT OPERATED BY PRESSURE OF CONTENTS

492 .Axially slidable tube, sleeve, or apertured cap

493 ..Axial discharge

494 .Spring form, resilient or compressible flow controller or closure

495 .Reciprocable, nonpivoted

496 ..With biasing means

497 ...With additional means to hold against motion

498 SNAP-ACTING OUTLET ELEMENT

499 .Axially movable tube, sleeve, or apertured cap

500 GRAVITY OR INERTIA OPERATED MOVABLE OUTLET ELEMENTS

501 MOVABLE OUTLET ELEMENT ACTUATOR PROJECTING THROUGH DISCHARGE GUIDE

502 SECTIONAL FLOW CONTROLLER OR CLOSURE

503 .Interconnected for relative motion

504 MOTOR OPERATED OUTLET ELEMENT

505 WITH RELATIVELY MOVABLE ACTUATOR FOR OUTLET ELEMENT

506 .Plural flow controllers or closures

507 .Annular, outlet surrounding actuator

508 .For swingable elements in receptacle interior

509 .For nonrotary outlet element reciprocable axially of discharge opening

510 OUTLET ELEMENT IN ONE WALL, ROD ACTUATOR THROUGH CONTAINER INTERIOR AND ANOTHER WALL

511 WITH RESILIENT BIASING MEANS FOR OUTLET ELEMENT

512 .Joint sealing bias only

513 .For movable tubes, sleeves, or apertured caps

514 ..Axially slidable only

515 .For elements having plural, diverse motions

516 .For rotary elements

517 .For pivoted and swingable elements

518 .For elements reciprocable axially of discharge opening

519 AXIALLY ROTARY AND LONGITUDINALLY MOVABLE TUBES, SLEEVES, OR APERTURED CAPS

520 .Axial discharge

521 ..Axial sationary closure plug

522 AXIALLY SLIDABLE TUBES, SLEEVES, OR APERTURED CAPS

523 .Sectional, telescoping

524 .With telescopic guide pin

525 .Axial discharge

526 MOVABLE MATERIAL DISCHARGE GUIDE

527 .Foldable, bendable, collapsible or flexible

528 ..Closure type

529 ..With flow controller or closure

530 ..Nonuse securing means

531 .Closure type

532 ..With additional flow controller, closure or seal

533 .Swingable

534 ..Into container recess

535 ..From container interior

536 ..With flow controller or closure

537 .With flow controller or closure

538 NONUSE HOUSING OR SECURING MEANS FOR DISCHARGE GUIDES

539 .Reversible to extend into or out of container

540 OUTLET SEATED IN CONTAINER RECESS

541 WITH FRANGIBLE ELEMENT FOR OUTLET

542 WITH PACKING-TYPE SEAL FOR OUTLET

543 WITH SINGLE STRAND, CORD OR WIRE CONNECTOR FOR REMOVABLE OUTLET ELEMENTS

544 WITH FLOW CONTROLLER OR CLOSURE

545 .Plural and/or carried by separably attached element

546 ..Cap carried axial plug

547 .With interior material guide or restrictor

548 .Rotary, axially

549 ..With axial longitudinal motion

550 ...And additional pivotal motion

551 ...Nonapertured screw cap

552 ...Screw plug or disc

553 ..Apertured sleeve or cap, nonaxial discharge

554 ..Plug

555 ..Between fixed plates or flanges

556 .Pivoted

557 ..Pivot axis parallel to axis of outlet opening

558 ..Bail type

559 .Reciprocatory

560 ..Arcuate path

561 ..Between fixed plates or flanges

562 .Cap

563 .Plug

564 WITH INTERIOR MATERIAL GUIDE OR RESTRICTOR

565 SIFTER, SPRINKLER OR PLURAL OPENING PATTERNS

566 NOZZLES, SPOUTS AND POURING DEVICES

567 .With separable attaching means

568 ..Screw

569 ..Abutment for container interior

570 ..Rim mounted, interengaging groove and bead or flange

571 .Antidrip

572 .Integral with container walls

573 .Reinforced or with container-connected brace

	NOZZLES, SPOUTS AND POURING DEVICES
574	.With folded seam
575	MISCELLANEOUS (E.G., OUTLET SHAPES)
	********************************
	DIGEST
	********************************
DIG 1	Xerography

CLASS 223 APPAREL APPARATUS

1	MISCELLANEOUS
1.1	DRESS OR SKIRT BOTTOM TRIMMING MEANS
2	COLLAR, CUFF, AND BOSOM MAKING
3	.Pasting, folding, and drying
4	.Reinforcing
6	HOOP SKIRT MAKING
7	HAT MAKING
8	.Wire frame forming
10	.Sizing and dipping
11	.Pinning and clearing
12	.Shaping
13	..Fluid pressure
14	..Brim curling
15	..Stretching
16	..Brim trimmers
17	..Brim wirers
18	.Napping
19	.Clipping or shaving
20	.Pouncing and polishing
21	.Ironing
22	.Banding, binding, and lining
23	.Cleaning
24	.Blocks and forms
25	..Adjustable
26	...Heated
27	GARMENT STIFFENER MAKING
28	PLAITING, FLUTING, AND SHIRRING
29	.With cross creasing
30	.Reciprocating blade
31	..Slotted bed
32	.Intermeshing teeth
33	.Boards
34	.Fold guides
35	.Implements
36	..Hand irons
37	FOLDING
38	.Templet and infolding
39	TURNING
40	.Telescopic
41	.Abutting
42	.Work-gripping rod
43	.Fluid turning
44	MAKING, WORKING, AND ATTACHING TRIMMINGS
45	.Fabric spotting
46	.Bow or tassel
47	.Feather working
48	.Bead stringing
49	ASSEMBLING GARMENT SUPPORTERS
50	TAPE INSERTING
51	HEATING AND STEAMING
52	FORMING, PRESSING, MOLDING, AND STRETCHING
52.1	.Collar, cuff, or neckband ironers
52.2	..Folders and curlers
52.3	...Folders
52.4	...Curlers
52.5	..Edge ironers
52.6	...Folded edge
53	.Corset
54	.Dress shield
57	.Pressing or molding
60	..Stocking
61	.Stretching
63	..Inside trousers frame
65	..Inside tie frame
66	.Forms
67	..Inflatable
68	..Dress, coat, or skirt
69	...Drying and stretching frames
70	...With heating or steaming
71	...Form retainers
72	..Trousers or sleeve
73	...Heating or steaming
74	...Expansible
75	..Stockings
76	...With heating or steaming
77	...Expansible
78	..Glove
79	...Heated
80	...Expansible
81	..Neckwear
82	...Tie
83	...Form retainers
84	..Form retainers
85	GARMENT HANGERS
86	.Insect repelling and perfumed
87	.Sheet material
88	.Combined type
89	..Foldable and telescopic
90	...With clamp
91	..With clamp
92	.Coat or dress
93	..With clamp
94	..Foldable or telescopic
95	.Skirt or trousers
96	..With clamp
97	.Fur scarf or muff
98	.Covers
99	NEEDLE THREADERS
100	DARNING LASTS
101	THIMBLES
102	NEEDLES
103	.Tape
104	.Awl
105	CURTAIN ROD THREADERS
106	SPOOL AND IMPLEMENT HOLDERS
107	.Work boxes and baskets
108	.Implement holders
109 R	..Needle or pin
109 A	....Magnetic
111	PUTTING ON OR REMOVING GARMENTS
112	.Stockings from forms
113	.Boot and shoe
114	..Bootjacks
115	...Folding
116	...Movable grip jaw
117	...With toe engager
118	..Shoehorns
119	...Gripping
120	SUPPORTS, BASES AND STRANDS

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DIGESTS

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DIG 1	Tie hanger
DIG 2	Holders and clamps
DIG 3	Reversible hanger
DIG 4	Hooks

101	CARRIED BY ANIMATE BEARER
44.5	.Hod
103	.Fish or game stringer or holder therefor
148	.Liquid-holding receptacle carried by, or formed as structural part of, carrier
149	.Receiver holding butt end of rifle or shotgun stock
150	.Sling attached to rifle or shotgun
151	.Convertible to, or usable as, different device or different type of carrier
152	..Watch carrier
153	..Backpack or component thereof
154	...Forming tent or component thereof
155	...Forming seat or component thereof
156	...Forming bed or litter or component thereof
157	.Article or person supported by plural bearers
158	.Carrier for person
159	..In upright or sitting position
160	...Two attaching means (e.g., straps, etc.) crossing different shoulders
161	....And seat mounted on or formed as part of framework or rigid shield
162	.Including or carrying a reel
163	.Mounted on or formed as part of belt buckle
164	.Watch attaching means extending circumferentially of wrist
165	..And supporting different article
166	..Means retaining watch if primary attaching means fails
167	..Means connecting watchcase to end of attaching means for motion about axis transverse to wrist
168	..Separate fastener securing watch pin or bail bar to middle portion of attaching means
169	..Fingers gripping watchcase at spaced points on periphery thereof
170	..Receiver disposed around watchcase
171	..Separate spacer or positioner between wrist and watch or attaching means
172	..Cord-type attaching means
173	..Separate decorative means secured to attaching means
174	..Curved arm hinged to watchcase and biased by separate means toward wrist clasping position
175	..Expandable strap
176	..Attaching means tightener other than buckle with pivoting tongue
177	..Separate fastener securing watch pin or bail bar to end of attaching means
178	..Multiple ply strap
179	..Rigid or semirigid band or arm
180	.Watch attaching means secured to watchcase pin
181	.Head supported
182	.Article or carrier attached to garment by means entering hole therein
183	.Including magnet
184	.Including towing means attached to person
185	.Article supported on upper end of elongate stanchion rotatably or swingably mounted on attaching means
186	.Canopy support
187	..Plural stanchions holding canopy
188	..Attaching means looped around neck or crossing shoulder
189	...Rigid attaching means
190	...Two flaccid attaching means crossing different shoulders
191	.Article held by receiver
192	..Handgun receiver usable on either side of torso
193	..Handgun receiver having vertically extending side edges spaced apart or separable for withdrawal of handgun therebetween
194	..Receiver attached to clothing by opposed means gripping gathered material
195	..Receiver supported for movement around torso by rigid means fixed on belt
196	..Means for ejecting article or moving it to accessible position
197	..Receiver rotatably or swingably mounted on attaching means
198	...Handgun receiver
199	...Closable receiver
200	...Receiver holding end of rod-like article
201	..Rigid support or attaching means looped around neck or crossing shoulder
202	..Flaccid attaching means looped around neck or crossing shoulder
203	...Cartridge receiver directly attached to, or formed as part of, shoulder or neck engaged attaching means (e.g., bandoleer, etc.)
204	...Single attaching means crossing both shoulders and extended circumferentially of torso under arms
205	...Carrier having single shoulder or neck engaged attaching means with flaccid receiver directly attached thereto or formed as part thereof
206	...Receiver held on one side of chest (e.g., shoulder holster, etc.)
207	...Shoulder or neck engaged attaching means held in aperture in receiver wall
208	...Carrier having single shoulder or neck engaged attaching means and attaching means extending circumferentially of torso
209	...Two attaching means crossing different shoulders
210	....And framework or rigid shield
211	.....And attaching means extending circumferentially of torso
212	.....Load-distributing web extending between vertical frame members
213	....Knapsack supported by two upstanding, elongate members having lower ends thereof supported by torso
214	....Flaccid strap-type holding means extending across or about article
215	....And attaching means extending circumferentially of torso
216	.....With receiver removably attached to means extending circumferentially of torso
217	..Attaching means engaged with finger
218	..Attaching means engaged with hand
219	..Attaching means extending circumferentially of wrist
220	...Freely suspended receiver
221	...Attaching means tightener
222	..Attaching means extending circumferentially of limb
223	..Plural receiver pockets formed by strip attached to backing at spaced points
224	..Receiver permanently mounted on or formed as part of torso-encircling carrier
225	...Metallic receiver

	CARRIED BY ANIMATE BEARER
	.Article held by receiver
	..Receiver permanently mounted on or formed as part of torso-encircling carrier
226	...Receiver hanging below belt
227	...Superposed pockets
228	...Fabric cover flap flexed between open and closed positions
229	...Holding article in concealment (e.g., money belt worn under clothing or having hidden pocket, etc.)
230	..Receiver held in clothing pocket
231	..Receiver shaping means
232	..Receiver holding knife, bayonet, sword, or ice pick
233	...Components separate to facilitate cleaning
234	..Receiver holding axe, hatchet, or splitting wedge
235	..Receiver closing means
236	...Flap flexed between open and closed positions
237	....Plural flaps on same receiver
238	....Handgun receiver
239	....Cartridge receiver
240	....Receiver removably attached to torso-encircling belt
241	...Hinged to receiver
242	..Retainer or positioner for article held by receiver
243	...Handgun receiver
244	....Retainer extending into trigger guard opening
245	...Located in receiver
246	...Flaccid retainer for receiver formed of rigid or semirigid material
247	..Opposed article gripping means
248	...Formed of wire or rod
249	..Article held in perforation in receiver wall
250	..Flaccid strap-type holding means extending across or about article
251	..Article held in ring or tube
252	..Clip or hook attaching receiver to support means on bearer
253	..Apertured member or loop attaching receiver to belt
254	.Article suspended by resiliently stretchable hanger
255	.Carrier component positioned in aperture in article or in retaining loop mounted thereon
256	..Tongue secured to separate support means on bearer
257	.Flaccid attaching means looped around neck or crossing shoulder
258	..Means for adjusting loop size or hanger length of attaching means looped around neck
259	..Two attaching means crossing different shoulders
260	...Article-suspending hanger on each side of torso
261	...And framework or rigid shield
262	....And attaching means extending circumferentially of torso
263	....Load-distributing web extending between vertical frame members
264	..Strap cushion or positioner located at shoulder
265	.Rigid support or attaching means looped around neck or crossing shoulder
266	..Yoke-type carrier
267	.Attaching means extending circumferentially of wrist or limb
268	.Article held by hook
269	.Clip or hook attaching article carrier to support means on bearer
270	.Article supported on horizontally extending member
271	.Rigid means fixedly mounted on article and detachably connectable to support means on bearer
272	.Rigid means connecting carrier components
273	VEHICLE ATTACHED
274	.Golf cart
275	.Seat associated
276	.Steering wheel or support column therefor
277	.Holder for sheet, card, or document
278	.Holder for diverse smoking items or materials (e.g., matchbox attached to ash tray, etc.)
279	.Intercommunicable carriers
280	.Dumpable receiver
281	.Slidable receiver
282	.Pivotable or rotatable receiver
29.5	.Railway
30 R	.Bicycle
30 A	...Handlebar attached
31	..Convertible and combined
32 R	..Receivers
32 A	....Rear wheel straddling
33 R	...Collapsible frame
33 A	.....Collapsible, handlebar attached
34	...Wrapper
35	...Forward reach supported
36	...Handlebar supported
37	..Spring holders
38	...Frame
39	..Bracket
40	...Folding
41	...Handlebar supported
42	..Hooks
42.01	.Convertible
42.03 R	.Combined with or supported by a bumper
42.03 A	...Receptacle
42.03 B	...Bicycle type
42.04	..Impact receiving carrier and/or article
42.05	..Displaceable bumper
42.06	..Wheel or tire carrier
42.07	..Platform type or rack
42.08	...Pivoted
309	.Carrier associated with vehicle roof or trunk lid
310	..Carrier having structure to facilitate loading (e.g., rollers, tracks, angled sides, etc.)
311	..Carrier mounted within vehicle compartment
312	...On sun visor
313	...For clothes hangers
314	..Removable carrier collapsible for storage
315	..Carrier with locking means
316	..Carrier having wind deflecting means
317	..Carrier and mounting therefor extend across half or less of vehicle
318	..Flexible carrier
319	..Carrier attached to carrier
320	..Expandable carrier
321	..Carrier having means to adjust position or attitude
322	..Single bar-type article supporting means removably attached exteriorly and transversely of vehicle
323	...Having opposed gripping elements to clamp supported article
324	..Carrier having article retaining means
325	..Carrier comprises plurality of spaced members

	VEHICLE ATTACHED
	.Carrier associated with vehicle roof or trunk lid
	..Carrier comprises plurality of spaced members
326	...Members fixedly attached to vehicle surface
327	..Article supporting portion of carrier contoured to conform to contour of vehicle surface
328	..Having enclosure or cover means
329	..Carrier to vehicle attaching means releasably engages the vehicle proximate the edge of the roof or trunk lid thereof
330	...Carrier adjustably connected to rigid support intermediate carrier and attaching means
331	...Attaching means is an individually acting clamp
42.11	.Straddle type
42.12	.For rim, tire or wheel
42.13	..Combined with rack or receptacles
42.14	...Nested
42.15	..Plural
42.16	...One supported solely by another
42.18	...With loop type or retainer
42.19	...With rim clamping means
42.2	..With cover or casing
42.21	..Movably mounted
42.23	..Underslung
42.24	..Wheel hub or hub opening engaging type
42.25	..With antitheft means
42.26	..Rim and/or tire gripping
42.27	...Expanding
42.28	....Swingably mounted
42.29	....Rectilinearly movable
42.3	...Movable laterally of tire rim plane
42.31	.Mud guard attached, i.e., fender
42.32	.Platform attached, e.g., running board type
42.33	..Upright retaining wall
42.34	...Flexible or collapsible
42.35	....Movable below platform
42.36	....Lazy tong type
42.37	..Article impaling
42.38	..Article clamping type
42.39	...Strap fastener
42.4	..Holddown
42.41	.Underslung
42.42	.Complementary
42.43	.Laterally projecting shelf type
42.44	..Movably mounted
42.45 R	.Bracket type
42.45 A	...Clothes hanger
42.46 R	.Suspended
42.46 A	...Clothes hanger
0.5	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
901	CARRIER COMPONENT HAVING ADHERENT SURFACE
902	BATTERY CARRIER
903	HOLDER FOR TIMEPIECE NOT CARRIED ON WRIST
904	TOOL HOLDER CARRIED BY BELT
905	ATTACHING MEANS CROSSING BACK OF PACK ANIMAL
906	CONTAINER FORMED OF FOLDED PAPERBOARD
907	RIGID SHIELD OR PAD POSITIONED BETWEEN ARTICLE AND BEARER
908	CARRIER FOR CAMERA OR OTHER PHOTOGRAPHIC EQUIPMENT
909	BINOCULAR CARRIER
910	CARRIER FOR MUSICAL INSTRUMENT
911	HANDGUN HOLDER FORMED OF LEATHER, FABRIC, OR OTHER FLEXIBLE MATERIAL
912	HANDGUN HOLDER FORMED OF METAL OR OTHER RIGID MATERIAL
913	CARRIER FOR RIFLE OR SHOTGUN
914	CARRIER FOR HANDCUFFS, BLACKJACK, CLUB, OR OTHER EQUIPMENT CARRIED BY POLICEMAN
915	CARRIER FOR FOLDED UMBRELLA
916	CARRIER FOR BOW OR ARROW
917	SKI CARRIER
918	CARRIER FOR GOLF TEE OR MARKER
919	BALL CARRIER
920	CARRIER FOR FISHING BAIT OR LURE, OR FISH CARRIER OTHER THAN STRINGER
921	GAME CARRIER OTHER THAN STRINGER
922	FISHING ROD HOLDER
923	CARRIERS WITH SLEEPING COMPARTMENT

CLASS 225 SEVERING BY TEARING OR BREAKING

DECEMBER 1990

1 METHODS
2 .With preliminary weakening
3 .Longitudinally of direction of feed
4 .Transversely of continuously fed work
5 ..Progressively to or from one side edge
6 SEVERING BY MANUALLY FORCING AGAINST FIXED EDGE
7 .With other type severing means
8 .With timer-released means for preventing work feed-out
9 .Including means to effect bias cut
10 .With feed-out of predetermined length from work supply
11 ..Including means to select or adjust feed-out length
12 ..Including feed-out stop for manually pulled work
13 ...Stop abuts work edge or work-mounted article
14 ...With feed-out of lead-end to aid initial grasping
15 ..Merely to provide lead-end for manual grasping
16 ..Manually operated feed-out mechanism
17 .With indicator
18 ..Indicates length to be severed from supply
19 .With blade-edge guard
20 ..Movable
21 .Work stripped from blade by relatively movable means
22 ..Including movable blade
23 .With means to move work toward or into severing position
24 ..With means to strip adhering work therefrom
25 .With work-immobilizing paster surface
26 ..With finger-access opening
27 .With means to hold pad or stack of individual sheets
28 ..With means to separate severed end of stub from supply package
29 ..With changeable blade-edge contour
30 ...Slidable notcher
31 ..Blade slidable along plane of work surface
32 .Zigzag-folded supply package
33 .Separate blades usable alternatively or sequentially on same work supply
34 .Plural supply sources
35 ..On turret-type support with single blade
36 ..With movable blade registrable selectively with each source
37 ..With plural blades
38 ...With individual blade for each source
39 .With housing for work supply
40 ..Liquid-, gas-, or light-tight work passage
41 ..With inspection window or transparent panel
42 ..With mounting means for housing
43 ..Blade on pivoted closure for housing
44 ..Sectional telescoping housing
45 ...Including removable cap or sleeve enclosure for spooled work supply
46 ..Including special support for wound supply package
47 ...Bearing or trunnions to engage package core
48 ..Single blank container
49 ...Blade unitary with container
50 ...With closure fastener
51 ..With brake or tensioner
52 ...Restricted or restrictable work outlet
53 ..With finger-access opening to facilitate work feed-out
54 ..With internal guide
55 .Blade carrier bodily and slidably supported on running length work
56 .Blade mounted on hand-held wound package
57 ..With lead-end stripper for tacky adhesive work
58 ..By resiliently embracing outer circumference of package
59 ..Work supply nonrotatably wound on flanged spool
60 ...Circumferentially movable blade radially retained by beaded or grooved flanges
61 ...Blade carrier supports hollow spool for rotation
62 ...Flange edge notched to provide or coact with cutter
63 ...With clamp for lead-end of strand-type work
64 ....Strand clamped against flange
65 ..By resiliently engaging package ends or interior of core
66 ..Blade carrier supports package for rotation
67 .Movable blade continually biased toward wound web supply package
68 ..Including temporary bias-disabling means
69 ..Including stripper to separate lead-end from package
70 ..Weight of bodily movable package contributes to blade-biasing force
71 ..Blade slidably guided
72 .Blade movable to severing position by moving work
73 ..With simultaneous application of brake or clamp
74 ...Applied to running length work
75 ....Opposed movable jaws
76 .Wound package bodily biased toward fixed blade
77 .With fixed blade and support for wound package
78 ..Body- or belt-attached
79 ..With brake applied to supply package
80 ..With guide spaced from blade edge to provide lead-end therebetween
81 .With work-abutment stop
82 .With brake or clamp
83 ..Thread cutter and clamp attachment for sewing machine presser foot
84 ..Applied to running length work
85 ...Spaced from blade edge to provide lead-end therebetween
86 ....Blade manually movable to expose lead-end
87 ..Manually applied, spring returned
88 .With guide for running length work
89 .Blade manually movable to or from severing position
90 .With means to facilitate lead-end grasping
91 .Blades or severing devices
92 ..Adjustable blade-edge contour
93 BREAKING OR TEARING APPARATUS
93.5 .Including means to apply thermal shock to work
94 .Combined with preliminary weakener or with nonbreaking cutter
95 ..Successively actuated sharp and dull tools
96 ..Preliminary weakener
96.5 ...With means to apply moment of force to weakened work
97 .Plural breakers
98 .Conveyer diverter for moving work
99 ..Plural divergent work paths

	BREAKING OR TEARING APPARATUS
100	.Work-parting pullers (bursters)
101	..Relatively movable clamps
102	.Axial twisters
103	.Movable breaking tool
104	..Breaking tool intermediate spaced work supports
105	...Clamping supports
106	.Web restrainer

CLASS 226 ADVANCING MATERIAL OF INDETERMINATE-LENGTH

DECEMBER 1990

1 PROCESSES
2 .Involving registration of material
3 ..Involving lateral registration
4 .Involving plural feeding means
5 .Involving stripping from conveyer
6 .By engaging material modifications
7 .By fluid current
8 .Intermittently or interruptedly
9 CONTROL MEANS RESPONSIVE TO INDICIA CARRIED BY AUXILIARY RECORD (E.G., TAPE OR CARD)
10 WITH MATERIAL-RESPONSIVE CONTROL MEANS
11 .Responsive to break or depletion
12 .For threading device
13 .For flywheel
14 .For festooner
15 .To position material laterally
16 ..With control of longitudinal movement
17 ..By roller pair engaging web margin
18 ..By shiftable material support
19 ...Laterally movable support
20 ....Responsive to photocell detection
21 ...Pivotally mounted roller
22 ....Responsive to pneumatic detection
23 ....Responsive to material-contacting element
24 .To regulate longitudinal movement of material
25 ..Responsive to overload
26 ..Responsive to weight of accumulation
27 ..Registration
28 ...Of continuously moving material
29 ....By means to vary speed of material momentarily
30 .....By means to vary speed of feed roll
31 ......By ancillary power source
32 ...By means to change feeding movement of intermittent feed stroke
33 ...By means to discontinue movement of material
34 ..By means to vary engagement of feed means with material
35 ...Feed means moved out of engaging position
36 ..By ancillary feed means
37 ..By disconnectable connection in drive train
38 ..By means to retard material movement
39 ...By material contact
40 ...By variable-ratio transmission
41 ...Coaxially shiftable pulley cones
42 ..By variable speed power source
43 ...To stop and/or start movement of material
44 ..Responsive to dancer detector
45 .Detector means
46 WITH INTERLOCK MEANS
47 .And means to initiate operation of part
48 WITH RANDOMLY ACTUATED STOPPING MEANS
49 SELECTIVELY REVERSIBLE MATERIAL MOVER
50 .By optional moving means
51 .By optional drive trains
52 MEANS TO ENGAGE LONGITUDINALLY SPACED MODIFICATIONS IN MATERIAL
53 .Such means produces the modifications
54 .Alternately selectable prongs
55 .Prong operable intermittently to prevent longitudinal material movement (e.g., registration pins)
56 ..With means to disable restraining operation of prong
57 ..With positive actuator to project and to retract prong
58 ..With resilient means to urge prong toward material
59 .With additional means to restrict material movement
60 ..Fluctuation damping means
61 ...By flywheel
62 .Reciprocating or oscillating claw or finger
63 ..Serial sequentially operated claws
64 ..With means to change path or extent of claw movement
65 ...Range changer
66 ....To stop material movement
67 ..On longitudinally reciprocated carrier
68 ...Claw pivotable on carrier
69 ..On two rotated carriers
70 ..On carrier pivoted about a fixed axis
71 ...Claw pivotable on carrier
72 ...Claw radially slidable on carrier
73 ..Claw slides on and pivots about fixed stud
74 .Pins on flexible belt or chain
75 ..With means to effect supplementary pin movement
76 .Rotating sprocket (e.g., pin-wheel)
77 ..For concatenated material
78 ..Circumferentially opposite pins engage looped material
79 ..With laterally adjustable sprocket(s)
80 ..With means to disengage material from prong(s)
81 ...By supplementary movement of prong(s)
82 ..With means to retain material on prong(s)
83 ...Retainer and sprocket relatively displaceable
84 ....Roller retainer
85 ...Roller retainer
86 ..With additional means to support material
87 .Including detail of prong shape or construction
88 WITH MEANS TO TEMPORARILY DEFORM MATERIAL LATERALLY (E.G., FOR STIFFENING)
89 SHIFTABLE PART ALLOWING HAND LOADING
90 .With shiftable roller
91 THREADING DEVICE
92 .With means to pull lead-end
93 WITH ADHERENCE OR ATTRACTION OF MATERIAL TO ADVANCING MEANS
94 .By electrostatic force
95 .By pneumatic pressure
96 .By adhesive nature of material
97 BY FLUID CURRENT
100 WITH ALARM, SIGNAL, OR INDICATOR
101 CONVERTIBLE
102 COMBINED
104 BY FESTOONER
105 .With means to shift girt with respect to festoon and conveyer
106 .With means to hold material on girt
107 .With means to feed girt to conveyer
108 PLURAL MATERIAL-MOVING MEANS
109 .With plural paths for material
110 ..Alternately usable
111 .With means to independently vary mover speed
112 .Continuous feed from serial sequentially operated feeders
113 .With bight former
114 ..With pivotal former-support
115 .With intermittent material-mover
116 ..Including auxiliary material-mover for starting
117 ..And continuous material-mover
118 .With intermediate storage
119 ..By means to direct material in sinuous path
120 BY INTERMITTENT (INTERRUPTED) MATERIAL-MOVER
121 .Stored material-movement-derived energy provides moving force

BY INTERMITTENT (INTERRUPTED) MATERIAL-MOVER
122 .With means varying the material speed during movement
123 .Cyclical unequal movements
124 .Comprising constantly rotated roll on reciprocating or oscillating carrier
125 .Including material abutment
126 ..Movable with material
127 .Manual material-mover (e.g., dispenser)
128 ..With means to clamp material during dwell
129 ..With means to limit increment of advance
130 ...With means to disable operation of limit means
131 ....Time-controlled
132 ...Plural selectable limit means
133 ...With means to adjust limit means
134 .Unicyclic mover
135 ..Plural means to select increments of advance
136 ..With means to adjust increment
137 .Adjustable feeder
138 ..Operative-controlled, machine-powered adjustment
139 ..Adjustable feed increment
140 ...By means to vary material-engagement of recessed roll
141 ...By means to change length of feeder travel
142 ....Comprising variable-throw crank
143 .With means to effect feed and retrograde movement
144 .With overtravel preventer
145 ..Intermittently acting
146 ..And retrograde movement preventer
147 .With retrograde movement preventer
148 ..Unidirectionally rotating roll
149 ..Positively actuated to grip
150 ...By hydraulic or electrical means
151 ..Yieldingly biased
152 .Comprising material-moving roll
153 ..Recessed roll
154 ..With means to disengage roll from material
155 ...Continuously rotating roll
156 ..Unidirectional
157 ...Ratcheted roll
158 .Comprising reciprocating or oscillating material-mover
159 ..With means to retard movement of advancer carrier
160 ..On pivoted carrier
161 ..With means to disable material-mover
162 ..With means to move grip element into material engagement
163 ...Comprising link positively connected to element
164 ....Which link effects material-advancing movement
165 ...Comprising camlike surface
166 ....Which surface effects material-advancing movement
167 ..With spring-biased grip element
168 BY ORBITALLY TRAVELING MATERIAL-ENGAGING SURFACE(S)
169 .With start-facilitating means
170 .On endless belt or chain
171 ..With cooperating surface
172 ...Comprising endless belt or chain
173 ..With gripper(s) mounted thereon
174 .With control or adjustment means
175 ..To vary diameter of roll
176 ..To vary bite of contacting pinch members
177 ...Infinitesimally variable
178 ..To vary speed of material-advancer
179 ..For shifting roll(s) axially
180 ..For shifting roll(s) angularly
181 .Comprising rotary pinch pair
182 ..Including radial material-engaging surface
183 ..Including means to ensure arcuate engagement
184 ..Tapered roll or bite
185 ..Including equal-diameter coaxial rolls
186 ..Yieldable bite
187 ...Roll axis resiliently urged
188 .With drive means
189 .Plural spaced apart rolls (e.g., guide rolls)
190 .Including details of roll or mount
191 ..Roll surface radially movable
192 ...And axially movable (e.g., centering rolls)
193 ..Irregular friction surface (e.g., roughened)
194 ..Bearing or support
195 WITH MEANS TO RETARD MATERIAL MOVEMENT (E.G., "TENSIONER")
196 STATIC GUIDE
197 .Turning bar
198 .Resiliently urged
199 .Adjustable
200 MISCELLANEOUS

CLASS 227 ELONGATED-MEMBER-DRIVING APPARATUS

1 WITH RANDOMLY ACTUATED STOPPING OR DISABLING MEANS
2 WITH CONTROL MEANS RESPONSIVE TO SENSED CONDITION
3 .Responsive to work feed means
4 .Responsive to position of work support or anvil
5 .Work-responsive
6 ..Position of work
7 ...Control initiates driver-actuation
175 SURGICAL STAPLERS
176 .With magazine
177 ..Including biasing means
178 .Multiple driving means
179 ..Tubular driving path
180 .With cutting means
181 .With means to position a mating-member in alignment with driver
182 .With means to prevent partial drive cycle
8 WITH INTERLOCK MEANS
9 EXPLOSIVE-TYPE DRIVING MEANS
10 .With plunger
11 .With protective shield
12 STRETCHING TOOL WITH MEANS TO FASTEN FLACCID WORK TO RIGID BASE
13 .Including mechanical means to apply force to stretching tool
14 WITH MEANS TO CEMENT WORK OR MEMBER
15 WITH MEANS TO POSITION "MATING-MEMBER" IN ALIGNMENT WITH DRIVER
16 .Strip-type "mating-member"
17 .With means to form "mating-member"
18 .Comprising feed means for "mating-member"
19 WITH MEANS TO ASSEMBLE PLURAL PIECES OF WORK
20 .With means to deform work
21 ..Including cutting means
22 ..Including means to rotate work
23 ...With die-shaping means
24 ...With end-inserting or clamping means
25 ..Means to buckle flaccid work
26 .With means to place member between workpieces (e.g., dowels, etc.)
27 .With drilling or punching means
28 .With means to sequentially secure layers (e.g., heels, etc.)
29 ..With work clamp
30 .With driver acting through clamp jaw
31 .Bight attaching means (e.g., buttons, etc.)
32 ..Including means to insert member in bight
33 ...With member-forming means
34 ...After member is applied to a workpiece
35 ....Single pointed member
36 ....With work feed means
37 ..With work feed means
38 ...With means to actuate driver
39 .Work conveyer means
40 ..Including common means to shift and clamp work
41 ..Pivoted work carrier
42 ...Plural pivotal axes
43 ..Including means to align member-aperture with member
44 ..Endless conveyer
45 ...Including magazine-type work supply means
46 ...With reel-type work supply means
47 ....Including work cutting means
48 ..Including magazine-type work supply means
49 ...With means to rotate work
50 ...With means to move assemblage to fastener station
51 WITH MEANS TO HEAD MEMBER
52 .Driver or heading means located within tubular work
53 .Common tool to drive and head member
54 .Pointed or edged tool
55 .Heading tool extends within hollow portion of member
56 ..Simultaneously used heading tools
57 ..With work feed means
58 ..With means to form opening in work for member
59 ...Heading means also acting as opening former
60 ..With pilot pin
61 .Anvil
62 ..Die
63 WITH MEANS TO WITHDRAW MEMBER
64 WITH MEANS TO SHAPE WORK OR CUT PRODUCT
65 .Buckling of flaccid work
66 .Deforming means with rectilinear reciprocating motion
67 .Means to form opening in work for member
68 ..Driver also acting as punch
69 ..Rotatable cutting tool
70 ..Plural cutting tools (e.g., awls, etc.)
71 ...For dual openings
72 ...With pivoted tool carrier
73 ..Including work-feeding means
74 ...Cutting tool having work-feeding motion
75 ....With pivoted tool carrier
76 .Cutting means
77 WITH MEANS TO DEFORM MEMBER REMOTE FROM THE WORK SURFACE AFTER WORK PENETRATION
78 SELECTIVE ALTERNATIVE APPLYING MEANS
79 WITH MEANS TO CUT MEMBER AFTER PENETRATION
80 .From material of indefinite length
81 DRIVING MOTION OF DRIVER HAS COMPONENT IN DIRECTION OF MOVING WORK (I.E., FLYING DRIVER)
82 WITH MEANS TO FORM MEMBER PRIOR TO PENETRATION OF WORK
83 .Deflector
84 .With means to vary length of members
85 .With offset tools to deform members (e.g., bending, drawing, etc.)
86 ..With cutting edge on driver
87 ..With driver acting through offset tools
88 ...Including retractable forming bar
89 ....With movable member-holder
90 ....Pivoted
91 ...Including diverse means to sever and apply member
92 .With opposed tools to form member (e.g., forging, swaging, etc.)
93 .Severing means sole member former
94 ..Including plural diverse severing operations
95 ..With feed means for concatenated members
96 ...Pivoted feed means
97 ..Severing means moves member to driver
98 ..With reciprocating member carrier to driver
99 WITH MEANS TO CONVEY WORK OR PRODUCT RELATIVE TO DRIVING STATION
100 .Interrelated conveying and driver-actuating means
101 ..With means to move both the conveyer and a driver carriage
102 ..With means to vary timed relationship between conveyer movement and driver-actuating means

WITH MEANS TO CONVEY WORK OR PRODUCT RELATIVE TO DRIVING STATION
.Interrelated conveying and driver-actuating means
103 ..Plural conveying means
104 ..With compound movement of work holder
105 ..With rotary movement of work holder
106 .Work holder moves in curved path
107 WITH MEANS TO MOVE OR GUIDE MEMBER INTO DRIVING POSITION
108 .With work-penetrating clenching tools
109 .Adaptable to dispense different sizes or quantities of members
110 .With positionable driver
111 ..Including means to move driver carriage
112 .Fluid-contact member-feed means
113 .Magnetic member-feed and/or holding means
114 .Including means other than the driver to separate leading member from a supply
115 ..Interrelated separator elements
116 ..Rectilinear motion
117 ..Rotary
118 ...Oscillating separator
119 .With means to assure correct orientation of member(s)
120 .Including supply magazine for constantly urged members
121 ..With means to prevent partial drive cycle
122 ..With means to cut jammed member
123 ..With removable or resiliently urged (antijam) noseplate
124 ..With interrelated driver and work clamp
125 ..With means to disable urging means
126 ...By lock means
127 ..With magazine closure
128 ...Pivoted magazine cover
129 ..With means to actuate driver
130 ...Fluid pressure means
131 ...Magnet or solenoid
132 ...Spring
133 ...Inertia means
134 ..Spring-retracting means
135 .Including carrier feed means for a plurality of members
136 ..With means to feed strip-type carrier
137 ..Rotary
138 .Driver actuates member-feed means
139 .With means to guide member
140 WITH MEANS TO SUPPORT MEMBER AND/OR WORK RELATIVE TO DRIVER
141 .Driver moves work, member held stationary
142 .With means to vary the length of the tool stroke
143 .With means to move elements of tool-pair during driving
144 ..Pivoted tool element
145 .Curved driver path
146 .Spring-actuated driver
147 .Impact-type driver
148 .Comprising means to angularly orient member
149 .Bias-type member holder
150 .Means to guide moving work
151 .Work immobilizer
152 ..Means to clamp work
153 ...Interrelated with driver-actuation
154 .Work support
155 ..Including clenching means
156 MISCELLANEOUS

CROSS-REFERENCE ART COLLECTIONS

901 SURGICAL CLIP APPLIERS
902 SURGICAL CLIPS OR STAPLES

CLASS 228 METAL FUSION BONDING

DECEMBER 1990

101	PROCESS
102	.With condition responsive, program or timing control
103	.With measuring, testing, indicating, inspecting or illuminating
104	..Nondestructive testing
105	..Using optical viewing means (e.g., microscope)
106	.Using a compliant cushioning medium
107	.Using explosive energy
108	..Specific rate of explosive burn or approach of preforms
109	..Critical spacing between preforms
110	.Using high frequency vibratory energy (e.g., ultrasonic)
111	..With treating other than heating
112	.Using dynamic frictional energy
113	..Inertia type
114	..With treating other than heating
115	.Using only pressure (e.g., cold welding)
116	..With pretreating of work
117	..Cold rolling
118	.Using bond inhibiting separating material
119	.Repairing, restoring or renewing product for reuse
120	.Mechanically joining metal/nonmetal and bonding to the metal
121	.Bonding nonmetals with metallic filler
122	.Metal to nonmetal with separate metallic filler
123	..Semiconductor-type nonmetallic material
124	..With treating
125	.With removing or reshaping of filler material or flash after bonding
126	.Encasing a rodlike core within a substantially coextensive tube by complete bonding therebetween
127	..Thermally induced pressure weld
128	..With mechanical interlock
129	..By bending planar part to form tube around rodlike core
130	...Progressively
131	..By fitting rodlike core within tube
132	...Joining through filler
133	....Preplacing solid tubular filler
134	....Applying molten filler from top reservoir
135	.With supplementary mechanical joining
136	..Deforming of work part
137	...Lock seaming
138	...Attaching of bridge or tie member
139	..Using separate fastener
140	...Threaded fastener
141.1	.With shaping
142	..Corner mitering
143	..Of multilayer tube from single web
144	..And edge joining of one piece blank or strip
145	...To form helically seamed tube
146	...Progressively bending and joining
147	....Forming indefinite length member
148	.....Sheathing, cable or wire
149	...Uniform thickness thin blank or strip
150	....Elongated seam
151	.....Butt joining
152	...Irregular thick blank or strip
153	..Lap joining of parts of nonplanar surfaces
154	...For telescoping sleeve
155	..Subsequent to bonding
156	...Drawing elongated member through die
157	...Spreading or expanding work between bond joints (e.g., honeycomb or heat exchanger making, etc.)
158	...Rolling
159	...Removing of material
160	....By cutting
161	.....Producing internal cavity, aperture, or opening
162	.....Abrading
163	....By melting
164	..Prior to bonding
165	...Forming channel, groove, or aperture for reception of filler material
166	....Elongated seam
167	....Planar intersecting channel walls
168	....Annular seam
169	.....Having U-shaped or curved cross-section
170	...By cutting
171	....Producing opposed complementary matching bonding surface
172	....Abrading
173.1	...By deforming
173.2	....Pressing first work part against second work part
173.3	....Preforming work faying surface
173.4	....Tube or frame member
173.5	....Rod, bar, or wire-like object
173.6	....Sheet material
173.7	.....Continuously feeding sheet material
174	...Forming channel, groove, or aperture
265	..With concurrent bonding
175	.Plural diverse bonding
176	.Combined
177	.Alternative bonding
178	.Plural joints
179	..Of electrical devices (e.g., semiconductors)
180.1	...Simultaneous bonding of multiple joints (e.g., dip soldering of printed circuit boards)
180.2	....Component terminal to substrate surface (i.e., nonpenetrating terminal)
181	..Honeycomb structure
182	..Of mechanical article
183	...Heat exchanger structure
184	...Pressure vessels, tanks, and container-type structures
185	..Noncoextensive lamina to common base in regular pattern
186	..Preliminary sealing of joints
187	..Separate successive bonds at different temperatures
188	..Including nonmetallic base
189	..Using bridge or spacer
190	..Of concurrently bonded stacked laminae
191	.With disassembling of bonded joint (e.g., desoldering)
192	.Chain link
193	.Diffusion type
194	..Using intermediate diffusion facilitating material
195	..With incipient melting of bonding surface
196	.Autogenous fusion
197	..With diffusion of atoms or nuclear particles
198	.Chemical reaction produces filler material in situ
199	.With subsequent treating other than heating of bonded parts and/or filler material
200	..Cooling under particular conditions
201	..Cleaning
202	...Chemical
203	.With pretreating other than heating or cooling of work part of filler prior to bonding and any application of filler
204	..Applying porous or capillary feed material

	PROCESS
	.With pretreating other than heating or cooling of work part of filler prior to bonding and any application of filler
205	..Cleaning
206	...Chemical
207	....Applying flux
208	..Applying preliminary bond facilitating metal coating
209	...Chemical deposition
210	...Mechanically secured
211	..Chemical
212	.With clamping or holding
213	..And unclamping
214	.With protecting of work or filler or applying flux
215	..By confining filler
216	...Using backup means
217	..Using getter
218	..Using gas, vapor, vacuum, or reactive flame
219	...Gas or vapor
220	....Reducing gas
221	...Vacuum
222	..Using cooling means (e.g., heat sink or barrier)
223	..Applying flux
224	...Flux affixed to or incorporated with filler
225	.Plural filler applying
226	..Diverse fillers
227	.Plural heat applying
228	..And applying pressure
229	..Separate and distinct heating of work and filler
230	..Diverse heating
231	..Including post heating
232	..Including preheating
233	.Critical pressure
234	..And critical temperature or heating
235	...Roll bonding
236	..Including specific rate of applying
237	..Including particular mode of applying
238	.Critical temperature or heating
239	..Including specific rate of applying
240	..Including particular mode of applying
241	...By exothermic reaction
242	.Including particular mode of applying heat or pressure
243	..Pressure
244	.Feeding unfused filler into fusing contact with work part
245	.Preplacing solid filler
246	..Particular size or shape
247	...Indefinite length
248	..Applied in powdered or particulate form
249	..Joint interposed
250	...Butt
251	...Lap
252	...Coextensive sheet
253	...Attaching filler to work part
254	....Adherent solid layer or coating (e.g., pretinned)
255	....Mechanically secured
256	.Applying or distributing fused filler
257	..By gravity
258	..By capillary action
259	..By immersing in stagnant pool
260	..Using pumped stream or jet
261	..Using spray
262	..With agitating or vibrating (e.g., using ultrasonic energy)
263.11	.Using critical metal filler or work part
263.12	..Nonmetal or nonmetal with metal film
263.13	..Nickel or cobalt
263.14	..Ferrous metal
263.15	...Steel
263.16	....And nonferrous metal
263.17	..Aluminum or magnesium
263.18	..Copper or nobel metal
263.19	..Refractory metal
263.21	...Titanium or zirconium
264	PROCESSES OF DISASSEMBLING BONDED SURFACES PER SE (E.G., DESOLDERING)
1.1	MEANS TO APPLY VIBRATORY SOLID-STATE BONDING ENERGY (E.G., ULTRASONIC, ETC.) TO WORK
2	INCLUDING MEANS TO PROVIDE HEAT BY FRICTION BETWEEN RELATIVELY MOVING SURFACES
2.5	EXPLOSIVE WELDING MEANS
3.1	MEANS TO BOND BY APPLYING ONLY PRESSURE (E.G., FOR COLD WELDING, ETC.)
4.1	WITH MEANS TO JUXTAPOSE AND BOND PLURAL WORKPIECES
4.5	.Wire lead bonder
5.1	.Witn means to treat workpieces (e.g., cutting, deforming, etc.)
5.5	.Including compliant cushioning medium
5.7	.Strip leading end to trailing end bonder
6.1	.Plural discrete workpieces
6.2	..With electrical connection made at joint
7	WITH MACHINE PART RESPONSIVE TO TEMPLATE OR PATTERN OR TO INDICIA CARRIED BY AUXILIARY RECORD (E.G., TAPE, CARD, ETC.)
8	WITH CONTROL MEANS RESPONSIVE TO SENSED CONDITION
9	.Work-responsive (e.g., temperature, orientation of work, etc.)
10	..Presence of work
11	...To control feed of filler
12	.Responsive to position of work carrier
13	WITH MEANS TO CUT OR SEPARATE WORK, FILLER, FLUX, OR PRODUCT
14	.Plus means to apply cut filler or cut flux to work
15.1	WITH MEANS TO DEFORM WORK, FILLER, OR FLUX PORTION BEFORE FUSION
16	.By a funnel-shaped conduit (e.g., welding bell, etc.)
17	.By roller means
17.5	.Comprising means forming one-piece blank into a tubular shape
17.7	..Helical tubular shape
18	COMBINED
19	WITH MEANS TO REMOVE, COMPACT OR SHAPE APPLIED FLUX OR FILLER
20	.By fluid blast or suction
21	.With shield or guide for removed material
22	.Including wiper
23	..Comprising endless wiper
24	INCLUDING REPETITIVE IMPACT FUSION-BONDING MEANS
25	INCLUDING APPLICATOR MOVABLE DURING FUSION
26	.Including "flying" applicator engaging moving work
27	.With lateral oscillation along path of seam
28	.Reciprocatory or oscillatory motion
29	.Orbital or plane curvilinear motion
30	..Cf roller applicator
31	...With associated bath of liquid flux or filler
32	.Means to move applicator
33	INCLUDING MEANS TO APPLY FLUX OR WORK, OR TO SUPPLY FLUX OR FILLER TO APPLICATOR
34	.With means to skim dross

	INCLUDING MEANS TO APPLY FLUX OR WORK, OR TO SUPPLY FLUX OR FILLER TO APPLICATOR
35	.By brush, wick or pad
36	.By partial or total immersion of work or applicator into liquid
37	..Flowing flux or filler (e.g., wave former, etc.)
38	..With means to roll or orbit work portion
39	..With means to mask or stop work
40	..Comprising work immersion
41	.Solid flux or solid filler
42	.Gaseous flux
43	.Moving work
44.3	INCLUDING MEANS TO FORCE OR CLAMP WORK PORTIONS TOGETHER DURING BONDING
44.5	.Comprising tube aligning means
44.7	.Work portion comprises electrical component
45	INCLUDING MEANS TO MOVE OR GUIDE APPLICATOR
46	WITH MEANS TO COOL WORK OR PRODUCT
47	WITH MEANS TO HANDLE WORK OR PRODUCT
48	.Including means to rotate cylindrical work
49.1	.Including means to orient work or position work portion relative to another work portion
49.2	..Means to rotate work and to position work about a different axis
49.3	..Pipe joint aligner
49.4	..Sheet aligner
50	SEAM BACKUP MEANS
51	METALLIC HEAT APPLICATOR (E.G., SOLDERING IRON, ETC.)
52	.With means to handle flux or filler
53	..With means to heat applicator
54	.Tip or head alloy or polymetallic structure
55	.Adjustable or detachable head or tip
56.1	SPECIALIZED POT
56.2	.Having means to treat flux or filler
56.3	SOLDER FORM
56.5	WITH SIGNAL, INDICATOR, GAUGE, OR STOP
57	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
58	APPARATUS FOR BONDING BATTERIES (I.E., PLURAL CELLS)
59	HEAT SHIELD
60	TUBE END CLOSING
901	PROCESS OF BONDING BATTERIES
902	USING FLAME
903	METAL TO NONMETAL
904	WIRE BONDING

100	PAPERBOARD BOX
101	.Variable volume
102	.Tamper indicating
103	.Convertible
103.1	.Combined with drinking tube (e.g., straw)
104	.Elevated bottom wall included in a one-piece box construction
105	.Edges of rectangular bottom wall are at 45 degrees to edges of rectangular stock material
106	.Including a plygonal bottom wall and a curved side wall
107	.Including a sector-shaped wall (e.g., pie-shaped, semicircular, etc.)
108	.Including a polygonal, nonrectangular wall
108.1	..Collapsible along supplemental fold line
109	..Octagonal
110	..Hexagonal
111	..Trapezium-shape
112	..Trapezoidal
113	...Three or more trapezoidal walls (e.g., truncated pyramid-shaped box)
114	....Including a side wall which slants upwardly and outwardly
115	..Triangular
116	...Three or more triangular walls (e.g., pyramid-shaped box)
117	.Automatic bottom (i.e., multipart bottom wall forms automatically during erection of collapsed box)
117.01	.Collapsible along supplemental fold line
117.02	..Separate end cap contains the side walls in collapsed configuration
117.03	..Including anti-collapse feature
117.04	...Flat anti-collapse element overlies supplemental fold line
117.05	..Two opposed side walls and the bottom wall fold upon themselves
117.06	...Bottom wall collapses outwardly
117.07	..Two opposed side walls fold inwardly and downwardly
117.08	...Two other opposed side walls fold outwardly and downwardly
117.09	.Lifting or suspending element (e.g., handle)
117.11	..Element portion or extension crosses all or part of the box bottom
117.12	..One-piece with the box
117.13	...Box includes hand-receiving aperture
117.14	....Handle elements or portions located above the box top include aligned, hand-receiving apertures
117.15	.....A handle element or portion extends through a hole or gap in the box
117.16	....Hand-receiving aperture extends through a box side wall
117.17	.....Apertured side wall includes a downwardly folded extension of itself
117.18	...Box includes aperture for rod-like support
117.19	..Detachable
117.21	..Wire
117.22	..With provision for positioning element in a nonuse location
117.23	..Single lifting or suspending element
117.24	...Element extends through a hole or gap in the box
117.25	....Element extends through hole in the each of two opposed side walls
117.26	...Element secured to opposed side walls
118	.With detachable product-information band
119	.With drainage feature
120	.With venting or ventilation means
120.1	..Live animal shipping box (e.g., chick box, etc.)
120.01	.Plural
120.02	.Compartmented
120.03	..Including independently operable closures for at least two compartments
120.04	...A closure includes a folded flange which forms a partition when the box is closed
120.05	..Partition includes securing means for a closure
120.06	..Partition detached from box blank
120.07	..Partition made of plastic
120.08	..Partition unitary (i.e., of one-piece construction) with and folded from a box wall
120.09	...Relatively movable compartments
120.11	...Partition includes adjoining walls of tubular box sections
120.12	...Oblique partition
120.13	...Partition folded from a downwardly extending side wall extension
120.14	...Partition cut and folded from a box wall
120.15	....Side wall
120.16	....Bottom wall
120.17	...Partition folded from bottom wall
120.18	...Partition folded from a side wall
120.19	....Including a nonunitary, horizontal partition (i.e., in addition to the unitary partition)
120.21	....Unitary partition is horizontal
120.22	..Curved partition
120.23	..Oblique partitions folded from a single sheet of material
120.24	..Parallel partitions folded from a single sheet of material
120.25	...Including a nonunitary transverse partition (i.e., not of one-piece construction with the parallel partitions)
120.26	...Including a transverse partition which is part of the single sheet of material
120.27	....The parallel partitions are cut and folded from the transverse partition
120.28	....The transverse partition is horizontal
120.29	..Perpendicular partitions are part of a single sheet of material
120.31	..Collapsible compartments formed by partitions permanently attached to each other
120.32	..Horizontal partition
120.33	..Including partition retaining means which is not unitary with the partition
120.34	...Retaining means includes channels or grooves for ends of the partition
120.35	..Oblique partition
120.36	..Nonunitary, intersecting partitions
120.37	..Self-sustaining container-like compartment-forming structure
120.38	..Partition folded from an entire sheet of material separate from the box
121	.Including two or more separate access openings
122	.Including an access opening in a side wall intended to permit lateral insertion or removal of content
122.1	..Contents gravity fed to access opening
122.2	.Including an access opening in the box bottom

PAPERBOARD BOX

123 .Tiltable side wall provides enlarged access opening in box top
123.1 .Nonunitary peelable closure or securing element (i.e., not of one-piece construction with the box)
123.2 .Including tearing or breaking means for opening a nonunitary closure or releasing a nonunitary securing element (i.e., the closure or securing element is not of one-piece construction with the box)
123.3 ..Tearing or breaking provides hinged reclosure element
124 .With closure for an access opening
125 ..With means for securing closure element in an open configuration
125.01 ..Nonunitary closure (i.e., not of one-piece construction with the box)
125.02 ...With means to bias closure into closed position
125.03 ...Closure has secondary use (e.g., as an eating utensil)
125.04 ....Pour spout
125.05 ...Separately operable, superposed closures for one access opening
125.06 ...Closure adjustable for different size access openings
125.07 ...Closure mounted for compound movement
125.08 ...Closure mounted for swinging movement (e.g., hinged)
125.09 ....Plug-type closure
125.11 ....Including a nonunitary hinge (i.e., not of one-piece construction with the box or closure)
125.12 ...Laterally slidable closure element (i.e., slides across access opening)
125.13 ...Closure secured to open box end by frame or ring
125.14 ...For an access opening extending through a nonunitary box end-closing element (i.e., the element is not of one-piece construction with the box)
125.15 ...For an access opening formed by a cut-out in a box wall
125.16 ...Including a gasket
125.17 ...Plug-type closure
125.18 ...Tethered closure
125.19 ...Closure includes a depending flange or tab which extends along an adjacent box wall
125.21 ....With a nonunitary securing element (i.e., not of one-piece construction with the box)
125.22 .....String, cord, or ribbon
125.23 .....Nonunitary securing element on closure engages nonunitary securing element on box (i.e., securing elements not of one-piece construction with the box)
125.24 ....Threaded
125.25 ....Flange or tab overlaps rolled container rim or bead
125.26 ....Flange or tab interlocks with downwardly extending flange or tab on box
125.27 ....Flange or tab interlocks with horizontal flange or tab on box
125.28 ....Flange or tab extends through opening in box material
125.29 ....Closure includes slit or aperture to receive a projection from a box wall
125.31 ....Flange or tab extends between two layers of box material
125.32 ....Flange or tab extends into box interior
125.33 ...Closure bonded to box
125.34 ....Including a flexible sheet bonded to one or more closure flaps
125.35 ....Bonded to box rim or adjacent flange
125.36 ...Closure interlocks with horizontal flange on box
125.37 ..Including a nonunitary securing element for a closure (i.e., element is not of one-piece construction with the box)
125.38 ...String, cord, or ribbon
125.39 ...For securing two or more closure flaps in place
125.41 ....Securing element extends through the outer of two overlapping closure flaps
125.42 ..One-piece box construction includes a closure useable as a pour spout (e.g., gable-top carton)
126 ..Foldable wall extension (e.g., closure flap)
127 ...Two opposed extensions have folded confronting flanges
128 ...Including means for biasing extension into closed position
129 ...Telescoping closure formed from plural extensions
130 ...Including stop to limit opening movement of closure
131 ...Closed extension includes fixed and movable portions joined at a hinge line.
131.1 ...Access opening cut out of a foldable wall extension
132 ...Overlapping extensions bonded together
133 ....Including a sealing web formed by partial delamination of a wall extension
134 ....Including embossing or scoring to enhance the bond
135 ....Including means to restrain inward movement of inner extension during bonding
136 ....Extensions bonded by means of a cohesive or pressure sensitive type adhesive
137 ....Extensions of adjacent box walls hingedly attached together
138 ...Extensions of adjacent box walls hingedly attached together
139 ....Three extensions form a pocket to receive fourth extension
140 ....One extension extends along an adjacent box wall
141 ...Extension includes a depending flange or tab which extends along an adjacent box wall
142 ....Two or more extensions include a depending flange or tab
143 .....Each of two opposed extensions includes flanges or tabs depending from two opposite edges
144 ....Flange connected to two box walls by a foldable web
145 ....Plural flanges interconnected to form a skirt
146 .....Box wall or portion thereof pivots with extension during opening of the box
147 ....Flange or tab folded to extend along two or more box walls
148 ....Flange or tab includes slit or aperture to recieve a projection from a box wall

	PAPERBOARD BOX
	.With closure for an access opening
	..Foldable wall extension (e.g., closure flap)
	...Extension includes a depending flange or tab which extends along an adjacent box wall
149	....Flange or tab extends through opening in box material
150	.....Opening extends through a wall extension
151	....Flange or tab extends between two layers of box material
152	....Flange or tab extends into box interior
153	.....Including means for securing flange or tab in closed position
154	....Extension includes two or more depending flanges or tabs
155	...Plural extensions mechanically interlocked with each other
156	....One extension interlocks with at least two others
157	.....The one extension projects through an opening in each of the others
158	....One extension projects through two separate openings in another extension
159	...Extension formed of two or more thickness of box material
160	...Access opening includes a rim for supporting a wall extension
160.1	..Hinged closure includes material cut from a box side wall (e.g., cigarette box)
160.2	..Including means to facilitate the application of an opening force to the closure (e.g., pulltab, thumb notch, etc.)
161	.A box wall includes box material cut from another box wall
162	.Window or transparent portion
163	.Horizontal, outwardly extending bottom flange
164	.Different height side walls
165	.A side wall includes a horizontally or downwardly extending panel attached along a horizontal fold line which is spaced above the box bottom
166	..Separate reinforcing member located within fold
167	..Panel forms a hollow side wall or side wall portion
168	...Hollow side wall has a nonrectangular cross section
169	..Panel forms planar, horizontal flange or flap spaced from box bottom
170	...Flange or flap includes a portion of a folded corner connector (i.e., "corner fold" or "corner flap")
171	..Panel is located outside the box
172	..Panel include a folded flap or tab which overlaps an adjacent box wall (e.g., side wall or bottom wall)
173	...One or more flaps combine to cover entire bottom wall
174	...Flap or tab overlaps an adjacent side wall
175	....Flap or tab is coplanar with a downwardly extending panel of the adjacent side wall
176	....Flap or tab underlies a downwardly extending panel of the adjacent side wall
177	..Panel has opening or notch to receive a portion of a folded corner connector (i.e., "corner fold" or "corner flap")
178	..Panel or panel portion projects into an opening or notch in the box material
179	...Opening or notch located in folded corner connector (i.e., "corner fold" or "corner flap")
180	..Panel or panel portion is located between two layers of box material
181	..Panel secured in folded position by a separate fastening device (e.g., adhesive tape, staple, etc.)
182	..Panel secured in folded position by a heat weld or adhesive, per se
182.1	.Box includes straight side walls and rounded corners
183	.Bottom wall includes a folded extension of a side wall
184	..Extensions of adjacent side walls foldably attached together
185	..Plural extensions mechanically interlocked with each other
186	.Adjacent side walls connected by a folded web unitary with both (i.e., "corner fold")
187	..And by a laterally folded extension which is unitary with only one of the side walls (i.e., "corner flap")
188	..Tab-like member on web extends through opening in box material
189	..Web secured in folded position by a separate fastening device (e.g., adhesive tape, staple, etc.)
190	.A side wall includes a folded lateral extension of an adjacent side wall (e.g., "corner flap")
191	..Extension forms hollow, upstanding corner element
192	..Each of two adjacent sidewalls has a folded lateral extension where they join
193	..Folded extensions of opposed side walls overlap one another
194	...And are mechanically interlocked with each other
195	..Extension projects into an opening in the box material
196	...Extension projects into two or more separate openings
197	...Extension includes a downwardly opening slit or notch
198	..Extension secured in folded position by a separate fastening device (e.g., adhesive tape, staple, etc.)
198.1	.Adjacent side walls connected only by a separate securing element
198.2	.Miscellaneous joint construction
198.3	..Including separate securing element
199	.Separate reinforcing element
40	.Wrappers
19	.Slide
20	..Dispensing
23 R	.Multiple
23 A	...Multiple bottom
23 AB	...Crossed blanks
23 BT	...Telescoping
23 C	...Wood reinforced
8.5	.Savings
9	.Slide
10	..Compartment
11	..Dispensing
8	.Ornamental
68 R	ENVELOPES
68 C	..Carrying handles
69	.Series
70	.Coupon
71	.Display
72	.Compartment
73	.Return

	ENVELOPES
74	.Tag
75	.Blanks
76	.Closures
77	..Fasteners
78 R	...Metallic
78 A	.....Detachable fastener
78 B	.....Inseparable fastener
79	...Seal
80	..Sealing
81	...Perforated
82	...Tongues
83	...Soluble dye
84	..Tongue
87.01	WRAPPER
87.02	.Shock protection
87.03	.Expansible (e.g., pleated, stretchable, etc.)
87.04	.With handle
87.05	.Including means to facilitate severing the wrapper (e.g., cutting, tearing, etc.)
87.06	.Including transparent portion or window
87.07	.For chewing gum
87.08	.For food
87.09	..Bread wrapper
87.11	..Meat wrapper
87.12	.For a single cigar or cigarette
87.13	.For a pack of cigarettes or cigars
87.14	.For tobacco
87.15	.For apparel
87.16	..Glove or mitten
87.17	..Shirt or blouse
87.18	.For a paperboard box (e.g., cardboard)
87.19	..Gift wrap
87.2	.Coin type
87.5	.Pocketed
89	.Bottle
90	..Corrugated
91	..Padded
92	.Mailing sheets
92.1	.Letter sheets
92.3	..Window
	..Closures
92.5	..Fastener
92.7	..Closure flap
92.8	POSTAL CARDS OR PACKETS
92.9	COIN CARDS
93	TUBES, CYLINDRICAL
67	BARRELS
1.5 R	MISCELLANEOUS
1.5 B	..Cups
1.5 C	...Spoon attached
1.5 H	..Cup holders
2.5 R	PRESSED
2.5 EC	..Egg carton
3.1	LIQUID PROOFED
3.5 R	MATERIAL
3.5 MF	..Metal foil
4.5	CYLINDRICAL OR CONICAL BODY, OR WALL STRUCTURE
5.5	END STRUCTURE
5.6	.Crimped seam
5.7	.Separate fastener
5.8	.Pressed bottoms and tops
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	INCLUDING MEANS TO FACILITATE HANDLING BY A MECHANICAL APPARATUS DURING MANUFACTURING OR FILLING
901	BOX STRUCTURE ALTERNATIVELY USEABLE AS A CONTAINER OR A LID
902	BOX FOR PREPARED OR PROCESSED FOOD
903	.Ovenable (i.e., disclosed to be placed in an oven)
904	.Compartmented fast food holder or lap tray
904.1	.Candy
905	.Frozen food
906	.Baked goods
906.1	CUP LID WITH MEANS FOR FORMING A DRINKING OPENING
907	TRASH BOX
908	PAINT TRAY
909	CIGAR BOX
910	BUCKET OR PAIL TYPE (I.E., LIQUID PROOF CONTAINER WITH HANDLE)
911	.With closure
912	..Separate element
913	DRAWER-TYPE
914	BASKET-TYPE WITH HANDLE
915	STACKING FEATURE
915.1	.Gable-top box
916	.Means for ventilating while stacked
917	.Stacking of collapsed container or blank
918	.Corner construction
919	.Reinforced wall
920	STRESS RELIEF
921	WITH MAILING INDICIA
922	WITH DECORATIVE FEATURE
923	.Gift wrapped
	******************************
	DIGESTS
	******************************
DIG 1	Corner pad
DIG 2	Corrugated seal
DIG 3	Expandable bag
DIG 4	Folds
DIG 5	Grain, involves grain of paper
DIG 6	Handle digest
DIG 7	Ice cream cone carriers
DIG 8	H-slot
DIG 9	Mating blanks
DIG 10	Regenerated cellulose
DIG 11	Stacking
DIG 12	Shrunk cellulose
DIG 13	Sandwich holder
DIG 14	Vents
DIG 15	Zalkind digest

CLASS 231 WHIPS AND WHIP APPARATUS

1	WHIP MACHINES
2.1	WHIP
3	.Convertible whips and canes
4	.Lashes
5	.Lash and snap fastenings
6	.Caps, buttons and joints
7	.Electric prod

CLASS 232 DEPOSIT AND COLLECTION RECEPTACLES

DECEMBER 1990

1 R MISCELLANEOUS
1 A ..Combined mail and food box
1 B ..Laundry holders
1 C ..Newspaper holders
1 D ..Money, coin, check, memo holders
1 E ..Wall receptacle
2 BALLOT BOXES
3 .Ball
4 R SAVINGS BOXES
4 D ..Drawer bottom release
5 .Inspection
6 .Frame fastenings
7 FARE BOXES
8 .Ticket punching and canceling
9 .Multiple coin slot and runway
10 .Ticket and change
11 .Ticket, car
12 .Receivers
13 .Illumination
14 .Change gates
.Collection devices
15 ..Safety receptacles
16 ...Auxiliary
17 LETTER BOXES
18 .Ticket registers and recorders
19 .House
20 ..Collection and delivery
21 ...Compartment
22 ..Door or window jamb
23 ..Inside fastener
24 .Compartment
25 ..Cooperative closures
26 ...Distributing guide
27 .Collection and delivery
28 .Pivoted receiver
29 .Auxiliary, cooperating
30 .Collection devices
31 ..Safety receptacles
32 ...Auxiliary
33 .Package clips and pockets
.Signals
34 ..Sight
35 ...Door-controlled
..Sound
36 ...Door-controlled
.Indicators
37 ..Door-operated
38 .Frame construction
39 .With supports
41 R MILK RECEPTACLES
41 A ..With locking means
41 B ..Leave empty and receive full
41 C ..With turnstile
41 D ..Once openable and locked upon closure
41 E ..With neck lock
42 .Door or window jamb
43 .Funnel filler
43.1 SEPARATE INLET AND OUTLET OPENINGS
43.2 .With removable receiving chamber
43.3 .With means for moving the deposited matter within the receptacle
43.4 .With horizontally aligned inlet and outlet openings
43.5 .With support
44 CLOSURES AND CHUTES
45 .Letter box
46 ..Nameplate
47 ..Pivoted trap
48 ...Double
49 ...Pocket
50 ....Bottomless
51 ....Integral door
52 ...Turnstile
53 ..Discharge
54 ..Guard fingers
55 .Coin trap
56 ..Endless carrier
57 ..Pivoted
57.5 ...Refunding
58 ...Cooperating chute closure
59 ....Multiple trap
60 ...Rotatable
61 ....Turnstile
62 .Gravity reverse checks
63 .Serrated shelves
64 COIN DELIVERERS (E.G., FOR DUMPING INTO COLLECTOR'S HAND)
65 .Swingable or tiltable delivering element
66 ..With controlled discharge outlet

CLASS 234 SELECTIVE CUTTING (E.G., PUNCHING)

DECEMBER 1990

1 METHODS
2 .Comprising utilization of a pattern
3 ..And modification of the pattern or its effectiveness
4 WITH TYPE-WIDTH AND INTER-WORD-SPACE TOTALIZER OR INDICATOR (I.E., FOR JUSTIFICATION)
5 .Embodying exchangeable sub-assembly unit for font change
6 .Embodying means to facilitate error correction
7 .Embodying means to tabulate or to adjust line length
8 .Embodying means to insert justification symbol
9 ..With means to effect selection of justification tools
10 ...With means to insert justification symbol at other than end of line
11 .Embodying means to drive totalizer
12 .."Unit-Wheel" type of counter
13 WITH MEANS TO IMPOSE PROGRAMMED CONTROL OF AUXILIARY-OPERATION
14 .Embodying means to change code
15 .Embodying means to afford choice of programs
16 .Embodying means to shift control between plural input sources
17 ..Diverse sources
18 .Embodying means to effect selection or shift or skip of field
19 ..With change in feed of pattern or work
20 .For start or stop of control from given input source
21 .For stopping after predetermined number of operations
22 WITH MEANS TO IMPOSE RANDOMLY ACTUATED CONTROL OF AUXILIARY-OPERATION
23 .Embodying means to detect order of occurrence of input data
24 ..Zero suppression or insertion
25 .Embodying means to detect indicium in work or pattern
26 ..With group number control of recording
27 ...With control of feed of pattern and/or work
28 ..With means to control feed
29 ...Control of pattern feed
30 .Stopping means
32 ..Upon detection of machine defect or misoperation
33 ...With means to check on tool actuation
34 ....With verifier (data comparator)
35 WITH INPUT MEANS COMMON TO TOOL SELECTOR AND PRINTER
36 .Step by step printer
37 ..On same workpiece
38 WITH NONSELECTIVE CUTTING OR PUNCHING MEANS
39 .Work sizing or cyclic (e.g., feed hole) punching
40 WITH SORTING MEANS OR COPY HOLDER
41 CONVERTIBLE
42 PLURAL TOOL FIELDS
43 .With means to select a given field
44 ..By manually settable means
45 .With independent manual input means
46 NOTCHING OR SLITTING MEANS
47 .Notching
48 ..Uniform depth
49 MEANS FOR CUTTING MOVING WORK
50 .Flying cutter
51 EMBODYING UNICYCLIC TOOL ACTUATING MEANS
52 WITH INTERLOCK BETWEEN TOOL ACTUATOR AND SELECTOR
53 WITH MEANS TO ESTABLISH CONTROL PATH, FROM ONE OF A PLURALITY OF INPUT SOURCES, TO TOOL SELECTION MEANS
54 .Diverse input sources
55 WITH MEANS TO STORE AND RETRIEVE INPUT DATA AFTER REMOVAL OF INPUT-IMPULSE
56 .With read-out in different order
57 .With optionally settable means to clear storage upon read-out
58 .With serial read-out from storage
59 WITH MEANS TO INITIATE TOOL SELECTION BY SENSING PATTERN INDICIA OR CONFIGURED MACHINE ELEMENT
60 .Means to sense cyclically movable machine element
61 ..Serial number punching of work
62 .With repeated sensing of same pattern field
63 .Pattern indicia carried by work
64 ..Processed work as pattern for following work
65 .Including plural input means, jointly effective
66 .Serial read-out from full bank of pattern-sensers
67 .With means to modify effect of pattern data
68 ..By inversion of pattern data
69 ..Code conversion
70 ...Combinational-code to or from one-hole-code
71 ..Means for timing the tool actuation
72 ..Means for transposition, shift or suppression of field
73 ...By adjustable electrical means
74 .By a senser with more than two output signals
75 .Pattern or senser in motion during sensing
76 .Sensing by tool directly engageable with pattern
77 ..Tool actuation blocked by pattern
78 ..Tool actuating force transmitted by pattern
79 .With means to feed pattern or pattern sensing means
80 ..With means to adjust pattern position or feed, or senser
81 ..Senser moves tool into position to receive actuating force
82 ..Senser controls effectiveness of actuating force to selected tool pair only
83 ...Senser actuates tool
84 ..Interposer movable by senser
85 ...Integral or fixed thereto
86 ...Biased interposer and senser
87 ..Senser controls application of power to interposer
88 ...Connects or disconnects interposer linkage and cyclically movable actuator
89 .Pattern or record and/or sensing means per se
90 WITH MEANS TO CAUSE DELAYED ACTUATION OF SELECTED TOOL
91 .With plurality of selecting means sequentially controlled by one input means
92 WITH OPTIONALLY SETTABLE MEANS TO CLEAR TOOL SELECTION
93 .Effective on portion of tool field
94 WITH SPECIFIC MEANS TO SELECT A PLURALITY OF TOOLS (I.E., COMBINATIONAL CODING MEANS)
95 .Successively
96 .With means to change or facilitate change of code
97 .Coded interposer
98 ..Differentially positioned
99 ...Turret of interposers

CLASS 235 REGISTERS

DECEMBER 1990

1 R	MISCELLANEOUS
1 A	..Shutters
1 B	..Game counters
1 C	..Numeral wheels
1 D	..Casings
1 E	..Toy cash registers
1 F	.."Fugitive one" mechanism
2	CASH REGISTERS AND RECORDERS
3	.Check printing
4	CASH RECORDERS
5	.Manual
7 R	CASH REGISTERS
7 A	..Refund devices and coin change
6	.Departmental
8	.Key set
9	..Crank operated
10	..Drawer operated
11	..Motor operated
12	.Key operated
13	..Detail adders
14	..Differential mechanism
15	...Key coupled
16	...Lost-motion mechanism
17	.Checks
18	..Balls
19	.Dial
20	..Independent indicator
21	..Lever operated
22	.Drawer-operating mechanism
23	.Indicator mechanism
24	..Shutters
25	..Tablet droppers
26	.Key arresters
27	.Key locks
28	.Lid registers
33	FARE REGISTERS
29 R	.Multiple
29 A	...Fare register seal
30 R	.Cab-fare indicating
30 A	...Meter preparation
31 R	.Ticket delivery
31 T	...Issue and print
32	.Registering boxes
34	.Dial and cylinder
35	.Belt
36	.Parallel axes
37	..Cylinder
38	..Dial and hand
39	..Disk
40	.Single axis
41	..Concentric disk
42	..Cylinder
43	..Dial and hand
44	.Operating devices
45	..Electric
46	..Punch
47	.Resetting
48	..Direction indicator
49	.Hundreds indicator
51	VOTING MACHINES
50 R	.Recording
50 A	...Recording and registering
50 B	...Voting machines, recording
52	.Assembly
53	.Check operated
54 R	.Key set
54 A	...Interlocks, voting machines
54 B	...Endorsed candidate lockout
54 C	...Primary voting mechanism
54 D	...Cumulative interlocks for voting machines
54 E	...Independent voting mechanism
54 F	...Voting machines, electric
55 R	.Key operated
55 A	...Interlocks; voting machine
55 C	...Primary lockouts
55 E	...Independent voting mechanism
56	.Vote counters
57	REGISTERING BALLOT BOXES
375	SYSTEMS CONTROLLED BY DATA BEARING RECORDS
376	.Operations analysis
377	.Time analysis
378	..Price determination
379	.Banking systems
380	.Credit or identification card systems
381	..With vending
382	..Permitting access
382.5	...Changeable authorization
383	.Mechanized store
384	.Transportation
385	.Inventory
386	.Voting machine
400	ORDNANCE OR WEAPON SYSTEMS COMPUTER
401	.Bombing
402	..Toss
403	.Torpedo director
404	.Aiming
405	..Mechanical computation
406	...With tabular chart, scale, or graph
407	..Compensating for weapon movement (e.g., tilt)
408	.Projectile flight time - fuse setting
409	.Parallex compensation
410	.Coordinate conversion
411	.With target tracking means
412	..Position or course prediction
413	..Calculating speed and direction
414	.Range finder
415	..With range rate change
416	..Range prediction
417	.Ballistic factor determination
418	.Hand adjusted scale mechanism
419	RECORD CONTROLLED CALCULATORS
420	.Machine control
421	.Multiplying
422	.Dividing
423	.Subtraction
424	.Item distribution
425	.Sorting and accounting
426	.Relay- or contact-type storing or accumulating
427	.Differential mechanism, synchronous
428	.Differential mechanism, stop set
429	.Translators
430	.Key operators
431	.With data comparing
432	.With printing
433	..With paper feeding
434	.With punching
435	CODED RECORD SENSORS
436	.Readout control
437	.Error checking
438	.Testing
439	.Particular sensor structure
440	..Multiple sensor
441	..Electrical contact
442	...Perforated
443	....Static sensed
444	..Electromechanical
445	...Perforated record
446	....Sensing element in continuous contact with record
447	....Array
448	...Raised or depressed portions on record
449	..Magnetic
450	...Strengthen or diminish field or flux
451	..Capacitive
452	..Pneumatic
453	..Mechanical
454	..Optical
455	...Light level control
456	...Multiple column code
457	...Holographic
458	...Perforated record

	CODED RECORD SENSORS
	.Particular sensor structure
	..Optical
	...Perforated record
459	....Stationary
460	.....Matrix of cells
461	....One dimensional scan
462	...Bar code
463	....Bar width detection
464	....Radially configured
465	....Color
466	....Timing
467	....Rotating prisms or mirrors
468	...Invisible
469	...Color coded
470	...With scanning of record
471	....Cathode-ray tube
472	...Hand held
473	...Light pipes
474	.Synchronization
475	.Feed mechanisms
476	..Control circuits
477	...Direction
478	..Pneumatic feed
479	..Carriage
480	..Direction reverse
481	..Intermittent feed
482	.Hand feed
483	.Guides
484	..Adjustable
485	..Aligning records
486	.Holding devices
487	RECORDS
488	.Laminated
489	.Perforated
490	.Projections
491	.Fluorescent, phosphorescent, radiation emitting
492	.Conductive
493	.Magnetic
494	.Particular code pattern
495	.Templates and guides
61 R	CALCULATORS
61 A	..Miscellaneous
61 B	..Tabular
61 C	..Integrating
61 D	..Chart integrators
61 DP	..Decimal point indicators
61 E	..Mean or average computers
61 F	..Multiplying machine - miscellaneous
61 FA	..Precomputed products
61 FB	..Variator with counter
61 FC	..Variator with accumulator
61 FD	..Partial products
61 FE	..Successive addition
61 G	..Odds computers
61 GM	..Geometrical
61 J	..Miles per gallon
61 K	..Partial product wherein result is obtained in (one) summation
61 P	..Polynominal
61 L	..Variators - change speed gear devices
61 M	..Volume and price computers
61 NV	..Navigational
61 PS	..Computing scales
61 PA	..Mechanical input-output
61 PB	..Input-output with storage
61 PC	..Input-output from racks to computer
61 PD	..Input-output from register to computer
61 PE	..Input-output from keyboard to computer
61 PF	..Input-output from typewriter to computer
61 PG	..Electrical from computer to adding machine
61 PH	..Input-output electrical from calculator to typewriter
61 PJ	..Input-output electrical from computer to card or tape
61 PK	..Input-output calculator to indicator, printer, etc.
61 PL	..Storage medium conversion
61 PM	..Interconnection, sequencing and programming
61 S	..Transportation
61 T	..Transportation balance computers
61 V	..Transportation time-distance schedules
58 R	.Recording
58 M	...Miscellaneous
58 CW	...Check writers and markers
58 CF	...Paper and carriage feed
56 PS	...Price scales
58 P	...Print
59 R	..Key operated
59 A	....Miscellaneous key operated recording
59 BC	....Multiplying unitary base
59 BD	....Wahl type
59 BE	....Flat bed
59 BF	....Attachment for typewriters
59 CP	....Clear sign printing
59 BG	....Power operated
59 TP	....Total printing
59 T	....Typewriter
59 BH	....Addendoraphs
60 R	..Key set
60 D	....Dalton
60 E	....Ellis
60 G	....Gardner
60 HP	....Hopkin
60 MT	....Multiple totalizers
60 M	....Multiplying
60 PY	....Pay roll
60 S	....Split
60 SS	....Sundstrand
60 TK	....Ten key
60 C	....Item counting
60 TN	....True negative
60 HN	....Hanson
60 P	....Print
60 AP	....Automatic total print
60 TW	....Typewriter
60 B	....Burroughs
60 CK	....Crank
60.11	...By means other than printing or punching
60.12	...Combined with typewriter
60.13	...Multiple recording means
60.19	...Distinctive color
60.15	...Non-numerical data
60.16	....Alphabetical
60.17	....Clearance symbol
60.18	....Function indicating character or symbol
60.2	...True negative total recording
60.22	....Electric readout
60.23	...With split printing
60.24	...With extended totals
60.25	...Non-recording controls
60.26	...Non-add controls
60.27	...Gang recording
60.28	....With zero recording controls
60.29	....By punching
60.3	....With total taking
60.31	.....By zeroizing result elements
60.32	......With blank cycle elimination
60.33	.....By sensing result elements
60.34	......Combined with zeroizing
60.35	.....By differential timing
60.37	.....By direct impression from result elements
60.38	...Digit by digit recording
60.39	....With total taking
60.4	.....Electrical
60.41	...With traveling paper carriage
60.42	....Control of carriage feed
60.44	.....Shuttle type operation
60.45	.....Power operation

	CALCULATORS
	.Recording
	..Key set
	...With traveling paper carriage
	....Control of carriage feed
60.46	.....Columnar
60.47	....Control of function by carriage
60.48	.....Totalizer selection
60.49	.....Locking devices
60.5	.....Carriage bore function control structures
60.51	....Control of platen or paper feed
60.52	....Control of functions from platen or paper feed
200 R	.Including means utilizing fluid, e.g., fluid amplifiers
200 PF	...Analog pure fluid
200 WB	...Weigh beam
201 R	..Digital pulse
201 ME	....Moving elements
201 FS	....Fluid sensor
201 PF	....Pure fluid
62 R	.Motor actuated
62 A	...Key set
62 B	...Key operated
62 C	...Wright - Degene (underwood) type
62 D	...Calculators, motor actuated
62 E	...Calculators, motor actuated, Elliot Fischer type
62 F	...Motor circuit and clutch control (mult. and div. control)
63 R	.Traveling carriage
63 A	...Manually operated
63 B	...Machines with ten keys or less
63 C	...With master wheels
63 D	...Power operated
63 E	...Auto-control incident to multiplying and dividing
63 F	...Auto-control incident to dividing
63 G	...Divided - divisor aligning mechanism
63 H	...Automatic multiplication
63 J	...Both factors preset in full
63 K	...One factor only preset in full
63 L	...Miscellaneous
63 KP	...Key operated
63 KS	...Key set
63 DE	...Decimal elimination
64	.Adding pencils
64.3	.Decimal point locators
64.7	.Photographic
65	.Bar and disk
66	.Cylinder and disk
67	.Spiral
68	.Ball
69	.Bar
70 R	..Slide rules
70 A	....Special use slide rule
70 B	....Runners, cursors
70 C	....Scales
70 D	....Slide rule pencils
71 R	.Belt
71 A	...Slide rule tape
72	.Parallel axes
73	..Cylinder
74	..Disk
75 R	...Key operated
75 T	.....Thomas-type machines
76	..Gear
77	.Single axis
78 R	..Concentric disk
78 A	....Adders
78 F	....Financial
78 G	....Games
78 M	....Mathematics
78 N	....Navigation
78 RC	....Rhythm calculators
79	..Cylinder
79.5	...Slide rules

80	...Keyless
81 R	....Lever operated
81 A	......Odner type
82 R	...Key operated
82 C	.....Comptometer
82 FK	.....Five key
82 TK	.....Ten key
82 MK	.....More than ten keys
82 SK	.....Single key operated multiplying
82 K	.....Key set
83	..Disk; dial and hand
84	...Slide rules
85 R	.Tabular
85 FC	...Rhythm cycle (fertility)
86	..Belt
87 R	..Cylinder
87 A	....Computing and weighing scales
88 R	..Disk
88 F	....Financial
88 G	....Games
88 M	....Mathematics
88 N	....Navigation
88 RC	....Rhythm calculators
89 R	..Sheet
89 A	....Computing and weighing scales
90	PEG TALLY BOARDS
102	TYPEWRITER WORD COUNTERS
94 R	LIQUID REGISTERS
94 A	..Volume and price
98 R	PACKAGE OPERATED
98 A	..Reactive package
98 B	..Package operated switch
98 C	..Interrupted radiant energy ray
100	REGISTERING BOXES
99 R	PLATFORM OPERATED
99 A	..Platform actuated traffic counters
101	STAMP
93	GATE AND TURNSTILE OPERATED
95 R	ODOMETERS
95 A	..Excess speed
95 B	..Hub
95 C	..Odometers, pendulum type
96	.Details
97	.Trip and total
103	ROTATION COUNTERS
103.5 R	.Comparing
103.5 E	...Extensometers
104	.Timing devices
105	PEDOMETERS
123	BALL BUTTON OR PUSH BUTTON INDICATOR
124	BAR AND SCALE
125	BELT
127	PIVOTED INDICATOR
106	ANGLED AXES
107	SPIRAL
108	PARALLEL AXES
109	.Gear
110	.Cylinder
111	.Dial and disk
112	.Dial and hand
113	.Disk
114	..Hand operated
115	SINGLE AXIS
116	.Concentric disk
117 R	.Cylinder
117 A	...Manually operated
118	..Single cylinder
119	.Differential gears
	.Dial and hand
120	..Multiple hand
121	..Single hand
122	.Disk
91 R	OPERATING DEVICES
91 PR	..Plural registers
91 A	..Double acting pawl escapement with double arm pawl
91 B	..Billiards and pool
91 C	..Photograph

	OPERATING DEVICES
91 D	..Time interval totals
91 E	..Telephone
91 F	..Pressure and vacuum
91 G	..Summation
91 H	..Inertia, speed and distance indicator
91 J	..Register key
91 K	..Register ball actuated
91 L	..Mechanical store
91 M	..Magnetic
128	ALARM MECHANISM
130 R	LOCKING MECHANISM
130 KD	..Incomplete key depression
130 TC	..Typewriter computing
131 R	OVERTHROW PREVENTERS
131 FD	..Frictional detent
131 M	..Miscellaneous
131 JA	..Jamming action
132 R	WITH CONTROL MEANS OPERABLE ON PREDETERMINED REGISTER READING
132 A	..Predetermined count, self-resetting
132 E	..Electrical
133 R	TRANSFER MECHANISM
133 A	..Electrical
134	.Cam and lever
135	.Deep notch
136	.Differential gears
137	.Independent actuator
138	..Successive
139 R	.Intermediate pinion
139 A	...Internal pinion
140	.Side tooth
141	..Lock
142	.Traveling pawl
143	..Side action
144 R	ZERO-SETTING DEVICES
144 DM	..Disconnected member
144 M	..Miscellaneous
144 PN	..Pawl and notch
144 ME	..Magnetic, electromagnetic, and electric motor reset
144 C	..Complement
144 HC	..Heart cam
144 D	..Dispensing
144 S	..Shaft set, miscellaneous
144 SS	..Separate shaft
144 SM	..Shaft movable
144 SP	..Spring
144 MG	..Mutilated gear
144 TP	..Traveling pawl
144 ET	..Elapsed time registering
144 MA	..Maximum demand
144 B	..Rake reset
144 EA	..External mechanism only with or without drive disconnect
144 E	..Electrical
144 TB	..Total printing
145 R	KEYBOARDS
145 A	..With total transfer to keyboard or the like
146	.Auxiliary

CLASS 236 AUTOMATIC TEMPERATURE AND HUMIDITY REGULATION

DECEMBER 1990

1 R	MISCELLANEOUS
1 A	..Burner controls not elsewhere classified in class
1 B	..Zone control for heating and cooling medium
1 C	..Heating and cooling controls
1 D	..Stoker controls
1 E	..Multistage controls
1 EA	...Multiple valve staging
1 EB	...Single valve staging
1 F	..Piezoelectric crystal and other electric unit temperature controls
1 G	..Heat conserving damper control
1 H	..Burner controls with automatic cutoff
2	INCUBATOR TYPE OF HEATER
3	.Electric
	.Thermostatic
4	..Expanding fluid
5	..Expanding solid
6	BROODER TYPE OF HEATER
7	SADIRON TYPE
8	ATOMIZER TYPE OF BURNER
9 R	COMBINED HEATER AND APARTMENT CONTROLLED
9 A	..Combined heating and apartment control with heating medium circulation control
10	HOT-AIR FURNACE
11	.Air and fire control
12.1	MIXING FLUID OF DISSIMILAR TEMPERATURE
12.11	.Mixing valve with temperature motive means
12.12	..Having electrical motive means
12.13	.Including bypass
12.14	.Fluid from only one supply is controlled
12.15	.Including separate relatively movable valve for each fluid supply
12.16	.having oscillating or reciprocating valve
12.17	..Valving member moves about an axis
12.18	...Tubular valve member
12.19	...Axially spaced flow control faces
12.2	..Tubular valve member
12.21	..Axially spaced flow control faces
12.22	..Seats face outwardly
12.23	..Ports closed by valve action
13	.Plenum type
14	COMBINED BOILER AND FURNACE CONTROLLED
15 R	FURNACE CONTROLLED
15 A	..Domestic oven controls
15 BR	..Commercial furnace controls
15 BA	...Solid fuel burning
15 BB	...Product and furnace temperature sensor
15 BC	...With conveyor thru furnace
15 BD	...Air and fuel control
15 BE	...Recuperator, gas turbine, melting furnace
15 BF	...Specialized furnace or heater, e.g., crystal growing
15 BG	...Timer or program
15 C	..Furnace controlled responsive to pressure
15 E	..Furnace controlled responsive to combustion products composition
16	COMBINED DRAFT AND CHECK CONTROL
	EXCHANGE HEATERS
17	.Pressure-operated
	.Thermostatic
18	..Expanding fluid
19	..Expanding solid
20 R	CLOSED FLUID HEATERS
20 A	..Top burner control
21 R	.Safety cut-out
21 B	...Water heater control with excessive temperature cutoff
22	.Radiator type
	.Combined thermostat and flow controlled
23	..One valve
24	..Two or more valves
24.5	.Flow and pressure controlled
25 R	.Flow controlled
25 A	...Flow responsive valve controlling fuel
26 R	.Pressure-operated
26 A	...Gas burner controls
26 B	...Pressure responsive means controls draft
26 C	...Pressure responsive elements per se
26 D	...Pressure responsive means controls forced draft
26 E	...Pressure responsive means controls oil burner
26 F	...Pressure responsive means controls fluid coupling
27	..With balancing pressure chamber
28	..Stroke retarding
29	..Relay, puppet
30	..Bourdon type
31	..Float
	.Thermostatic
32	..Expanding fluid
33	..Expanding solid
34	COOLING RADIATOR
34.5	.Bypass
35	.Air control
35.2	..Shutters
35.3	...Servomotor
36	HEATING RADIATOR
37	.Combined radiator and apartment controlled
38	.Air control
	.Exhaust operated
	..Fluid-operated motor
39	...Aspirator
40	..Thermostatic
41	...With trap
	.Thermostatic
42	..Expanding fluid
43	..Expanding solid
44 R	HUMIDITY CONTROL
44 A	..Humidity control per se
44 B	..With evaporator cooling spray
44 C	..Humidity and temperature control
44 E	..With electrical conductive element
45	DRAFT-OPERATED
46 R	WITH TIMING ELEMENT
46 A	..Diverse sensor
46 B	..Stoker control
46 C	..Controlled diverse means
46 D	..Domestic oven
46 E	..Hot air furnace
46 F	..Timer other than clock
47	HIGH AND LOW TEMPERATURE ALTERNATE
48 R	SNAP-ACTING
48 A	..Including a permanent magnet
49.1	VENTILATOR TYPE
49.2	.Responsive to fire or smoke
49.3	.Electrically actuated
49.4	.Pneumatically actuated
49.5	.Mechanical linkage actuated
50	LIQUID VALVE
51	DISTANCE-ADJUSTED
52	FLOAT-OPERATED
	TRAPS
	.Float valve
53	..Thermostatic air valve
	.Pressure-operated valve
54	..Thermostatic pilot
	.Thermostatic
55	..With float-controlled pilot
56	..Expanding fluid
57	...Bourdon type
58	...Wafer type
59	..Expanding solid
60	...Conduit

AIR-RELIEF VALVES
.Radiator type
..Thermostatic
61 ...With pressure control
62 ...With separate float
63 ...Expanding float
64 ...Expanding fluid
65 ....Float-operated
66 ...Expanding solid
67 MOTORS
.Relay
68 R ..Auxiliary heater
68 A ....Heated expansible chamber vaporizer liquid injected by thermostat
68 B ....Auxiliary heater applied to main temperature sensing means
68 C ....Auxiliary heater applied to control device away from main temperature sensor
68 D ....Thermo-controlled pilot burner operates a heat motor to actuate main fuel valve
69 ..Pyrometer galvanometer
70 ...With beating element
71 .Balanced
72 ..Thermostatic relay
73 .Continuous drive
74 R .Electric
74 A ...Electric motor driven pump
75 ..Reciprocating or oscillating
76 ..Step-by-step
77 ..Vibrating arm
78 R ..Relay
78 A ....Plural control elements
78 B ....Plural temperature sensors
78 C ....Reversible motor
78 D ....Proportional control
.Fluid-operated
79 ..Relay
80 R ...Shunt
80 A .....Airplane
80 B .....Plural main valves
80 C .....Plural temperature sensors
80 D .....Pure fluid
80 E .....Plural pilots by single actuator
80 F .....Diaphragm biased open by line pressure
80 G .....Piston-type valve operator
81 ...Snap-acting
82 ...Compound
83 ....Snap-acting
84 ...Electric
85 ...Pressure-operated
...Thermostatic
86 ....Expanding fluid
87 ....Expanding solid
88 .Magnetic release
89 ..Safety cut-out
90 .Thermal release
THERMOSTATIC
91 R .Hot and cold
91 A ...Nonhabitable enclosure, e.g., incubator
91 B ...With oil burner
91 C ...With diverse sensor, e.g., humidity, pressure
91 D ...Heating and cooling
91 E ...Plural room or plural outside thermostat
91 F ...With at least one temperature sensor for temperature modifying media
91 G ...Current modifying sensor
92 R .With pressure control
92 A ...Combined with fuel gas pressure regulator
92 B ...Refrigeration expansion valves
92 C ...Pressure- and temperature-actuated relief valves
92 D ...Pressure- and temperature-actuated valves associated with carburetors
93 R .In fluid controlled
93 A ...Expanding fluid
93 B ...Shower heads
94 .With indicator or alarm
.Flue or heater attached
95 ..Expanding fluid
96 ..Expanding solid
97 .Cooled element
98 .Fluid transmission
99 R .Expanding fluid
99 A ...Nontemperature sensor
99 B ...Nonvalving device
99 C ...External and internal sensors
99 D ...Heat shield
99 E ...Plural temperature sensors
99 F ...Pivoted valve
99 G ...Lever
99 H ...Liquid fuel feed
99 K ...Wax thermostat
99 J ...In flow line
100 ..Float or piston operation
101 R .Expanding solid
101 A ...Plural inlets or outlets
101 B ...Plural thermostats
101 C ...Thermostat with I.C.E.
101 D ...Coil thermostat
101 E ...Compound lever
102 ..Concentric elements
103 ..Conduit
104 ..Fire pot

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DIGESTS
****

DIG 1 Adjustable lever
DIG 2 Fail safe
DIG 3 Safety electric
DIG 4 Safety vacuum
DIG 5 Fusible
DIG 6 Clamp on
DIG 7 Coil bulb
DIG 8 Computer
DIG 9 Fan control
DIG 10 Filling
DIG 11 Expandible fluid
DIG 12 Heat conductor
DIG 13 Humidithermostat
DIG 14 Intermittant control
DIG 15 Photocell
DIG 16 Relief spring
DIG 17 Spring rate compensator
DIG 18 Rubber
DIG 19 Ventilated thermostat

CLASS 237 HEATING SYSTEMS

DECEMBER 1990

1 R	MISCELLANEOUS
1 SL	..Special liquid
2 R	AUTOMATIC CONTROL
2 A	..Automatic heating systems with controls
2 B	..Heat source is a reverse cycle refrigerating system or heat pump
3	.Brooder and incubator
4	..Water
5	.Car
6	..Steam
7	.Combined radiator and boiler
8 R	.Water
8 A	...Automatic heating systems (water) with controls
8 B	...Heating systems with high temperature boiling liquids
8 C	...With boiler by-pass valve control
8 D	...Compact heating systems with controls
9 R	.Steam
9 A	...Automotive systems
9 B	...With direct contact between products of combustion and the liquid to be vaporized
10	..Gas displaced
11	.Compressed air
12	.Processes
12.1	HEAT AND POWER PLANTS
12.2	.Fire engine
12.3 R	.Vehicle
12.3 A	...The heating is effected by circulated air
12.3 B	...The heating is effected by circulated hot water
12.3 C	...The heating system includes a combustion type heater
12.4	.Car
12.5	..Smoke
12.6	..Air
12.7	...Radiator
12.8	..Steam
13	PLANTS
14	BROODER AND INCUBATOR
15	.Water
16	COMBINED RADIATOR AND BOILER
17	.Fluid fuel
18	.Solid fuel
19	COMBINED WITH WATER HEATER
28	VEHICLE
29	.Stove
30	..Air casing
31	..Depending
32	.Fluid fuel
33	..Radiator
34	.Water
35	..Car boiler
36	...Fluid fuel
37	...Train steam
38	....Injected
39	..Train steam
40	.Steam
41	..Car boiler
42	...Train steam
43	.Heated floor
44	.Heat accumulator
45	.Encased radiator
69	HEATED FLOOR
46	VENTILATING
47	.Stove
48	.Furnace
49	.Enclosed radiator
50	AIR
52	.Stove
53	.Furnace
54	.Upper-room drum
55	.Flue heated
56	WATER
57	.Fluid fuel
58	.Steam
59	.Circulation
60	..Geyser boiler
61	..Auxiliary boiler
62	..Boiler loop
63	..Pump
64	...Steam displacing
65	.Pressure regulator
66	.Expansion tanks
67	STEAM
68	.Air discharge
70	HEAT RADIATORS
71	.Water, steam
72	..Injected
73	.Steam
74	..Circuit
75	..Heat accumulator
76	.Ceramic
77	.Foot warmer
78 R	.Air moistener
78 A	...Casing
78 B	...Radiator wick
78 C	...From radiator valve
79	.Shields
80	ANTIFREEZING DEVICES
81	PROCESSES

****

DIGEST

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DIG 1	Inert gas

CLASS 238 RAILWAYS, SURFACE TRACK

DECEMBER 1990

1	MISCELLANEOUS
2	ROADBED
3	.Highway track
4	..Metallic
5	..Concrete
6	.Continuous
7	..Concrete
8	.Street crossing
9	.Rail paving
10 R	PORTABLE TRACK
10 A	..Toy truck systems
10 B	..Simulated roadbeds
10 C	..Continuous roadbeds
10 E	..Toy track, rail-guided
10 F	..Toy track, slot-guided
11	.Embankment or fill
12	.Crossovers
13	.House moving
14	.Traction mats
14.05	ELECTRICAL CONNECTIONS
14.2	.From rail to noncontiguous rail or other object
14.3	.Special rail
14.4	.Combined rail joint or support
14.5	..Interposed conductor
14.6	...Rail web contacting
14.7	..With intermediate bond-wire support
14.8	.Dowel pin or inserted key type
14.9	.Protected bond
14.1	.Plural or laminated bond
14.11	..On both sides of rails
14.12	.Rail bond forms
14.13	.Rail-head attached
14.14	.Rail-base or flange attached
14.15	..Molded joint
15	TRACK CURVES
16	.Rollers
17	GUARDRAILS
18	.Spring
19	.Under main rail
20	.Two-rail chair
21	.Two-rail clamps
22	.Spacers
23	..Tapered
24	STRINGERS
25	.Concrete
26	.Metallic
27	TIE ARRANGEMENT
28	.Diagonal
29	TIES
30	.Forms
31	..Jointed
32	...Hinged
33	...Pivoted ends
34	..Detachable ends
35	..Multiple section
36	..Vertical sandwich
37	..Horizontal sandwich
38	..Twin
39	..Complementary sliding lock
40	..Truss
41	...Integral
42	..Stringer ends
43	..Loop or hook ends
44	..Spread ends
45	..Special
46	...Rail joint
47	...Bridge joint
48	...Spring
49	...Old rail
50	.Rods
51	..Rail-base
52	..Turnbuckle
53	..Screw rod
54	.Cross section
55	..Two-part
56	...Channels
57	...I-beam
58	...Angles or T's
59	..Channel flange down
60	...Sheet metal
61	...Rolled
62	..Channel flange up
63	...Sheet metal
64	...Rolled
65	..I-beam
66	...Rolled
67	..T-shape
68	...Cast
69	...Inverted
70	..Tubular
71	...Multiple
72	...Rectangular
73	....Vertical telescope
74	....Separate lid and bottom
75	....Separate bottom
76	....Separate lid
77	....Folded sheet
78	....Integral
79	.....Cast
80	...Triangular
81	...Circular
82	.Corrugated
83	.Nonmetallic
84	..Plastic compound
85	...Internal reinforcements
86	....Truss
87	....Tube
88	....Cast
89	....Rolled section
90	....Closed loop
91	....Rods
92	.....Crosstied
93	....Foraminous sheet
94	....Wire
95	...Armored
96	....Box
97	....Tube
98	....Side and bottom
99	....Side and top
100	....Sides
101	....Top
102	....Top and bottom
103	....Bottom
104	.End closures
105	.Spacers
106	.Anchor lugs and ribs
107	.Insulation
108	..Sectional tie
109	PEDESTALS
110	.Pot
111	..Cast
112	.Wrought plate
113	..Inverted "U"
114	.Tube or box
115	.Concrete block
116	..Chair bar
117	..Bar core
118	.Wood block
119	.Pier
120	.Screw
121	RAIL ARRANGEMENT
122	RAILS
123	.Rack
124	.Turnout
125	.Vignoles
126	..T-base insert
127	.Channel
128	..Integral
129	.Trough and filler
130	.T-rail
131	.Webless or flat
132	.Reversible
133	..Triple head
134	.Tubular
135	..Integral

RAILS
136 .Step tread
137 .Biped
138 .Base bar
139 .Side bars
140 .Detachable guard or step
141 .Split base and web
142 .Split tread
143 .Detachable head
144 ..Lap web
145 ..Grooved web
146 ..Integral grooved base
147 ..Web clamp
148 .Tread surfaces
149 .Webs
150 .Substance
151 RAIL JOINTS
152 .Insulated
153 ..Transverse abutting
154 ..Chair
155 ...Twin
156 ....Base plate or bolted
157 ...Angle
158 ....Weber type
159 ..Splice bars
160 ...With base plate
161 ...In channel
161.5 .Lubricant- or liquid-containing
162 .Cast on
163 .Molten filler
164 .Welded
165 .Switch rail
166 .Pivoted
167 .Compromise
168 .Truss rod
169 .Parallel beams
170 .Gravity
171 .Expansion deflectors
172 .Vertical adjustment
173 .Yielding rail end
174 .Variable levels
175 .Special rails
176 ..Channels
177 ..T-web U-base
178 ..Flat
179 .Internal key
180 .Flush web key
181 .Web key splice lock
182 .Joint lug key
183 .Integral web key and bars
184 .Web locks
185 .Z-form
186 ..Base-connected
187 .Chair
188 ..Twin
189 ...Base stiffener
190 ...With base plate
191 ...Base-bolted
192 ...Lapping base sections
193 ...Interlocked base sections
194 ....Longitudinal keys
195 ..Angle
196 ...Pivoted
197 ...Splice lug engagement
198 ...Sliding splice lock
199 ....Base plate underlap
200 ...Weber type
201 ...Transverse slide
202 ....Screw-operated
203 ....Horizontal wedge
204 ....Vertical wedge
205 ..Integral
206 ...Base filler
207 ...One-side filler
208 ...Two-side filler
209 .Base plate
210 ..Top flange
211 ..Angle-bar underlap
212 ..Angle-bar overlap
213 ..Base stiffeners
214 ..Distorted
215 ..Center seat
216 ..Rail lock
217 ..Side clips
218 .Tread bridge
219 ..Rail-head insert
220 ..Rail-head cover
221 ..Notched head
222 ...Twin
223 ..Head section
224 ...Saddle
225 ..Rail section
226 ...Splice key
227 ..Spacer
228 ...Expansible
229 ..Web posts
230 .Scarf
231 ..Longitudinally assembled
232 ...Twin
233 ...With vertical drop
234 ..Longitudinal or vertical
235 ..Vertical drop
236 ..Laterally assembled
237 ...Twin
238 ...Longitudinal lock
239 ....Twin
240 ..Angularly assembled
241 ...Longitudinal
242 ...Lateral
243 .Splice bars
244 ..Multiple part
245 ..Toggle
246 ..Rail guide
247 ...Attached
248 ..Rail sleeve
249 ..Longitudinal bolts
250 ..Bar lugs and splice keys
251 ..Bar bolts and splice keys
252 ..Slotted bolt locks
253 ..Bolt keys
254 ..Rail-groove swing
255 ..Cam-tightened
256 ..U-bars and loops
257 ..Vertical bevel flange
258 ..Tapered
259 ..Springs
260 ..Fasteners
261 ...Double and split keys
262 ..Nut and bolt lock
263 ..Adjustable joint clamps
264 RAIL SEATS
265 .With anchor in concrete
266 .English chair
267 .T-rail
268 .Inverted channel rail
269 .Cast
270 ..With tie
271 ..Plane top
272 .Wrought
273 ..With tie
274 ..Plane top
275 .Twin jaws
276 ..Wrought
277 .Pivoted
278 .Jaw and seat
279 .Gravity
280 .Saddles
281 .Vertical adjustment
282 .Lateral adjustment
283 .Cushions
284 ..Metal springs
285 ..Wood blocks
286 .Spiking blocks
287 TIE-PLATES
288 .Gauge
289 .Plural tie

TIE-PLATES
290 .Lap
291 ..Interlock
292 .Rail brace
293 ..Integral
294 .Spike lock
295 ..Lug on spike
296 ..Pawl
297 .Anchors
298 ..Integral
299 .Tie butting
300 .Sleeve
301 .Reversible
302 ..Spring
303 .Screw spike
304 .Top surface
305 .Rotary
306 .Rail-base seats
307 .Contour
308 .Spike-hole arrangement
309 .Spike-shank brace
310 FASTENINGS
311 .Welded
312 .Protective boxes and closures
313 .Universal
314 .Yoke
315 .Rail anchors
316 ..Pawl
317 ..Cam
318 ..Rail recess
319 ..Rail lug
320 ..Distorted rail
321 ..Tie contact
322 ...Cam
323 ...Swinging clip
324 ...Wedge
325 ...Bevel slide
326 ....Reversed lap
327 R ...Twin jaws
327 A .....Two-part, with lock
328 ....With wedge
329 ...Diagonal
330 ....Integral
331 .Transverse slide
332 ..Screw-operated
333 ..Horizontal wedge-operated
334 ..Vertical wedge-operated
335 .Abutting screw point
336 .Rail brace
337 ..Vertical slide
338 .Clamps
339 ..Gauge
340 ..Multiple face
341 ..Cam adjustment
342 ..Nut type
343 ..Anchors
344 ...Vertical face
345 ...Vertical shank
346 ...Ratchet
347 ..Bevel guide
348 ..Internal arm
349 ..Spring
350 ..Integral with tie
351 ..Clip type
352 ...Double
353 ...Vertical wedge
354 ...Horizontal wedge
355 ..Hooks
356 ...Pivoted
357 ...Twin
358 ....Through bolt
359 ....Single pivot
360 ..Lever
361 ..Wedges
362 ...Parallel
363 ...Aligned
364 ...Flange
365 ...Locks
366 .Spikes
367 ..Interlock
368 ..Bent
369 ..Split end
370 ..Plug
371 ..Socket
372 ..Screw
373 ...Sockets
374 ..Socket and wedge
375 ..Lock
376 ..Ratchet
377 .Bolt anchors and sleeves
378 .U-bolts and clips
379 FOOT GUARDS
380 .Switch point
381 .Wheel-depressed
382 DEADENING NOISE
****
DIGEST
****
DIG 1 Track structure assembled by gluing

CLASS 239 FLUID SPRINKLING, SPRAYING AND DIFFUSING

DECEMBER 1990

1 PROCESSES
2.1 .Of weather control or modification
2.2 ..Snowmaking
3 .Including electrostatic charging
4 .Vibratory or magneto-strictive projecting
5 .Of fuel injection
6 .Involving slow diffusion
7 .Including centrifugal force or spattering
8 .Including mixing or combining with air, gas or steam
9 ..And additional dissolving or entraining of material in liquid stream
10 .Including dissolving or entraining in liquid stream
11 .Of discharge modification of flow varying
12 ..Involving drinking or ornamental fountains
13 .Including heating or cooling
14.1 WEATHER CONTROL
14.2 .Snowmaking
690 ELECTROSTATIC TYPE
690.1 .Induction charging
691 .With automatic safety feature
692 .With electrogasdynamic generator in spray device
693 .Spray device recovers unused particles
694 .With cyclical movable support
695 .Plural spray devices
696 .Having plural exit openings
697 .Fixed member deflects exiting material
698 ..Forward of nozzle
699 .With impeller (e.g., vibrator)
700 ..Rotary
701 ...With spray portion intercept member
702 ...With axially spaced impeller surfaces
703 ...Dish- or cone-shaped impeller
704 .With fluid entrainment
705 ..With air outlet forward of material outlet
706 ..With charging electrode mounted on spray device
707 ...Extending forward of material outlet
708 .Pressurized spray material
16 FOUNTAINS OR DRINKING TUBES AND STRAWS
17 .Ornamental
18 ..With illuminating means
19 ...With ground distributing means (e.g., lawn sprinklers)
20 ...With recirculating means
21 ..With reversible feed and waste chambers
22 ..Fluid pressure discharging means (e.g., aspirating)
23 ...Liquid pump, pulsator or follower
24 .Drinking
25 ..With or for attachment to faucet
26 ...Swivelly mounted single outlet means
27 ...Swingable into or out of deflecting position
28 ..With catch basins
29 ...With flow line valve
29.3 ....Portable, or with self-contained liquid holder
29.5 ....Leg or foot actuated valve operator
30 ...Extensible or flexible bubbler nozzle
31 ..Converging jets or bubblers (e.g., bubble cups)
32 ...With self-closing discharge valve
33 ..Portable drinking tubes and straws
34 SLOW DIFFUSERS
35 .With empty or refill signal or indicator
36 .Garment or body attached
37 .Gravity flow of liquid from supply holder
38 ..Free drip to open holder
39 ..Barometric flow to secondary holder
40 ...Drip discharge from secondary holder
41 ....To porous distributor to atmosphere
42 ...Porous distributor to atmosphere
43 ..To porous distributor exposed to atmosphere
44 .With wick or absorbent means removing liquid from holder
45 ..Serially arranged wicks or absorbent means
46 ...With means for drip escape from casing
47 ..Nonuse housing or casing arrangement (e.g., stored in supply)
48 ...Reel-type storage
49 ..With flow varying means
50 ...Relatively movable wick and supply for discharge or adjustment
51 ..With means for drip escape from holder
51.5 ..In housing having multiported wall spaced from absorbent means
52 .Reel or spool type support means
53 .Liquid supply in absorbent or porous media only
54 ..Rigid solid form media
55 ..With enclosing casing
56 ...Pad type
57 .With support for porous or apertured encasing means
58 .With means to adjust casing porosity or openings
59 ..By alignment of apertured members
60 .Solid form vaporizable material
61 WITH SELECTIVE PROPORTIONING OR CORRELATED FLOW FOR PLURAL FLUIDS
62 .Having traversing motion responsive means
63 WITH CUTOFF OR FLOW VARYING MEANS OPERATED BY MEANS RESPONSIVE TO DISCHARGED FLUID (E.G., GROUND MOISTURE SENSING)
64 .With overriding second control means
65 .By level or weight in testing receiver
66 SERIALLY OPERATED DISTRIBUTION MEANS
67 WITH SELECTIVELY PRESET FLOW CUTOFF OR INITIATING MEANS
68 .By rate of flow or volume means
69 .By programming means
70 .Timer means
71 WITH SIGNALS, INDICATORS, RECORDERS, METERS OR CHANGEABLE EXHIBITORS
72 .Audible
73 .Position or extent of motion indicator
74 .With spray material quantity or flow indicating means (e.g., sight gauge)
75 WITH VISCOSITY OR TEMPERATURE RESPONSIVE CONTROL MEANS
76 WITH PRESSURE OR FLOW EQUALIZATION MEANS TO PLURAL DISTRIBUTORS
77 ORCHARD-TYPE MOBILE DISTRIBUTOR COMPRISING FLUENT DISCHARGED INTO GASEOUS CONVEYING CURRENT
78 .With current directing louvers
79 WITH MEANS FUSING SOLID SPRAY MATERIAL AT DISCHARGE MEANS
80 .Plural supply means for solid spray materials
81 .Electric arc, spark plug or induction heating
82 .Nozzle with molten pool holder
83 .Wire or rod type supply
84 ..Moving feeder for fusible wire or rod
85 .With supply holder for fusible material (e.g., pulverulent solids)

86 INJECTION NOZZLE HAVING CAPILLARY TYPE FEED PASSAGES
87 INJECTION NOZZLE HAVING PLUNGER OR VALVE CONTROLLED BY PRESSURE BEYOND NOZZLE OUTLET (E.G., COMPRESSION PRESSURE OPERATED)
88 UNITARY INJECTION NOZZLE AND PUMP OR ACCUMULATOR PLUNGER
89 .Accumulator plunger biased to discharge fluid
90 .Plunger interconnected or mounted bypass
91 .Plunger interconnected or mounted valve (e.g., outlet valve)
92 .Fluid operated plunger motor
93 FLOW REGULATOR OPERATED CONCURRENTLY WITH INTERMITTENT FLUID PUMP
94 .Plural motor surfaces on flow regulator (e.g., opposed)
95 UNITARY INJECTION NOZZLE AND VALVE WITH CONTINUOUSLY INTERMITTENT OPERATOR
96 INJECTION NOZZLE OPENED BY RELIEVING SUPPLY (E.G., ACCUMULATOR TYPE)
97 PATTERN CONTROL BY SYNCHRONIZING FLOW REGULATOR MEANS WITH CYCLICALLY MOVING DISTRIBUTOR
98 .Plural outlets with abutment operated flow diverter
650 CONTAINER FOR NON-FLUID MATERIAL, AND SCATTERING MEANS
651 .With loading or loading facilitating means
652 .Scattering by direct manual movement
653 .Body supported
654 .With means generating or supplying gaseous mixing current
655 ..Laterally extending scatter unit
656 .Scatterer fed by plural containers
657 .Container tilted for discharge (e.g., dump truck, etc.)
658 .Scattering means is flail
659 .Scattering means has to and fro movement (e.g., vibratory, etc.)
660 .With overload release or relief
661 .With means for mounting on tractor
662 .With feature relating to liquid material
663 .Convertible or combined
664 .Ambulant container and laterally extending scatterer
665 .Including means varying scatter pattern of rotating scatterer
666 ..Adjustable deflector
667 .Plural, rotary scatterers, on intersecting axes or coaxial and counter-rotating
668 .Hopper and gravity discharge to scatterer receiving material peripherally
669 ..Scatterer at least partially within hopper
670 .Drive from vehicle motor power take off
671 .Including raking type conveyor moving material toward scatterer
672 .Including driven conveyor or follower feeding material horizontally towards scatterer
673 ..Plural scatterers receiving material axially
674 ..Feed means outside of primary supply container
675 ..Screw conveyor
676 ..Including movable gate, barrier or valve upstream of scatterer
677 ..Speed varying means for driven scatterer or feed
678 ..Limit means stopping feed
679 ..Rotating scatterer receiving material peripherally
680 ...Rotating feed or strewing unit (e.g., beater, etc.) upstream of scatterer
681 .Rotating scatterer
682 ..Plural
683 ..Including agitating means
684 ..Including specific driving means
685 ...From ground wheel
686 ...Manual or pedal
687 ..Scatterer receives material axially
688 ...Scatterer has radially directed tube
689 .Scatterer is tubular or in surrounding housing
99 WITH MEANS CAUSING INTERMITTENT INTERRUPTION OF SUPPLY TO DISTRIBUTOR MEANS (I.E., ON-OFF)
100 .Ground wheel controlled intermitter
101 WITH MEANS FOR FLUCTUATING FLOW OR PRESSURE OF FLUID SUPPLIED TO DISTRIBUTOR MEANS
102.1 WITH MEANS TO VIBRATE OR JIGGLE DISCHARGE
102.2 .By electric transducer (e.g., piezoelectric crystal)
103 NOZZLE CARRIED APERTURED SHIELD AND COLLECTOR
104 WITH CLEANING MEANS, DRIP COLLECTING, WASTE DISPOSAL OR SOIL PREVENTING GUARDS OR SHIELDS
105 .Soil preventing gas shield
106 .Nozzle cleaner, flusher or drainer
107 ..With means for enlarging spray openings beyond normal operating position
108 ...With separate fluid reacting surface
109 ....Reduction of fluid pressure affects opening (e.g., self-draining showers)
110 ..With separate drain or access opening
111 ...Absence of fluid pressure opens drain
112 ..With diverted system fluid or nonspraying fluid for cleaning
113 ...System fluid diverted
114 ..Solid scraping or clearing member
115 ...Member and nozzle mounted for relative motion
116 ....Member is in flow line
117 .....Member moves through spray opening
118 ......By fluid pressure
119 ..Return or reverse flow from outlet
120 .Waste disposal or drip collecting
121 ..Drip cup or trough
122 ...Combined with deflector
123 .Solid scraping or clearing member
124 WITH SYSTEM FLUID RELIEF OR RETURN TO SUPPLY
125 .Recirculation within nozzle (e.g., burner nozzle cooling)
126 .By pressure responsive means (e.g., to sump or atmosphere)
127 .Return from liquid pump outlet to supply holder (e.g., tank filling, mixing or pump unloading)
127.1 REACTION MOTOR DISCHARGE NOZZLE WITH JACKETED OR HOLLOW PORTION FOR COOLING FLUID FLOW
127.3 .With subsequent mixing in main discharge stream in or downstream of nozzle
128 WITH HEATING OR COOLING MEANS FOR THE SYSTEM OR SYSTEM FLUID
129 .Employing waste heat or exhaust gases
130 .Vehicle mounted heater and spray device
131 ..With plural fluids through outlet means
132 .In terminal element (e.g., injection nozzle cooling)

	WITH HEATING OR COOLING MEANS FOR THE SYSTEM OR SYSTEM FLUID
	.In terminal element (e.g., injection nozzle cooling)
132.1	..Heat exchange fluid
132.3	...Cooling of terminal element
132.5	....Coolant is spray fluid or is added to spray fluid
133	.Spray terminal carrying member carriers heater
134	..With additional upstream heating means
135	.Heating means
136	..Vapor generator
137	...Plural fluids through outlet means
138	....One an aspirating fluid for discharge
139	..Spaced jacket or compartment for heating fluid
140	WITH MEANS MOVABLY MOUNTING SUPPLY MEANS FOR DISCHARGING CONTENTS
141	.Rotating tank type
142	WITH AGITATION OF SUPPLY MEANS
143	.Gas agitation
144	.Movably mounted tank or tank part (e.g., vibratory type)
145	POROUS OR EXTERNAL WICK DISCHARGE MEANS
152	BODY OR ANIMAL CARRIED
153	.Body contour feature
154	.Hand manipulated discharge means
146	WITH MOBILE TANK-TYPE SUPPLY MEANS
147	.Ground traversing wheel-form supply tank
148	.With means replenishing system supply
149	.With means movably mounting supply container relative to its support
150	.With spray deflecting or compressing means (e.g., striping)
151	..By gas stream means
155	.Operational means interconnected with ground traverse
156	..Ground wheel operated discharge means or controller
157	...Ground wheel operated pump
158	....Gas pressure pump
159	.Spray boom or bar type distributor
160	..With motor means imparting movement to distributor during use
161	...Plural bars or booms
162	...Plural spray heads individually mounted for motion
163	..Plural diverse bars or booms
164	..Adjustable distributor
165	...Extensible or telescoping boom
166	...Plural sections articulated or pivotally mounted
167	....Symmetrically disposed outboard of carrier
168	.....With central section
169	...Flexible coupling section to distributor
170	..Having means to selectively control discharge paths
171	.Aircraft carried
172	.Vehicle drawn or carried
173	..Track guided (e.g., rolling stock)
174	...Locomotive cab type attachments
175	..With flexible coupling section
176	.Adjustable distributor
722	MOBILE DISTRIBUTOR
723	.Irrigation device
724	..Open pond or ditch type supply
725	...Floating distribution means
726	..Nozzles spaced along mobile pipeline
727	...Including additive supply means
728	...Center pivot
729	....With noncircular coverage
730	....Including means allowing articulation of adjacent pipe sections
731	.....With means to delect misalignment
732	...Including means allowing articulation of adjacent pipe sections
733	....With means to detect misalignment
734	...Trail tubes
735	...Propelling means
736	....Reel take-up
737	....Prime mover
738	....Fluid motor or spray fluid operated
739	...Guided translating distributor
740	....Supply line traversing means
741	...Wheel mounted for rotation about longitudinal axis of pipeline
742	...Longitudinal movement of pipeline
743	..Propelled or guided translating distributor
744	...Propelling means
745	....Reel take-up
746	....Intermittent grip or inching type
747	....Fluid motor or spray fluid operated
748	...Supply line traversing means
749	....Hydrant coupling
750	.Track or guideway
751	..Overhead type
752	..Reciprocating
753	...With extensible support
754	.Jet directed toward or along supporting surface (e.g., lawn rakes)
193	DISTRIBUTOR HAVING OVERFLOW DISCHARGE (E.G., WEIR TYPE)
194	.Escape to fluid conveying current
195	FLEXIBLE FLOW LINE OR OUTLET STORAGE OR RETRIEVAL MEANS
196	.Flow control responsive to flow line, outlet or storage means movement
197	.With retrieval facilitating means
198	.Reel and ground supported frame
200	WITH FIXED SUPPORT FOR OR GROUND INSTALLED SUPPLY MEANS (E.G., STATIC CONSTRUCTIONAL INSTALLATIONS)
201	.Embedded or buried sprinkler
202	..Street curb installed
203	..With sprinkler head elevating means
204	...Elevating means responsive to flow of spray fluid
205	....With spring assisted retraction
206	....Distributor continuously moves during spraying
207	.Multiple spray heads connected for serial flow
208	.Building features
209	..Overhead or ceiling mounted supply conduit
210	.Moving (non-ground traversing) distributing means
211	SIMULATIONS
214	SLINGER OR SPLASHER; OR DEFLECTOR ROTATED RELATIVE TO EFFLUENT
214.11	.With addition of other fluid downstream of distributor
214.13	..Distributor motion caused by fluid flow
214.15	..Plural fluid outlets from distributor
214.17	..With combining of fluids and subsequent distribution
214.19	..One of relatively axially movable concentric flow paths continuously rotating
214.21	..With pump or interior guide vanes for fluid
214.23	...Adjustable or deformable
214.25	.With combining of diverse fluids at or upstream of distributor
215	.With separate pump or movable conveyer means delivering to distributor

	SLINGER OR SPLASHER; OR DEFLECTOR ROTATED RELATIVE TO EFFLUENT
	.With separate pump or movable conveyer means delivering to distributor
216	..Bowl-like rotating sleeve conveyer
217	...And scoop delivering to distributor
218	..Endless belt conveyer
218.5	..Screw or spiral conveyer
219	.Slinger or splasher dipping into or immersed in supply
220	..Horizontal axis rotary distributor
221	..Submerged impeller type splasher or slosher
222	.Spray apertured casing spaced about distributor
222.11	.Nozzle delivers fluid to deflector
222.13	..Nozzle continuously moves
222.15	...Deflector causes movement
222.17	..Fluid actuated deflector
222.19	...Plural streams to unitary deflector
222.21	...Eccentrically mounted
223	.Disc impeller type or bowl-like slinger or deflector
224	..Disc or impeller type
225.1	DISTRIBUTOR CONTINUOUSLY MOVES RELATIVE TO SUPPORT DURING SPRAYING
226	.With supply holder or plural substance mixing
227	.Compound motion of distributor or terminal member about plural axes
228	.Sediment collector or internal diverter baffle
229	.Wriggler or flexible distributor
230	.With impact motive means
231	.Including deflector
232	..Movable during operating cycle for pattern control
233	..Deflector causes movement of distributor
236	.With undulating or irregular cam track for noncircular pattern control
237	.Spray fluid motor drive means (not reaction)
238	..By weight of accumulated fluid
239	..Continuously operative rectilinearly reciprocating motor
240	..Rotary motor drive (e.g., turbine type)
241	...With step-by-step advance motion
242	...Reciprocating or oscillating distributor
243	.Multiple distributors supported for relative motion or on different axes (one may be stationary)
244	..One distributor drives another
245	..Coaxially arranged distributors
246	.Distributor with diversely shaped or oriented terminal members or outlets
247	..Adjustable or shiftable terminal member
248	..Groups of terminal members or outlets spaced along axis of rotation
249	..Circumferentially alternating diverse terminal members or outlets
251	.Reaction-type nozzle motive means
252	..With brake, lock or retarder
253	..Terminal members adjustable simultaneously or radially swinging
254	..Filter bed type or fluid seal
255	..Oscillating or reciprocating distributor
256	..Control of speed or axis of rotation shiftable (manual valves excluded)
257	...Variable outlet aperture size
258	...Varying jet to change tangential reaction component
259	..With binding preventing means or seal
260	...Distributor vibrating or jarring means
261	..Support details for moving distributor
262	..With flow controller
263	.Fluid motive means
263.1	.Electric motive means
263.2	.Power takeoff from another device
263.3	.Transmission details
264	.Support details for moving distributor
265	..Adjustable standard or support
265.11	REACTION MOTOR DISCHARGE NOZZLE
265.13	.With retractable noise suppressing stream divider
265.15	.With erodible, frangible or fusible nozzle part
265.17	.With addition of secondary fluid upstream of outlet
265.19	.With means controlling amount, shape or direction of discharge stream
265.23	..Fluid jet for stream deflection
265.25	..Plural controlled outlets
265.27	...Selective total discharge through diversely shaped or directed outlets
265.29	....Controller moves into fluid path from position closing one outlet
265.31	....Axially moved discharge portion opens side outlet
265.33	..Radially outermost flow defining wall adjustable
265.35	...Nozzle aiming adjustable
265.37	...Radially inwardly movable wall
265.39	....At least three pivoted flaps form outlet
265.41	.....With adjustable upstream flow path portion
265.43	....Resilient or deformable wall
266	TERMINAL OUTLET MEANS CONNECTED IN SERIES FOR THROUGH FLOW
267	.Terminal outlet means in or on flow line coupling
268	.With casing or support
269	.With flexible or articulated flow line section
270	NOZZLE WITH AIR SUPPLY MEANS TO OPERATOR
271	WITH NOZZLE OR FLOW LINE ATTACHED PENETRATING MEANS
272	.Piercing connection to supply means
274	WITH MEANS OPERATED BY ART DEVICE
284.1	LIQUID SPRAYER FOR TRANSPARENT PANEL (E.G., WINDSHIELD)
284.2	.Headlamp
273	WITH GROUND OR VERTICAL SURFACE SUSTAINED SUPPORT MEANS
275	.Support and deflector unit forms base for supply conduit or terminal outlet member
276	.Ground or object penetrating support
279	.Supply passage configuration forms stand
280	.Pole, stand or extension carried head
280.5	..Adjustable support
281	...Extensible
282	.Wall or bracket mounting
283	..Bracket-type support
285	.Flow controller and ground support interconnection
288	WITH SOLID MEANS AS GUARD OR PROTECTOR
288.3	.Bumper or guard protects distributor
288.5	..Arcuate or circular
289	COMBINED OR CONVERTIBLE
290	INCLUDING SUPPLEMENTAL GAS SHAPING OR SHIELDING JET
291	.Air shield surrounds projected airstream (i.e., air gun)
292	.Angularly adjustable as to point of convergence

INCLUDING SUPPLEMENTAL GAS SHAPING OR SHIELDING JET
293 .Gas-driven rotatable jet orifice carrier
294 .And additional downstream liquid nozzle
295 .On one side only of spray orifice
296 .Plural sets of gas jet orifices
297 ..One or more sets selectively usable
298 ..Jets coupled to turn stream about longitudinal axis
299 .Noncircular supplemental orifice (e.g., special shape)
300 .Adjustable gas flow directing or controlling means
301 ..Rotatable port-carrying member effects flow control
302 INCLUDING SUPPLY HOLDER FOR MATERIAL
303 .Plural holders for diverse materials
304 ..Two or more spray-material holders
305 ...Choice of any one material only
306 ...And mixing beyond outlet
307 ...And carrier fluid supply
308 ..Holder for carrier fluid
309 .And frangible seal rupturing means
310 .To be mixed, dissolved or entrained in a flowing liquid stream prior to discharge
311 ..Gas addition upstream of spray nozzle outlet
312 ..Diverse discharge outlets for mixed and unmixed fluids respectively
313 ..Follower-type holder and stream egress means in juxtaposition
314 ..Mixing beyond liquid stream outlet
315 ..Holder within terminal element carrying member
316 ..Unitary outlet means and holder
317 ..Branching flow and recombining in terminal member
318 ..Aspirating discharge nozzle
319 .Moving solid surface supplying material beyond carrier fluid outlet
320 .Follower in holder
321 ..Floating or biased piston
322 ...Fluid pressure actuated
323 ..Collapsible or flexible follower (i.e., non-rigid)
324 ..Screw actuated
325 .Conveyer for fluent solid in holder
326 .Temporary storage in wick or pad
327 .Resilient holder wall
328 .Collapsible or foldable supply holder
329 .Moving solid surface engages material to be sprayed
330 ..Diaphragm and flexible wall gas pump combined
331 ..Enclosing casing about moving surface
332 ...Motor-operated
333 ...Separable pump with holder mount or securing means
334 ...Articulated or plural point ingress to pump
335 .Three or more spray fluids (e.g., induction of ambient air)
336 ..One a fluent solid
337 .Fluid pressure discharge means
338 ..Material atomized in holder (e.g., nebulizer)
339 ..Liquid inlet port to submerged gas tube
340 ..Pressure reducer at holder outlet
341 ...Relatively adjustable gas and liquid streams
342 ...Auxiliary trap, articulated or plural point inlet to eduction tube
343 ...And diffuser or baffle means (e.g., sudser or foamer)
344 ...Modified flow path in eduction tube
345 ...Discharge from upended or tilted holder (e.g., by gravity feed to reducer)
346 ...Holder coupled to gas supply source
347 ...Flow control by venting pressure fluid to atmosphere
348 ....Fluid pressure in carrier supply line is vented
349 ...Interconnected pump means and conduit closure or valve
350 ...Measured or trapped quantity for discharge
351 ...Motor-operated gas pump
352 ...And supply replenishing means
353 ...Plural valves actuated by common operator
354 ...Including valved eduction tube or closure means
355 ...Holder carried or mounted gas pump
356 ....Flexible wall gas pump encases liquid holder
357 ....Telescoping holder or casing
358 ....Multiple outlet
359 ....Having means to lock plunger or pump
360 ....Pump casing within supply holder
361 ....Unitary mounting for eduction tube and air pump
362 .....Flexible wall gas pump
363 ....Flexible wall gas pump
364 ...Parallel pressure flows to holder and pressure reducer
365 ....Branched flow from main stream to holder
366 .....Air and liquid flow paths combine upstream of spray outlet
367 .....Unitary mounting for pressure fluid inlet and liquid outlet
368 ....Air and liquid flow paths combine upstream of spray outlet
369 ...Air and liquid flow paths combine upstream of spray outlet
370 ....And baffle, diffuser or flow separating means (i.e., nebulizer)
371 ....Concentrically arranged flow paths
372 ..Gas passage from gas space in holder through fluid outlet means
373 ..Means to pressurize contents of holder
374 .Hand-manipulable shaker or jiggler type
375 .Including handle or handgrip for supply container and attached outlet
376 ..Gravity discharge hand carried
377 ...Upending or tilting for discharge
378 ...Handle grip and flow controller juxtaposed
379 .Gravity flow from holder (e.g., hopper type)
380 MOTOR OR SPRAY FLUID OPERATED CONTINUOUSLY MOVING DISCHARGE MODIFIER
381 .Spray fluid operated
382 ..Deflector or whirler
383 ...Rotating whirler
389 ...Pivoted on axis transverse to flow
390 PLURAL INTERCHANGEABLE DISCHARGE MODIFIERS, OUTLET ARRANGEMENTS OR COUPLING MEANS
391 .Selectively arrangeable outlet means
392 ..Movably mounted multi-terminal outlet carrying member
393 ...Member rotates on axis transverse to flow path
394 ...Member rotates on axis longitudinally of flow path
395 ...Member reciprocates transversely of flow path
396 .Discharge modifier upstream of terminal outlet
397 .Selective coupling means for head or nozzle

397.5	DISTRIBUTOR HAVING THERMAL EXPANSION JOINT, DIFFERENTIALLY EXPANDING MATERIALS OR INSULATION
398	COMBINING OF SEPARATELY SUPPLIED FLUIDS (I.E., PLURAL FLOW PATHS)
399	.Including whirler device to induce fluid rotation
400	..Three or more fluids
401	..Axially adjustable valve with fluid conducting stem
402	..Plural serially arranged whirlers for same or for mixed fluids
402.5	..Adjustable or selective whirl inducing means
403	..Whirling of fluid prior to or at point of addition of second fluid
404	...Discrete whirler means for each fluid
405	...Fluid in outer of concentrically arranged paths is whirled
406	....Mixing at or downstream of terminus
407	.And valving means controlling flow for combining
408	..By terminal ejection valve
409	...Liquid storage means proximate to ejection outlet
410	...Fluid pressure operated valve (mixed or unmixed)
411	....By gas pressure
412	..Motor or fluid pressure operated valving means
413	..Valving means for each of diverse fluids
414	...Multiway valve or single operator for plural valves
415	....For successive valve control
416	...Relatively movable concentric flow paths effect valving
416.1	...For three or more diverse fluids
416.2	...Plural valves for same fluid
416.3	....Parallel
416.4	...Concentric flow paths
416.5	..Concentric flow paths
417	...Relatively movable flow paths
417.3	...Valving means for central fluid
417.5	..Discrete flow paths for diverse fluids
418	.At or beyond outlet
419	..With partial preliminary mixing
419.3	...Two of three disparate fluids premixed
419.5	...Induction of ambient air
420	..Including movable means for varying point of convergence
421	..Including peripheral or annular outlets at junction of opposed coaxial fluid paths
422	..Combining of three or more separate fluid streams
423	..Concurrent or concentric flow means
424	...Flow means of one fluid surrounds the other at outlet
424.5	....Plural passages discharge one fluid to other
425	.....To outer fluid at outlet
425.5	.....Ambient air aspirated through inner flow path
426	..Streams meet at right angles
427	.Serially arranged mixing zones (i.e., of same or mixed fluids)
427.3	..Additions of fluid in zones spaced along flow path
427.5	...At least three diverse fluids
428	.Combining of three or more separate streams
428.5	.Liquid flow induces atmospheric air (e.g., faucet aerator)
429	.Plural inlets to one stream from another
430	..Three or more inlets to one stream from other
431	...Normal to entered stream
432	.Including additional dispersing plate or obstruction in mixing chamber
433	.Fluid streams have angular junction
434	..Streams meet at right angles
434.5	..One fluid discharges into other in concentric conical portion of outer conduit
435	VALVED FAUCET HAVING CONTRACTING CHAMBER JET FORMING MEANS
436	SELECTIVELY USABLE OR VARIABLE DIVERSE TERMINAL OUTLETS
437	.Outlet formed between parts mounted for relative movement
438	..Axially movable component
439	...Deflector and outlet forming means combined
440	....Two or more concentric annular outlets
441	....Central and concentric annular outlets
442	.By selection of coupling means
443	.And valve controlling flow
444	..Valving means for each flow path
445	...Valved faucet with selective terminal flow paths to discharge (e.g., high or low velocity draft cocks)
446	...Integral or rigidly interconnected valving means
447	....At least one flow path always open
448	....Central flow path
449	.....And surrounding ports (peripheral)
450	ADJOINED CONTIGUOUS ELONGATED SPRAY CONDUITS (E.G., PARALLEL CONDUITS)
451	TERMINAL OUTLET FORMED BETWEEN PARTS MOUNTED FOR RELATIVE MOVEMENT
452	.Spray fluid pressure responsive discharge modifier
453	..Axially reciprocating closure deflector-type modifier
454	...Gravity seated tapered plug
455	.Laterally movable outlet part
456	.Axially movable outlet part
457	..Moved by rotatable flow conducting terminal member part
458	...Radially outer and axially movable part
459	..Spring biased nonrotatable controller within discharge guide
460	..Peripherally fluted or grooved member
461	FLOW DEFLECTING OR ROTATION CONTROLLING MEANS
462	.And filtering or screening means
463	.Fluid rotation inducing means upstream of outlet
464	..And fluid pressure responsive flow modifying means
465	..And adjustable flow modifier requiring separate insertable tool
466	..Serially arranged whirlers
467	..And serially arranged deflector
468	..Whirl chamber transversely offset to single in-flow path (i.e., tangential inflow
469	...Having a central post-like member
470	....And flow passage in post
471	...Having valved inlet
472	..Peripheral and central flow paths in whirler upstream of single terminal outlet
473	...Coaxial valving means and central port
474	..Annular egress outlet formed between whirler and casing
475	...And centrally ported whirler

FLOW DEFLECTING OR ROTATION CONTROLLING MEANS
.Fluid rotation inducing means upstream of outlet
476 ..Having flow modifier and external operator therefor carried by nozzle
477 ...Selective diverse paths to or through terminus
478 ....One path avoids whirler action
479 .....Adjustable between positional limits
480 ......Relatively axially movable flow modifier
481 ....Rotary, axially movable
482 ...Axially aligned nozzle, modifier and stem
483 ....Slotted, ported or grooved modifying member
484 .....Member having rotary motion for adjustment
485 ......And motion longitudinally of the axis of rotation
486 ..Single planar spiral perpendicular to flow path
487 ..Axially extending spiral-type flow passage or diverter
488 ...Having a solid core
489 ...In or on flow-passage walls
490 ..Integral whirler and terminal head (e.g., terminal nut)
491 ..Apertured cap surmounts whirler organization
492 ...Whirler is cup-like insert with tangential inlets
493 ...Downstream end of core member slotted to form whirl passages
494 ...Whirler is slotted or apertured flat disc or plate
495 ....Deformed plate
496 ....Slot in disc face
497 ....Multiple angular passages through disc
498 .Unitary deflector with multiple fingers or serrated edges
499 .Chamber-like deflector
500 .Serially arranged deflecting surfaces
501 ..Surfaces of spiral or helical form
502 .Plural deflectors arranged edgewise to stream
503 ..Pivoted into and out of discharge path
504 .Deflector apertured for flow
505 .Deflector movably or removably mounted relative to outlet
506 ..Deflector is closure
507 ..Mounted for movement into and out of deflecting position
508 ...Bail-type pivoting means
509 ...Plate means oblique to or on one side of flow path
510 ....Exteriorly arranged of flow member
511 .....Rotated into deflecting position
512 ...Positioned transversely across flow path
513 ..Adjustable to alter degree of deflection
514 ...Axially movable deflector
515 ....Supported exteriorly of flow outlet
516 ..Resilient securing means
517 ..Spring form deflector
518 .Deflector and terminal flow element
519 ..Resilient or deformable
520 ..Plural outlets to deflector
521 ..Deflector on one side of flow path
522 ...Multiple or discrete deflecting surfaces
523 ...Dished or arcuate deflector
524 ..Transverse planar or dished surface type
525 FLOW LINE OR NOZZLE ATTACHED OR CARRIED HANDGRIP OR HANDLE
526 .Pistol grip type
527 ..Single trigger for plural valve actuators
528 ...For sequentially opened valves
529 .Finger- or hand-attached or worn (e.g., spray glove)
530 .Sleeve-type grip
531 .And hook-like holder
532 .Spray pole type
533.1 FLUID PRESSURE RESPONSIVE DISCHARGE MODIFIER* OR FLOW REGULATOR*
533.2 .Fuel injector or burner
533.3 ..Having flow regulator* for reciprocating piston engine
533.4 ...With means to vary or pulse flow within engine cycle
533.5 ....Upstream of flow regulator*
533.6 ...Manually adjustable
533.7 ...Regulator* upstream of outlet port opens in direction of flow
533.8 ...Regulator* biased to closed position by a fluid
533.9 ...Spring type or biased regulator*
533.11 ...With antifriction, guide or seal means for flow regulator*
533.12 ...With discharge modifier*
533.13 .Resilient or deformable terminal outlet
533.14 ..Outlet carried by or formed in a disc
533.15 .On-off only
536 SIMILAR TERMINAL MEMBERS IN MULTIPLE ARRANGEMENTS
537 TERMINAL MEMBER AND VALVE PART MOVE AS UNIT
538 .Rotatable unit
539 ..Having axial movement
540 ..Disc type
541 .Axially movable unit (reciprocating)
542 CONDUIT OR NOZZLE ATTACHED IRRIGATION-TYPE DECELERATOR
543 ONE FLUID STREAM IMPINGES UPON AOTHER (I.E., CONVERGING)
544 .Orifices in recessed face
545 .Directly opposed outlets
546 INCLUDING MEANS MODIFYING DEFORMABLE TERMINAL OUTLET
547 DISTRIBUTOR OR NOZZLE IN CIRCUMFERENTIAL WALL OF FLEXIBLE SUPPLY LINE
548 UNITARY PLURAL OUTLET MEANS
549 .Plural outlets each supplied by different fluid
550 .Plural separable nozzles on spray pipe
551 ..And flow control for each nozzle
552 .Insert at terminus forms plural streams
553 .Having interior filter or guide
553.3 ..Foraminous or apertured member
553.5 ..Plural fluid directing means
554 .Axial or superposed members arranged to form axially spaced outlets
555 ..Stacked plates
556 .Arranged in plural groups or rows
557 ..All groups identical
558 ..Concentric or coaxial groups
559 ...In concavo-convex face
560 ..Three or more dissimilar groups
561 .Three or more dissimilar outlets
562 .And flow regulation or control of outlets
563 ..Sequential control of outlets
564 ...Bi-dimensional control
565 .Branched flow line type
566 .All in a single straight line
567 .All in a concavo-convex face
568 .Slit or slot-like apertures
569 INCLUDING VALVE MEANS IN FLOW LINE
570 .Line flu$ d operated
571 ..Flow direction responsive valve

	INCLUDING VALVE MEANS IN FLOW LINE
	.Line fluid operated
572	..Downstream flow to outlet closes valve
573	.And fluid to gas expansion effecting means (e.g., aerosal type)
574	.Serially arranged valves (e.g., trap or wet flow line)
575	.And filter, sifter or screen
576	.Flexing flow conduit or sheat unseats valve
577	.Unhinged tilting type
578	.Relatively movable remotely arranged operator for controller (e.g., Bowden wire)
579	.Movable terminal flow member controls valve
580	.Requiring separate insertable tool for adjustment
581.1	.Rotary valving
581.2	..Including axial movement
582.1	...Stem or operator extends through flow conduit
583	.Reciprocating
584	..Injection nozzle type
585	...Electro-magnetically operated
586	..Transverse to flow path
587	TERMINAL MEMBER ADJUSTABLY OR SHIFTABLY CONNECTED TO FLOW CONDUIT
588	.Flexible coupling section
589	RIGID FLUID CONFINING DISTRIBUTOR
589.1	.Fluidic oscillator
590	.Having interior filter or guide
590.3	..Foraminous or apertures member
590.5	..Plural fluid directing means
591	.Including flow passage liner (e.g., wear liner)
592	.Flat and tapered
593	..One wall only tapered to direction of flow
594	..And remaining opposite side walls converging
595	..And superposed curved discharge edges
596	.Orifice in separable disc or plate
597	.Elongated orifice in terminal member
598	..Oblique to direction of flow
599	..Oval or elliptical
600	.Assembly or disassembly feature
601	.Orifice shapes
602	MISCELLANEOUS (E.G., RESILIENT NOZZLE)
	******************************
	DIGESTS
	******************************
DIG 1	Pattern sprinkler
DIG 2	Scarfing torches
DIG 3	Fluid amplifier
DIG 4	"O"-ring
DIG 5	Ball agitators
DIG 6	Lawn mower
DIG 7	Coanda
DIG 8	Cutter sprayer
DIG 9	Slide fastener
DIG 10	Carbon dioxide bulb
DIG 11	Magnets
DIG 12	Flexible outlets
DIG 13	Soot blowers and tube cleaners
DIG 14	Paint sprayers
DIG 15	Sprinkler systems with controls
DIG 17	Low volume
DIG 19	Nozzle materials
DIG 21	Air blast
DIG 22	Safety air nozzles
DIG 23	Screens

CLASS 241 SOLID MATERIAL COMMINUTION OR DISINTEGRATION

DECEMBER 1990

PROCESSES
1 .By operations other than force of contact with solid surface
2 .With cell rupturing or liberation of contained liquids
3 .With solidifying, consolidating or shaping
4 .Laminated or fibrous mineral material
5 .By utilizing kinetic energy of projected or suspended material
6 .Cereal and other seeds or seed parts
7 ..With operation to detach or loosen adhering hull portion
8 ..With application of fluid to, or heating or cooling of, whole seed
9 ..With separation or classification
10 ...With recombination or recirculation of separated parts
11 ...Successive alternate separation and comminution steps
12 ..With application of fluid
13 ..Plural successive comminuting operations
14 .Selective or differential comminution of mixed or bonded solids
15 .With application of fluid or lubricant material
16 ..To aid dispersion or prevent chemical reaction, deliquescence, agglomeration or frothing
17 ..With additional heating or cooling
18 ..Gas or vapor
19 ...To classify or separate material
20 ..Liquids added to classify or separate material
21 ..Liquids added to make pulp or suspension
22 .Application of solids to material
23 .With heating or cooling of material
24 .With classification or separation of material
25 .Combined
26 .By contact between relatively moving portions of material
27 .Subjecting material to impact by moving comminuting surface
28 .Wood and similar natural-fibrous vegetable material
29 .Plural successive comminuting operations
30 .Miscellaneous
APPARATUS
31 .With explosion preventing or relieving means
32 .With overload release means
32.5 .With sink drain stopper interlock
33 .With automatic control
34 ..Of feed of material
35 ...By speed or torque of comminutor drive
36 ..Of comminutor drive
37 ..Of comminuting surface contiguity
37.5 .With means to protect operator from injury
38 .Including means applying fluid to material
39 ..Fluid comminutor type
40 ...Stationary abutment impact only
41 ..Plural fluid applying means on same material
42 ...With plural comminuting zones
43 ..With plural comminuting zones
44 ...Parallel material flow type
45 ...Horizontal fluid current past successive comminuting zone
46 R ..Liquid submerged comminuting zone
46 A ....Garbage disposers
46 B ....Vertical axis
46.02 ...With material feed means
46.04 ...Including adjustable component
46.06 ...By cooperating members
46.08 ....Including centrifugally driven striking member (i.e., hammer mill)
46.11 ....Including impeller-type agitating means
46.13 ....Reciprocating or oscillating
46.15 ....Including roller or roller-like member (e.g., ball, cylinder, etc.)
46.17 ...By rotating impeller-type agitating means
47 ..Gas swept comminuting zone
48 ...With recirculation of gas to comminuting zone
49 ...Gas borne material applied to screen
50 ....Elevating fan on comminutor shaft
51 ....Screen forms part of comminuting surface
52 ...With return of removed oversize material to comminuting zone
53 ....Suction applied above and coaxially of comminuting member or members
54 ...Horizontal gas current though rotary drum
55 ...Comminuting element or comminuting element attached, gas moving means
56 ...Gas moving means and rotary comminuting element on same shaft
57 ...Local application within comminuting zone
58 ...Suction applied above and coaxially of comminuting member or members
59 ...With non-automatic gas flow control means
60 ..Applied subsequently to comminuting
61 ...With recirculation of material to comminuting zone
62 ..Applied prior to comminuting
63 .With simultaneous control of interrelated feed, drive and/or surface positioning means
64 ..Control of feed and surface positioning means only
65 .With temperature modification of material
66 ..Temperature modification of comminuting member
67 ...Thermal fluid within or carried by moving comminuting member
68 .With separation or classification of material
69 ..Comminuted material discharge permitting screen
70 ...Screen partition or end wall in rotary drum
71 ....Plural partitions or end walls
72 .....Series flow of material
73 ...Arcuate screen concentric with rotary comminuting member
74 ...Annular screen above or surrounding comminuting zone
75 ..Parallel material flow through plural comminuting zones and/or separators
76 ..Series material flow only through plural alternate comminuting zones and separators
77 ..Comminuting zone interposed between plural separators
78 ..Separator interposed between plural comminuting zones
79 ..Separator in discharge from comminuting zone
79.1 ...By adhesion, electric field force, specific gravity, or chemical change

	APPARATUS
	.With separation or classification of material
	..Separator in discharge from comminuting zone
79.2	...Rotating comminutor combined with a sifting device
79.3	....Sifting device rotates
80	...Oversize return to comminuting zone
81	..Separator in feed to comminuting zone
82	.Projected material trap chamber
82.1	.Helical pusher inside tube moves material toward perforated member
82.2	..With means to vary particle coarseness
82.3	..Wherein the perforated member is other than flat
82.4	..With series of axially aligned rotary knife blades
82.5	..With rotary knife before member
82.6	...Tube having configured interior surface
82.7	..With rotary knife after member
83	.Comminuting surface provided with openings to permit discharge of material
84	..Cooperates with moving comminuting surface or member
84.1	...Loose cylinder or sphere
84.2	...Travelling roll surface or member
84.3	...Oscillating surface or member
84.4	...Rectilinearly reciprocating surface or member cooperates with rotary comminuting member
85	...Rotary comminuting surface having openings cooperates with moving surface
86	...Cooperates with rotary member comminuting
86.1	....Material thrown against perforated surface by centrifugal force
86.2	....Comminutor mounted for movement relative to rotating support member
87	....Screen or screen elements move during comminution
87.1	....Offset fingers on stationary surface and on rotary member
88	....Provided with special comminuting surfaces or characteristics
88.1	.....Perforation bounded by sharp edge
88.2	.....And auxiliary imperforate surface (e.g., breakerplate)
88.3	......Three or more serially acting alternate perforate and imperforate surfaces
88.4	.....Spaced parallel bars (e.g., "grate")
89	....Hinged or dumping type screen or support
89.1	....With means to change or adjust comminuting position of screen or screen element
89.2	....Removable or interchangeable screen or screen portion
89.3	....Stationary concave surface
89.4	....Stationary flat circular surface
91	..Rotating comminuting surface having openings
92	...Radial comminuting face
93	...Outer peripheral comminuting face
94	..Reciprocal comminuting surface having openings
95	..Stationary comminuting surface having openings
96	.Oversize rejection by comminuting surface
97	.With recirculation of material to comminuting zone
98	.With agitator
99	.Bottle breakers
100	.With independent removable or detachable material receiver or receiver engaging means
100.5	.Combined with sink drain
101 R	.Combined or convertible
101 A	...Unbalers with fluffer and blower
101 B	...Mill and mixer
101 C	...Animal powered mill
101 D	...Plural materials
101 M	...Mobile crusher
101.1	..Convertible to non-comminuting apparatus
101.2	..Combined with non-comminuting means
101.3	...With means to indicate condition of apparatus, work or product
101.4	...Prior shaping means (e.g., quartering)
101.5	...With material handling other than to or from comminuting zone
101.6	....And means to mix plural materials
101.7	...Ambulent supporting means
102	.Comminuting surface deformable by contact with material
103	.Rolls frictionally driven and supported by relatively moving surfaces (e.g., ball chasers)
104	..With additional diverse type of comminutor
105	..Plural comminuting zones
106	..Frictional drive surface on horizontal axis
107	.Plural rotary or oscillatory surfaces cooperate with common surface (e.g., chasing mills)
108	..With additional diverse type of comminutor
109	..With material feeding mechanism or control
110	..Plural surfaces move across common surface
111	..Outer peripheral contact of common surface by plural surfaces
112	...With surface cleaner or scraper
113	..Plural surface cooperate with each other
114	..Radial faces of plural rotary surfaces cooperate with common surface
115	..Plural sets of plural surfaces cooperating with plural common surfaces
116	...Coaxial rotors radially arranges on same side or common surface axis
117	..Common surface moves during comminution
118	...With planetary movement of plural surfaces
119	...With material moving or discharge means
120	...Positively driven plural surfaces
121	...Plural surfaces forcible away from common surface
122	....Common surface rotates on horizontal axis
123	..Planetary movement of plural surfaces
124	...With material moving or discharge means
125	...Compounded planetary movement
126	...Positively driven plural surfaces
127	...Forcible away from common surface
128	....Pivotally mounted for forced movement
129	.....Centrifugally urged toward contact
130	......With centrifugal force modifying means
131	....Centrifugally urged toward contact

APPARATUS

.Plural rotary or oscillatory surfaces cooperate with common surface (e.g., chasing mills)
..Planetary movement of plural surfaces
...Forcible away from common surface
132 ....With means in addition to weight of plural surfaces for urging surfaces toward contact
133 ....Rotors independently forcible away from common surface
134 .Parallel material flow through plural comminuting zones
135 ..With unitary or interconnected feed mechanisms or controls for plural zones
136 ...Interconnected means forcing material against moving comminuting surface or surfaces
137 ..All comminuting zones of loose grinding body type
138 ..All comminuting zones of rotary striking member type
139 ..All comminuting zones of cooperating surface type
140 ...All comminuting zones of compound movement type
141 ...All comminuting zones of rotary surface type
142 ....Circumferential or tangential material flow only
143 .....All cooperating surfaces rotate
144 ......Rotary surfaces of separate zones coaxial
145 ......Simultaneous adjusting or positioning of separate surfaces
146 ....Axial or radial material flow only
147 ...All comminuting zones of reciprocating surface type
148 ....Oscillating surface
149 ....Vertical rectilinear movement
150 .....Annularly mounted moving surfaces
151 ..All comminuting zones of single surface zones
152 R .Series material flow only through plural comminuting zones
152 A ...Various types of comminuting zones
153 ..All comminuting zones of loose grinding body type
154 ..All comminuting zones of rotary striking member type
155 ..All comminuting zones of cooperating surface type
156 ...All comminuting zones of compound movement type
157 ...All comminuting zones of rotary surface type
158 ....Circumferential or tangential material flow only
159 .....All cooperating surfaces rotate
160 .....One surface of each couple nonrotary
161 ....Axial or radial material flow only
162 .....Common axis of rotation
163 ......Horizontal axis
164 ...All comminuting zones of reciprocating surface type
165 ....Vertical rectilinear movement
166 .With comminuting member cleaner or scraper
167 ..Contacting working surfaces of rotary comminuting member
168 .Hand support comminutor
169 ..Reciprocating cooperating comminuting surfaces
169.1 ..Rotary tool
169.2 ..Masher or pestle
170 .Loose grinding body comminutor (e.g., ball or rod mills)
171 ..With feed and/or discharge
172 ..With independent means moving or guiding the material and/or grinding bodies in receptacle
173 ...Rotary grinding body pusher (e.g., ball chasers)
174 ....Horizontal axis
175 ..Compound movement receptacle
176 ..Rotating receptacle
177 ...Tiltable axis of rotation
178 ...Roller supported receptacle
179 ..Receptacle structure
180 ...With non-axial opening
181 ...With lifting or distributing at extremity of receptacle
182 ...With lining
183 ....With lifting or distributing characteristics
184 ..Grinding bodies
185 R .Rotary striking member (e.g., hammer mills)
185 A ...Pump and rotary disintegrator
186 R ..With feed and/or discharge mechanism or control
186 A ....Screw feed
186.1 ...With distinct plural paths to striking member
186.2 ...With means to regulate feed or discharge
186.3 ....Including means to alter direction of flow
186.4 ...Rotating or oscillating feeder
187 ..With moving cooperating surface or member
188 R ..Axial and/or radial flow of material
188 A ....Pin disc comminutor
189 R ..Circumferential or tangential flow
189 A ....Reversible rotary mills
190 ...With intermeshing impact members
191 ..Rotor structure
192 ...With striking member adjusting means
193 ...With loosely mounted striking member
194 ...Striking member pivoted to rotor
195 ..Striking members or hammers
196 ...Loose ring type
197 ...With attached wear member
198 R .Cooperating comminuting surfaces (e.g., jaw crushers)
198 A ...Single roll jaw crushers
199 ..Batch type (e.g., mortar and pestle)
199.1 ...With means to move batch container or support
199.2 ....Intermittent movement of support interrelated with movement of cutter or knife
199.3 .....Rectilinearly reciprocating knife
199.4 .....Rocking knife
199.5 ....Uni-directional movement of support
199.6 .....With means to feed or discharge batch
199.7 .....With revolving tool
199.8 .....With rectilinear reciprocating tool
199.9 ...Stationary container or support
199.11 ....With rectilinear reciprocating tool
199.12 ....With rotary tool
200 ..Endless belt type comminuting surface or surfaces
201 ..Compound movement comminuting surface or surfaces
202 ...With feeding and/or discharging mechanism or control
203 ...Rotary component
204 ....Circumferential or tangential flow of material
205 ....Rotating and reciprocating surface
206 ....With moving cooperating surface

	APPARATUS
	.Cooperating comminuting surfaces (e.g., jaw crushers)
	..Compound movement comminuting surface or surfaces
	...Rotary component
207	....Gyratory or planetary movement
208	.....Eccentric drive sleeve within gyratory member
209	.....With upper guide or support for gyratory member
210	......Unbalanced weight drive
211	......Gyratory member yieldinly mounted
212	......Upper gyratory drive
213	......Bottom shaft adjusting means
214	.....Eccentric shaft gyratory drive
215	.....Eccentric gyratory sleeve below gyratory member
216	.....With gyratory member sealing means
217	...Unitary comminuting member and eccentric strap
218	....With moving cooperating surface
219	...Comminuting member pivoted to oscillating supporting link
220	..Rotary surface or surfaces
221	...Circumferential or tangential flow of material (e.g., roll mills or roll and concave mills)
222	....With material feed and/or discharge mechanism or control
223	.....Endless belt conveyer
224	.....Hopper
225	......With roll or rotary material agitator
226	....With material retaining means at axial end of rotary surface
227	....Both cooperating surfaces rotate (e.g., roll mills)
228	.....Internal comminuting surface
229	.....Surfaces rotate in same direction and/or mounted on non-horizontal axis
230	.....Adjustably or yieldably mounted rotary surface
231	......Hydraulic or pneumatic mounting and/or axially yieldable or adjustable
232	......Pivoted roll support
233	.......Adjustable pivot
234	......Both rotating surfaces adjustable or yieldable
235	.....Cooperating non-smooth surface characteristic
236	......Intermeshing
237	....With non-rotary surface moving means
238	....With plural alternatively usable nonrotary surfaces and/or retractable rotor projections and/or adjustably or yieldably mounted rotary surface
239	....Non-rotary surface adjustable or yieldable relative ot rotary surface
240	.....Sectional non-rotary surfface having independently adjustable or yieldable parts
241	.....Radially of rotary surface
242	....Cooperating non-smooth surface characteristics
243	.....Intermeshing
244	...Axial and/or radial flow of material (e.g., disk mill or cone and shell mills)
245	....With feed and/or discharge mechanism or control
246	.....Axially mounted rotary propeller or screw
247	......Horizontal axis
248	.....Hopper supply
249	......Subjacent shaking shoe or receptacle
250	....With moving cooperating surface
251	.....Both cooperating surfaces rotate
252	......Non-coaxial or eccentric
253	......Vertical axis
254	....With rotary surface axis non-coaxial or e centric relative to non-rotary surface axis
257 R	....Vertical axis
257 G	......Garbage disposer
258	.....Rotary shaft supported above rotary comminuting member
259	.....Adjustable rotary member
259.1	....With means vary space between surfaces
259.2	.....By fluid
259.3	.....Surface yieldably held in position
260	....Cooperating non-smooth surface characteristics
260.1	.....Worm or screw comminutor
261	.....Intermeshing
261.1	.....Conoidal surface
261.2	.....Opposed, fat coaxial surfaces (e.g., disk mill)
261.3	......Having plural angularly related land and groove
262	..Reciprocating surface or surfaces
263	...Parallel motion
264	...Oscillating comminuting surface
265	....With feed and/or discharge mechanism or control
266	....With moving cooperating surface
267	....Link and eccenric type actuator
268	....Serial pivoted links type actuator or link with lever type actuator (e.g., toggle type)
269	.....Means actuating pivot of serial links
270	...Vertical rectilinear movement (e.g., stamp mills)
271	....With feeding and/or discharging mechanism or control
272	....With means to rotate moving surface on non-comminuting stroke
273	....Gravity projected surface only
273.1	.Multi-barbed comminuting face (e.g., grater)
273.2	..On radial face
273.3	..Cylindrical
273.4	..Stationary curved face
274	.Stationary comminuting surface or material bed
275	..Centrifugal projection of material
276	..Conveyer material forcing mans (e.g., scroll type or locomotive stroker type)
277	.Rotating comminuting surface
278 R	..Internal or radial comminuting face
278 A	....Internal comminuting face
279	..with means to support material for rotation during comminution
280	..With means to force material toward periphery of comminuting surface
281	...Means engaging sides of column of material
282	...Radially arranged rectilinearly reciprocating follower
282.1	..Elongated edged member
282.2	...Detachably secured to a rotary element
283	.Reciprocating comminuting surface
284	.Mutual attrition or compression comminutors
285 R	.Comminutor mounting means, frames or other normally stationary structure

	APPARATUS
	.Comminutor mounting means, frames or other normally stationary structure
285 A	...Removable or displaceably housing section
285 B	...Rotor type; pivoted housing section
286	..With mans to adjustably or yieldably mount normally stationary comminuting element
287	...Pivotally mounted
288	....Self-adjusting (e.g., universal mounting)
289	....Yielding
290	...Yieldingly mounted
291	.Comminuting elements
292	..with balancing means
292.1	..Edged blades extending radially
293	..Cylindrical or frusto-conical (i.e., peripheral comminuting face)
294	...Sectional or separable surface element
295	....Annular sections
296	..Disklike comminuting surface (i.e., radial comminuting face)
297	...Plural comminuting faces
298	...Prefabricated assembled surface sections or parts
299	..Annular internal comminuting face
300	..Wear face to backing connections
300.1	..Plural stationary edged blades
301	.Miscellaneous
	********************************
	CROSS-REFERENCE ART COLLECTIONS
	********************************
600	FURNACE STOKERS
601	SAND MULLERS
602	SOAP DISPENSERS
	********************************
	DIGESTS
	********************************
DIG 10	Foundry sand treatment
DIG 14	Grinding in inert, controlled atmosphere
DIG 17	Ice crushers
DIG 27	Pill or tablet crushers
DIG 30	Rubber elements in mills
DIG 31	Rubber preparation
DIG 37	Cryogenic cooling
DIG 38	Solid waste disposal

CLASS 242 WINDING AND REELING

1	MISCELLANEOUS
1.1 R	STATOR WINDING
1.1 A	..Continuous shuttle type
1.1 E	..Guide and end turn shapers
2	BALL OR MASS WINDING
3	SPHEROIDS
4 R	RING WINDING
4 A	..Flexible shuttle
4 B	..Rigid circular shuttle
4 BE	...With eccentric coil
4 C	..Core holder
5	.Armatures
6	.Taping and insulating
7.01	COMPOSITE OBJECT MAKING
7.02	.Method
7.03	..Electrical conductor or armature
7.04	.Circumferentially wound armature
7.05 R	.Transverse slot wound armature
7.05 A	...Rotatable armature core type
7.05 B	...Rotatable shuttle type
7.05 C	...Compound movement type
7.06	.Electrical conductor
7.07	..Electromagnet or electrical coil
7.08	...Including taping or insulating
7.09	...Sequential windings
7.11	...Simultaneous windings
7.12	...Windings control responsive to electric property or work
7.13	...Having planar winding turn increment
7.14	...Apparatus includes driven, shiftably related core support and guide members
7.15	....Drive for rotating core and traversing guide
7.16	.....Adjustably preselectable winding step
7.17	..Electrical connector or terminal making machine
7.18	...Including support for winding material supply holder
7.19	.Localized winding
7.21	.Hollow object
7.22	..Pail or pipe
7.23	..Taped
16	SPOOLERS
17	.Multiple
18 R	BOBBIN AND COP WINDING
18 A	..Alternate, successive dual wind
18 B	..Anti-bounce
18 G	..Glass winding
18 CS	..Change speed
18 AA	..Air actuation
18 DD	..Drum drive
18 EW	..End wind
18 PW	..Preliminary wind
18.1	.Ribbon breakers (i.e., means to prevent coil crowding)
19	.Cutting devices
20	.Sew machine shuttles
21	..Cutting devices
22	..Stops
23	..Disk type
24	..Thread pressers and pads
25 R	.Wire
25 A	...Alternate or successive wind
26	.Symmetrical layers
26.1	.Building mechanism (e.g., ring-rail type)
26.2	..Warp wind (i.e., full-traverse mechanism)
26.3	...Means to vary traverse mechanism
26.4	..Weft wind (i.e., short-traverse mechanism)
26.41	...Preliminary or bunch winders
26.42	....By auxiliary cam means
26.43	....By traverse-controlling means
26.44	.....With means to control gain mechanism
26.45	...Means to vary service traverse and/or gain
26.5	.Full traverse mechanism shifted in one direction
27	.Cone wind
27.1	..Preliminary or bunch winders
28	..Detectors and stops
29	...Thread break or exhaust
30	...Load
31	..Quick traverse
32	..Multiple
34	..Pressers and shapers
35	..Spindles and appurtenances
35.5 R	.Multiple
35.5 A	...Removing full and supplying empty bobbins
35.5 T	...Turret type
35.6 R	.Reserve thread uniting
35.6 E	...End finder
36	.Detectors and stops
37 R	..Thread break or exhaust
37 A	....Knotter
38	...Doubling machines
39	..Load
40	...Doubling machines
41	.Ejectors
42	.Doubling machines
43 R	.Quick traverse
43 A	...Counter rotating fingers
43 B	...Air jets
43 M	...Magnetic
43.1	..By means to vary traverse mechanism
43.2	..By drum guide means
45	.Tension devices
46	.Spool and bobbin lifters
46.2	.Driving connections
46.21	..Modified bobbin or cop
46.3	..Cop tube
46.4	..Clutch
46.5	...Centrifugal
46.6	..Resilient head
46.7	..Resilient socket
46.8	...Coil spring
47	CORDAGE
47.01	.Unidirectionally moving coils
47.02	..With seal for coil support means
47.03	..With threading means
47.04	..Interdigitated composite rotating surface
47.05	...Rigid cages
47.06	...Elements pivot on axis parallel to rotating axis
47.07	...Independent radially moving elements
47.08	..Plural drums
47.09	...Single run contacting
47.1	....Planetating
47.11	.....Helically grooved drum
47.12	..With lateral material-traverser
47.13	...Axially moving element
47.5	.Storage on sheaves
48	.Cutting devices
49	.Detectors and stops
50	.Cards, boards and forms
51	.Heddle and seine needles
52	.Tatting shuttles
53	.Hank and skein winding
54 R	REELING AND UNREELING
54 A	..Antenna reel
54.1	.Magnetic wire recorders only
54.4	.Slivers or rovings
55	.Fabrics (i.e., web-like material)
55.01	..Storage on sheaves
55.1	..Fibrous webs
179	..Web carrying machine-convertible information
55.16	...Folded part of web wound into spiral coil

	REELING AND UNREELING
	.Fabrics (i.e., web-like material)
	..Web carrying machine-convertible information
55.17	...Unidirectionally moving coil(s) for winding and unwinding
55.18	....Unwinding from center
55.19 R	.....While winding onto outside
55.19 A	.......Endless tape cartridge
55.21	....Winding into center
180	...Including support for additional webroll or roll holder
181	....And transfer means therefor
182	...Including low inertia bin or vacuum chamber
183	....Loop condition responsive operation control
184	.....By electrical summing or comparison means
185	.....By pneumatic condition sensing
186	...Web condition responsive operation control
187	....By shift of convolution-engaging member
188	....By sensing of differentiated web portion
189	....By web-induced shift of tension or guide member
190	.....To control electrical operation
191	....Responsive to web-pull-induced reel velocity
192	...Convolution-engaging drive for web-roll or reel
193	...Coaxial reel-pair
194	....Including cartridge
195	...Including leader discrimination
196	...Variable ratio reel drive
197	...Including cartridge
198	....Dissembly disabled reel or assembly initiated operation
199	....Which encloses reel-pair
200	.....With simultaneous or alternative reel drive coupling
201	...Plural or alternative reel drive
202	....Simultaneously operative
203	.....Including drive motor for each reel
204	....Including synchronized brake
205	....Cinematic
206	...Reel drive for association with linear drive
207	....Continuously controlled for accommodation to linear web advance
208	....Including operation coordinating means
209	...With linear drive
210	...Component for association with linear drive
55.2	..Delivery-roll holders (e.g., dispensers)
55.3	...Multiple roll
55.42	....Vertical axis of rolls
55.53	...With container
55.54	...Vertical axis of roll
55.55	...With deodorant-containing mandrel
56 R	..Cutting devices
56 A	....Turret type
56 B	....Transverse cut on reel
56.1	...And single wind-up reel for plural webs (e.g., condenser winders)
56.2	...Longitudinal severing
56.3	....Positionally related tool and wound-package surface
56.4	....And severed-fabric separating
56.5	.....By deflecting means
56.6	....And transverse cutter
56.7	....With slitter drive means
56.8	...Perforator or notcher
56.9	..Multiple reel-simultaneous operation
57	..Detectors and/or stops
57.1	...With means to shift web roll axially (i.e., web registry)
58	..Web roll supply (e.g., plural-roll support for reverse-web storage)
58.1	...Web uniting
58.2	....New roll moved
58.3	....Expiring web moved
58.4	....New web end moved
58.5	....Splice preparing means
58.6	...Conveying roll to position
59	..Lapped or butted lengths of sheet-length material
60	..Bandage rolling
61	..Cards, boards and forms
62	..Cloth (i.e., special for textile material)
63	..Automatically contracting reel
64	..Revoluble reel carriers
65	..Friction-drum drive
66	...Multiple drum
67	..Belt reels
67.1 R	..Winding machines
67.1 D	....Drawing boards and tables
67.2	...With feeding rolls
67.3 R	...With supply roll or rolls
67.3 F	.....Fabric stretcher
67.4	...With reversing means
67.5	...With diameter compensation
68	..Supporters and holders
68.1	...Driving stubs for cores
68.2	....Contractile stubs
68.3	...Core and single stub
68.4	...Core and opposed stubs or sockets
68.5	...Cores
68.6	....Means to reinforce end(s)
68.7	...Peripheral roll-supports
71	...For camera spool(s)
71.1	....Within magazine
71.2	.....Double spoon
71.3	....Winding keys
71.4	....Rapid winders
71.5	.....Automatic
71.6	....Rewinding feature
71.7	....Daylight film holders
71.8	...Special for strip material (e.g., spools for flange(s))
71.9	....Adjustable heads (i.e., axially positionable flanges)
72 R	...Contractile or expansible
72 B	.....With inflatable means
72.1	....Axially slidable cam
73	....Lengthwise of spool
73.5	...Intermediate roll support (e.g., for awnings)
74	..Web fasteners (i.e., means to attach web to spool)
74.1	...Releasable clamp
74.2	....Spring-urged
75	..Tension devices
75.1	...Belt or roller driven reel
75.2	...Drag on running web
75.3	...Slack tensioner
75.4	...Supply roll brake
75.41	....Peripheral strap or belt
75.42	.....Tension controlled
75.43	....Tension controlled
75.44	.....Electrical control
75.45	....Diameter controlled
75.46	....Weight controlled
75.47	....Revolutions or speed controlled
75.5	...Speed and/or torque control of reel
75.51	....Electrical control means
75.52	.....Photoelectric
75.53	....Hydraulic control means
76	..Guards and guides
223	.Fishing rod reel

	REELING AND UNREELING
	.Fishing rod reel
224	..Spinning reel (i.e., axial unwinding)
225	...Motor driven
226	....Spring motor
227	...Spool rotatable to wind
228	....With guide shiftable between wind and unwind positions
229	....Spool pivotal between wind and unwind positions
230	...With winding guide on rotor rearward of spool
231	....Guide shiftable on rotor
232	.....Guide shifted to wind position by rotor drive
233	......Guide shifted to unwind position by discrete manual operator
234	...With winding guide on rotor forward of spool
235	....Rotor drive shifts guide to unwind and wind positions
236	....With manual actuator to shift guide to unwind position
237	.....Actuator forward of rotor
238	.....With line snubber shifted by remote actuator
239	......Rotor and snubber shifted axially
240	.......Guide shifted radially
241	...With level-winding mechanism
242	....Eccentric cam reciprocates spool
243	...With brake
244	....Continuously applied
245	.....Between spool shaft and frame
246	.....Between spool and spool shaft
247	....Positive
248	.....Defines home position of reel part
249	..With drive mechanism
250	...Motor driven
251	....Spring motor
252	.....Motor actuated in response to pull on line
253	.....With independent manual drive
254	.....With spring charger
255	...Multiple drive ratios
256	...Ratchet-type drive
257	...With disengageable positive drive components (e.g., a clutch)
258	....With alternative yieldable mechanism
259	....Axially engaged
260	.....Coaxial of spool
261	......Reengageable responsive to drive rotation
262	....Reengageable responsive to drive rotation
263	....Gear pair
264	...With yieldable drive coupling (e.g., friction or fluid clutch)
265	....Variable by crank manipulation
266	.....Variable within distinct range(s)
267	....Between drive shaft and crank
268	....Between drive shaft and gear
269	....Coaxial with line take-up
270	.....Axially applied
271	......By center pin
272	...With feed roller
273	...With level winding
274	....Line shifts along rotatable cam bar
275	....Line traction guide wheel
276	....Manually shifted guide
277	....Drive mechanism oscillates guide
278	....Drive mechanism reciprocates guide
279	.....Reversely threaded screw
280	......Guide shiftable between wind and unwind positions
281	......Guide has line removal opening
282	...Alternative right or left side drive
283	...Hand crank feature
284	....Collapsible or extensible
285	..With brake
286	...Unwinding speed regulator (e.g., anti-backlash brake)
287	....Line tension responsive actuator
288	....Magnetic
289	....Centrifugal
290	...Spool bearing brake
291	...Manual pressure control
292	....Radially applied
293	.....Rolling contact
294	.....Separable attachment
295	...Connected to spool by one-way clutch
296	...Adjustable pressure pawl (e.g., braking clicker)
297	...Positive
298	....One-way
299	....With disabler
300	.....Rotation responsive
301	...Radially engaged
302	...Axially engaged
303	....Coaxial with spool
304	....On adjustable lever
305	..With unwinding indicator (e.g., bell or flashing light)
306	...Clicking indicator (e.g., flexible pawl and toothed member)
307	...Spring biased pawl
308	....Plural spring sections
309	..With line unwinding limiter
310	..Frame or static component
311	...Spinning reel frame
312	...Frame disassembly feature
313	....Hinged frame section
314	....Rotated joint
315	.....Threaded
316	...Reel support (e.g., reel foot)
317	...Stub shaft support (e.g., fly casting reel)
318	....With spool retainer feature
319	...With line or water shield
320	...With lubrication feature
321	...With bearing feature
322	..Spool or spool shaft feature
323	..Reel attachment
77	.Reels
77.1	..Made for spaced turns of material
77.2	..Wire fabricated
77.3	..Sheet material fabricated
77.4	..Bolt connections
78	..Metal working
78.1	...Sheet metal coiling
78.3	....Blockers (i.e., means to attach strip to core)
78.6	....Uncoilers
78.7	.....Cradle type (e.g., peripherally supported coil)
78.8	.....With free-end grasping and/or inserting
79	...Coil conveying
80	...Multiple
81	...Coil strippings
82	...Revoluble-coiler
83	...Receptacle
84	...Retractile arm
84.8	..Tape measure type (i.e., springless)
85	..Carriers
85.1	...Nonrotatable strand-carrier
86	...Hose
86.1	....Double strand
86.2	....Wheel-supported
86.3	.....Traction-driven
86.4	....Trundle (e.g., flange-wheel)
86.5 R	...Vehicle-mounted
86.5 A	.....Water skiing reels
86.51	....Mine locomotive type
86.52	....For web material
86.6	....Traction-driven
86.61	.....With traverse guide

	REELING AND UNREELING
	.Reels
	..Carriers
	...Vehicle-mounted
	....Traction-driven
	.....With traverse guide
86.62	......Manual or line
86.63	.......With brake
86.64	.....With brake
86.7	....With brake
86.8	....With manual or line traverse guide
94	...Trundle reels (e.g., flange-wheel)
95	...Wheel-attached (i.e., secured to vehicle wheel)
96	...Hand or body
99	...Brakes
100	..Clothesline type
100.1	...Double strand
100.2	...Weight-actuated rewind
103	..Nailing or stapling machine type
104	..Line driers
105	..Box strap
106	..Bracket supported
107	..Spring-drum type
107.1	...Double strand
107.11	....Strand supported
107.12	.....With releasable lock against return bias
107.13	....Parallel strand
107.14	.....Vertical axis of drum
107.15	......With brake
107.2	...With strand engaging stop
107.3	...With brake
107.4 R	...With unwinding lock
107.4 A	.....Vehicle motion sensitive inertia mass
107.4 B	.....Reel acceleration sensitive
107.4 C	.....Reel body movement
107.4 D	.....Rewinding responsive
107.4 E	.....Time delay
107.5	...With spring adjustment
107.6	...With lock against return bias
107.7	....With release (e.g., window shade type)
110	..Contractile (i.e., radially adjustable reel)
110.1	...Multi-part, with common actuator
110.2	....Axial link actuator
110.3	...Radially slidable, independently
115	..Knockdown or collapsible
116	..Separable disks or heads
117	WINDING DRUMS AND SAND REELS (I.E., DRUM STRUCTURE, PER SE)
118	BOBBINS AND SPOOLS (I.E., PER SE)
118.1	.Open-work structure
118.11	..Resilient
118.2	.Resilient
118.3	.Cop-tube type (i.e., headless or single-headed tube)
118.31	..Reinforcing feature
118.32	..Tube material feature
118.4	.Double-headed spool
118.41	..Plural spools axially connected
118.5	..Head(s) adjustable along axis
118.6	..Head connections (e.g., bolted)
118.61	...Inserted head joint
118.62	....Screw connection(s)
118.7	..Spool material feature
118.8	...Sheet stock
125	.Thread fasteners and guides
125.1	..Strand end attachers
125.2	...Outer end
125.3	....Permits unwinding
127	SKIEN HOLDERS
128	UNWINDING DEVICES
129	COIL HOLDERS (E.G., HOLDER FOR ROLL OF WIRE)
129.1	TAKE-UPS
129.2	.Lever type
129.3	.Rewind type
129.4	.Counterweight type
129.5	SUPPORTERS FOR STRAND MATERIAL HOLDERS
129.51	.Opposed stub-shafts
129.53	..With guide(s)
129.6	.Shaft supported at both ends
129.62	..With guide(s)
129.7	.With axial-position retainer for holder
129.71	..With retainer-spindle
129.72	..With guide(s)
129.8	.With brake for holder and/or strand
130	.For bobbins (i.e., commercial-type strand packages)
130.1	..With spindle modified for conical bobbin
130.2	..Vertically suspended spindle
130.3	..Pinboards (i.e., bobbin-storage trays)
130.4	..Skewer
131	..Creels
131.1	...Warp type
132	..Receptacle or trough
134	.For spools (i.e., domestic-type strand packages)
136	..Carrier attachments
137	..Receptacles
137.1	...With guide eye
138	...Single spool
139	..Stands
140	..Thread guards and guides
141	.For twine
146	..Receptacle
147 R	TENSION DEVICES
147 A	..Air
147 M	..Magnet
148	.Alarms and indicators
149	.Clamp
150 R	..Disk type
150 M	....Magnetic
151	..Roller
152	...Fluted
152.1	..Ball
153	.Tortuous course
154	..Adjustable
155 R	.Wheel or pulley
155 M	...Magnetic
155 BW	...Bull wheels
156	.Brakes
156.1	..Peripheral, on material itself
156.2	..Automatic, on disc other than spool
157 R	GUIDES
157 C	..Pig tail
157.1	.Oscillatable or reciprocable
158 R	TRAVERSE MECHANISM
158 B	..Belt chain traverse
158 F	..Air
158.1	.Eccentric or crank
158.2	.Screw shaft
158.3	..Reversely threaded
158.4 R	.Reversing mechanism
158.4 A	...Split nut alternately engaging left and right hand screw threads
158.5	.Cam
159	WOUND STRAND PACKAGES
163	.Interconvolutionary strand delivery
164	.Strand end feature
165	..Strand end forms winding
166	.Plural windings
167	..Serially connected
168	.Distorted winding
169	..Spooled
170	.Housing or outer peripheral support
171	..With strand guide
172	.Strand restraining or snarl preventing means
173	..Adhesive
174	.Particular winding
175	..Cone wind

	WOUND STRAND PACKAGES
	.Particular winding
176	..On core
177	...Plain cone core
178	...Plain cylinder
222	CARD, BOARD OR FORM
	********************************
	CROSS-REFERENCE ART COLLECTION
	********************************
900	SPECIAL MATERIALS
	******************************
	DIGESTS
	******************************
DIG 1	Tape program control means
DIG 2	Narrow fabric winding apparatus
DIG 3	Coreless coilers

DECEMBER 1990

1 R	MISCELLANEOUS
1 N	..Noise abatement
1 A	..Lightning arresters and static eliminators
1 TD	..Trailing devices
2	COMPOSITE AIRCRAFT
3	.Trains
3.1	MISSILE STABILIZATION OR TRAJECTORY CONTROL
3.11	.Remote control
3.12	..Trailing wire
3.13	..Beam rider
3.14	..Radio wave
3.15	.Automatic guidance
3.16	..Optical (includes infrared)
3.17	...Optical correlation
3.18	...Celestial navigation
3.19	..Radio wave
3.2	..Inertial
3.21	..Attitude control mechanisms
3.22	...Fluid reaction type
3.23	.Stabilized by rotation
3.24	.Externally mounted stabilizing appendage (e.g., fin)
3.25	..Removable
3.26	..Sliding
3.27	..Collapsible
3.28	...Longitudinally rotating
3.29	...Radially rotating
3.3	..Extending beyond rear of missile
158 R	SPACECRAFT
158 A	..Exterior surface air resistance heat control
159	.Space station
160	.Reentry vehicle
161	..Rendezvous and docking
162	..Manned
163	...Environmental control
164	.Attitude control
165	..By gyroscope or flywheel
166	..By magnetic effect
167	..By gravity gradient
168	..By solar pressure
169	..By jet motor
170	..By nutation damper
171	..With attitude sensor means
172	.With propulsion
173	.With solar panel
4 R	AIRCRAFT, HEAVIER-THAN-AIR
4 A	..Body attached
5	.Airplanes, weight diminished by bouyant gas
6	.Airplane and helicopter sustained
7 R	..Convertible
7 A	....Rotary wing
7 B	....Tail sitters
7 C	....Tilting wing
8	.Airplane and auto-rotating wing sustained
9	.Airplane and paddle wheel sustained
10	.Airplane and cylindrical rotor sustained
11	.Airplane and beating wing sustained
12.1	.Airplane and fluid sustained
12.2	..Circular
12.3	..Dual propulsion
12.4	..Thrust tilting
12.5	..With thrust diverting
12.6	..Channel wing
13	.Airplane sustained
14	..Aerial torpedoes
15	..Fluid propelled
16	..Glider
17.11	.Helicopter or auto-rotating wing sustained, i.e., gyroplanes
17.13	..Automatic or condition responsive control
17.15	..With safety lowering device

17.17	..With landing, mooring, or nonaerial propelling or steering gear
17.19	..With auxiliary propulsion, counter-troque or steering device
17.21	...Auxiliary rotor
17.23	..Having plural lifting rotors
17.25	..Lifting rotor having lift direction varying means
17.27	..Lifting rotor supports, e.g., pylons
19	.Paddle wheel sustained
20	..Feathering
21	.Cylindrical rotor sustained
22	.Beating wing sustained
23 R	.Fluid sustained
23 A	...Lifting thrusters
23 B	...Dual propulsion means, horizontal and vertical
23 C	...Circular configuration
23 D	...Thrust diverters
24	AIRCRAFT, LIGHTER-THAN-AIR
25	.Airships with sustaining wings
26	.Airship and helicopter sustained
27	.Airship and paddle wheel sustained
28	.Airship and beating wing sustained
29	.Airship and fluid sustained
30	.Airships
31	.Balloons
32	..With parachutes
33	..Captive
34 R	AIRCRAFT SUSTENTATION
34 A	..Annular airfoils
35 R	.Sustaining airfoils
35 A	...Compressible flow
36	..Lifting fuselages
37	..Lifting struts
38	..Resiliently mounted
39	..Rotatable
198	..With lift modification
199	...By vortex generator or dissipator
200	...By characteristic of airfoil's skin
201	...Variable
202	....With landing gear
203	....Condition responsive
204	....By controlling boundary layer
205	.....With ionic or electrostatic surface
206	.....With rotating member
207	.....With blowing
208	......And suction
209	.....With suction
210	.....With nose slot
211	......Having trailing edge flap
212	.....Having trailing edge flap
213	....By flap and/or spoiler
214	.....At leading edge
215	.....At trailing edge
216	......Variable gap type, e.g., "Fowler Flap"
217	......Plural, relatively pivotable
218	....Area
219	....Camber
45 R	..Arrangement
45 A	....Canard
46	...Variable
47	....Dihedral
48	....Incidence
49	....Folding
50	AIRCRAFT PROPULSION AND STEERING ON LAND OR WATER
51	AIRCRAFT, STEERING PROPULSION
52	.Fluid
53 R	AIRCRAFT POWER PLANTS
53 A	..Starters
53 B	..Air intakes
54	.Mounting
55	.Arrangement
56	..Tilting
57	.Radiator arrangement
58	.Auxiliary

	AIRCRAFT POWER PLANTS
59	.High altitude
60	.Transmission of power
61	.Power plant using airship gas as fuel
62	AIRCRAFT PROPULSION
63	.Launching
64	.Manual
65	.Screw
66	..Tilting
67	..Body encircling
68	..Elongated
69	..Contra-propeller arrangements
70	.Paddle wheel
71	.Reciprocating propeller
72	.Beating wing
73 R	.Fluid
73 B	...Vacuum induced by radial flow
73 C	...Radial outward and downward flow
74	..Explosive jet
75 R	AIRCRAFT CONTROL
75 A	..Flutter prevention
76 R	.Automatic
76 A	...Motor torque control of flaps or tabs
76 B	...Velocity operated devices
76 C	...Gust compensators
76 J	...Steerable jets
175	..Electric course control
176	...Spaceship control
177	...Multiple-axis altitude stabilization
178	....Trim control
179	....By change in bank
180	...By change in altitude
181	....By change in pitch, angle of attack or flight path
182	....By change in speed
183	...Of aircraft on its landing course
184	....By steering or yaw
185	.....And vertical glide path control
186	....Vertical glide path control
187	.....With "flare-out" detection
188	.....Slope control by throttle
189	...By remote radio signal
190	....Of pilotless aircraft
191	...Acceleration control
192	...With "dead-zone" control
193	...With "softener" circuit
194	...Monitoring circuit or response
195	....Self-adaptive control
196	...Override of automatic control by human pilot
197	....By engaging manual control system
78	..Fluid
79	..Gyroscope actuated
80	..Gravity actuated
81	..Operated by landing
82	..Vane operated
220	.Pilot operated
221	..Control system
222	...Other than hand or foot actuated
223	...With feel
224	...With locking means
225	...With dual purpose surface structure (e.g., elevons)
226	...Fluid
227	....With electric control
228	...Electric
229	...Dual
230	...With variable output
231	...With interengaging gearing
232	...With cable and linkage
233	...Cable
234	..Controller
235	...Rudder bar and pedal
236	...Electrical pickup
237	...Three-way steering, single control
87	.Rudders and empennage
88	..Rudders universally mounted
89	..Elevators both front and rear
90 R	..Ailerons and other roll control devices
90 A	....Roll control spoilers
90 B	....Balanced air pressure
91	.Vertical fins
92	.Stabilizing propellers
93	.Stabilizing weights
94	..Ballast storage and release
95	..Ballast making
96	.Airship control
97	..Buoyancy varying
98	..Gas bag inflation
99	..Gas release
100 R	LANDING GEAR
100 C	..Endless track
100 A	..Inflatable
101	.Amphibian
102 R	.Retractable
102 A	...Interconnected elements
102 SL	...Strut locks
102 SS	...Strut shortening
103 R	.Wheel
103 S	...Prerotation
103 W	...Crosswind gear
104 R	..Resiliently mounted
104 CS	....Coil spring
104 FP	....Fluid pressure
104 LS	....Leaf spring
105	.Water landing
106	..Flying boat
107	..Emergency
108	.Skids
109	.Tail supports
110 R	RETARDING AND RESTRAINING DEVICES
110 A	..Brake
110 B	..Thrust reversers
110 C	..Cable or net support
110 D	..Aerodynamic braking
110 E	..Landing platforms
110 F	..Snares
110 G	..Arresting hoods
110 H	..Friction brakes
111	.Wheel brake arrangement
112	.Water brake arrangement
113	.Aerodynamic retarders
114 R	LANDING FIELD ARRANGEMENT
114 B	..Blast deflectors
115	.Mooring devices
116	..Movable
117 R	AIRCRAFT STRUCTURE
117 A	..Skin cooling
118.1	.Load (e.g., cargo) accommodation
118.2	..Removable, load bearing, airframe section
118.5	.Passenger or crew accommodation
118.6	..Seating arrangement: berth or berthage
119	.Fuselage and body construction
120	..Sectional
121	..Shields and other protective devices
122 R	..Seats and safety belts
122 A	....Ejection seats
122 AB	.....Catapult and rocket combined
122 AC	......Catapult
122 AD	......Rocket
122 AE	.....Automatic sequence
122 AF	......Canopy release
122 AG	......Restraint positioning and protective devices
122 AH	......Seat separation
122 B	....Safety belts
123	.Airfoil construction
124	..Sectional
125	.Airship hull construction
126	.Airship skin construction
127	.Airship load attachment
128	.Airship gas cell construction and arrangement
129.1	.Details

	AIRCRAFT STRUCTURE
	.Details
129.2	..Fire prevention devices
129.3	..Windows
129.4	..Closures
129.5	...Door
118.3	....Displaceable to function as ramp
129.6	..Steps
130	..Aerodynamic resistance reducing
131	..Joints and connections
132	..Skin fastening devices
133	..Materials of construction
134 R	.Ice prevention
134 A	...Flexible surfaces
134 B	...Heating fluid in airfoil
134 C	...Deicing fluid on airfoil exterior
134 D	...Electric
134 E	...Nature of surface
134 F	...Initiators and indicators
135 R	.Fuel supply
135 A	...Aircraft refueling
135 B	...Flexible containers
135 C	...Fuel balancing systems
136	.Material discharging and diffusing
137.1	.Passenger or cargo loading or discharging
137.2	..Passenger
137.3	..Aerial cargo unloading by parachute extraction
137.4	..Releasable, externally mounted cargo
138 R	SAFETY LOWERING DEVICES
138 A	..Rotating vanes
139	.Entire aircraft
140	.Passenger compartment
141	..Seat
142	.Parachutes
143	..Garment attached
144	..Aircraft element convertible to parachute
145	..Canopy construction
146	..Inflated bracing
147	..Storage and release
148	...Packs
149	...Opening devices
150	...Timing mechanism
151 R	..Harness
151 A	....Parchute harness connection
151 B	....Parachute load releasing
152	..Control devices
153 R	KITES
153 A	..Rotating
154	.Airplane type
155 R	.Accessories
155 A	...Kite controls
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	LIGHTWEIGHT, WINGED, AIR VEHICLE (E,G,. ULTRALIGHT or HANG GLIDER)
901	.Having delta shaped wing
902	.Having parachute type wing
903	.Powered
904	.Miscellaneous hardware or control
905	INFLATABLE EVACUATION SLIDE

CLASS 245 WIRE FABRICS AND STRUCTURE

1	MISCELLANEOUS
1.5	TIRE-BEAD GROMMETS
2	FABRICS
3	.Ties and clips
4	.Chain
5	.Interlocking loops
6	.Coil
7	.Hexagonal mesh
8	.Quadrangular mesh
9	.Link
10	.Edges and seams
11	.Slat and wire

CLASS 246 RAILWAY SWITCHES AND SIGNALS

1 R MISCELLANEOUS
1 A ..Asymmetric units
1 C ..Signals and indicators
2 R TRAIN DISPATCHING
2 E ..Orientation
2 F ..Frequency
2 S ..Spacing
3 .Central signal control
4 ..Cab signal or train control
5 ..Selective
6 .Train-order cab signal or train control
7 .Train telegraphy or telephony
8 ..Inductive
9 ..Continuous contacts
10 ...Traction rail return
11 ....Multiple contact
12 ...Instruments in series
13 ..Emergency signal stations
14 .Station, block, or train-order signals
15 ..Safety systems
16 ...Holders
17 ..Rotary, vertical axis
18 ..Double semaphore
19 STAFF AND TABLET SYSTEMS
20 BLOCK-SIGNAL SYSTEMS
21 .Semi-automatic
22 ..Electromanual
23 ...Cab signal or train control
24 ...Circuit controllers
25 ...Lock and block
26 ....Track-circuit control
27 .Automatic
28 R ..Electric
28 C ....Ballast leakage
28 D ....Plural signals
28 E ....Economy use of line wire
28 F ....Checking circuits
28 G ....Light-out
28 H ....Intermittent light
28 K ....Transformer
29 R ...Radiant energy
29 A .....Electronic gaseous ionization devices
30 ....Hertzian wave
31 ...Propulsion-current control
32 ....Current consumption
33 R ...Single track
33 A .....Speed responsive
34 R ...Varying-current track circuit
34 A .....Approach control
34 B .....Coded circuits
34 C .....Insulation breakdown
34 D .....Saturable reactors
34 CT .....Continuous track
35 ....Propulsion-current return
36 .....Double rail
37 ......Impedance bond
38 ....Wireless distant control
39 ....Line-wire distant control
40 ....Single block
41 ...Direct current, normally closed, track circuit
42 ....Propulsion-current return
43 .....Varying
44 ....Wireless distant control
45 .....Current reversal
46 ....Line-wire distant control
47 .....Cab signal or train control
48 ......Bridged insulated rail joint
49 ......Intermittent contact
50 .....Current characteristic
51 .....Overlapped blocks
52 .....Home and distant
53 .....Three position
54 ....Single block
55 .....Cab signal or train control
56 ......Intermittent contact
57 ......Bridged insulated rail joint
58 ...Direct-current, normally open, track circuit
59 ....Cab signal or train control
60 ....Distant-signal control
61 ...Superimposed propulsion current
62 ...Cab signal or train control
63 R ....Inductive
63 C ......Continuous
63 A ......Intermittent
64 ....Train-carried current supply
65 .....Multiple continuous contacts
66 ......Sectional
67 .....Single continuous contact
68 ......Sectional
69 .....Intermittent contact
70 ......Rail circuit
71 ......Rail return
72 ....Propulsion-current signaling
73 ....Continuous contact
74 ....Intermittent contact
75 ....Bridged insulated rail joint
76 ....Track trip
77 ...Counting in and out
78 ....Ratchet wheel
79 .....Double opposed pawls
80 ......Parallel teeth
81 ...Propulsion-current signaling
82 ....Rotary controller
83 ....Car-actuated controller
84 .....Trolley or plow
85 ....Intermittent contact
86 ....Train-carried current supply
87 ...Line-current supply
88 ....Intermediate signal
89 ....Short sectional rail closure
90 ....Car-actuated controller
91 .....Relay
92 ....Intermittent contact
93 ..Combined fluid pessure and electric
94 ...Cab signal or train control
95 ...Track-circuit control
96 ..Electromechanical
97 ...Cab signal or train control
98 ...Track-circuit control
99 ...Clockwork
100 ..Fluid pressure
101 ...Cab signal or train control
102 ..Mechanical
103 ...Cab signal or train control
104 .Manual
105 ..Electric
106 ...Lock and block
107 .Recorders
108 TIME INDICATION, AUTOMATIC
109 .Flow retarded
110 .Time limit expired
111 GRADE-CROSSING TRACK PROTECTION
112 .Semi-automatic
113 .Automatic
114 R ..Electric
114 A ....Cross-over protection
115 ...Cab signal or train control
116 ..Fluid pressure
117 .Cab signal or train control
118 DRAWBRIDGE PROTECTION
119 .Cab signal or train control
120 ROADWAY-DEFECT PROTECTION
121 .Electric
122 R TRAIN-POSITION INDICATION
122 A ..Miniature model
123 .Automatic time recording
124 .Train annunciators or indicators
125 ELECTRIC AUTOMATIC HIGHWAY SIGNALS, MINE DOORS, AND GATES
126 .Car-actuated controller
127 ..Gates and doors
128 .Normally open track circuit
129 ..Short sectional rail closure

	ELECTRIC AUTOMATIC HIGHWAY SIGNALS, MINE DOORS, AND GATES
130	.Normally closed track circuit
131	INTERLOCKING
132	.Electric actuation
133	..Electric locking
134	...Route locking
135	...Return-release indication
136	..Mechanical locking
137	...Return-release indication
138	....Locked slide
139	.Fluid-pressure actuation
140	..Electrically controlled valve
141	...Return-release indication
142	..Return-release indication
143	.Manual actuation
	..Switch stands
144	...Signal-actuating
145	....Double lever
146	..Electrical locking
147	..Mechanical locking
148	...Preliminary
149	....Tappets
150	...Tappets
151	...Detector bars
152	...Compensators
153	....Counterweight
154	.....Intermittent grip
155	...Rod-saving devices
156	....Selectors
157	.....Electric
158	....Switch and lock movements
159	.Detached locking, check locking, or key control
160	.Approach locking
161	.Retarded-release mechanism
162	.Switch or signal indicators
163	.Derails
164	SLOTTING AND CONTROL
165	.Electric
166	PILOT OR SIGNAL CARS
166.1	SIGNALLING BETWEEN OCCUPANTS OF A TRAIN
167 R	CAB SIGNAL OR TRAIN CONTROL
167 A	..Train approach warning for work cars
167 H	..Magnetic rail
167 D	..Vehicle-vehicle distance measuring
168	.Train parting
168.1	.Wheel slip
169 R	.Train defect
169 A	...Hot bearing detectors
169 D	...Radiant energy type
169 S	...Sound detectors
170	.Derailment
171	..Contact trips
172	...Frangible
173	..Inertia trips
174	.Highway or station, automatic
175	..Code signal
176	.Switch signals
177	.Block entrance initiated
178	..Electric or magnetic control
179	...Bridged insulated rail joint
180	...Cab-circuit controller
181	...Mechanical actuation
182 R	.Speed-control systems
182 A	...Track brake speed control
182 B	...Automatic vehicle-carried braking
182 BH	...Humped, unpowered cars
182 C	...Automatic vehicle-carried speed comparison circuits
182 AA	...Yard-switching, dispersed
182 AB	...Yard-switching, centralized
183	.Manual-control systems
184	.Service stop
185	.Recording devices
186	.Motive-power control
187 R	..Electric
187 A	....Remote control
187 B	....Non-mechanical control of vehicles from wayside
187 C	....Control of vehicle from leading vehicle
188	..Fluid-pressure-actuated throttle
189	.Engineer's brake-valve actuation
190	.Train-pipe-valve structure
191	.Visual cab signals
192 R	.Train mechanism
192 A	...Train-carried electric contact mechanism
193	..Electric or magnetic
194	...Inductive
195	...Intermittent contact
196	...Cab-circuit controller
197	....Magnetically actuated
198	..Single-direction actuation
199	..Frangible
200 R	..Lever actuated
200 A	....Lever perpendicular inclined less than 45 degree
200 B	....Lever transverse relative to direction of travel
201	.Track trips
202	..Electric or magnetic
203 R	..Pivoted
203 A	....Single vertical pivot on which track trip turns
203 B	....Single vertical pivot; strike rod transverse of track
203 C	....Single horizontal pivot on which track trip turns
203 D	....Single horizontal pivot; strike rod transverse of track
203 E	....Horizontal pivot, vertical rod, strike rod perpendicular
204	..Vertical motion
205	..Lateral motion
206	..Fixed
207	..Portable
208	CAR-DISPLAYED CROSSING SIGNALS
209	PASSENGERS' STATION SIGNALS
210	TORPEDO MECHANISM
211	.Electric
212	.Magazine
213	..Vertical
214	..Rotary
215	.Car attached
216	.Hand placing devices
217	AUDIBLE SWITCH AND SIGNAL INDICATORS
218	ELECTRIC ACTUATION
219	.Control circuits
220	.Switch signals
221	.Motor systems
222	..Return-indication-current generation
223	..Three-position signals
224	..Home and distant signals
225	..Reciprocating armature
226	...Controller-actuated switches
227	....Opposed magnets
228	.....Circuit changers
229	.....Tandem contacts
230	....Alternate throw
231	...Opposed magnets
232	....Circuit changers
233	....Tandem contacts, switches
234	....Parallel contacts, switches
235	.....Circuit controller
236	...Alternate throw
237	...Fly-back
238	....Latch or clutch release
239	....Switches
240	..Rotary armature
241	...Opposed motors
242 R	...Circuit changers
242 A	.....Overload release
242 B	.....Dual selector circuit
242 C	......Remote lever, local selector

ELECTRIC ACTUATION
.Motor systems
..Rotary armature
243 ...Fly-back
244 ....Latch or clutch release
245 .Car-actuated generators
246 .Car-actuated circuit controllers
247 ..Wheel or train counting
248 ..Retarded action
249 ..Electric or magnetic
250 ..Single-direction actuation
251 ..Vertically sprung rail
252 ..Trolley or plow actuated
253 .Switch or signal actuated controllers
254 .Trolley-completed circuits
255 .Car-wheel-completed circuits
256 .Relays
257 FLUID-MOTOR ACTUATION
258 .Electric control
259 ..Car-controlled switches
260 .Signals
261 .Gates
262 MECHANICAL-MOTOR ACTUATION
263 .Electric control
264 POINT THROWERS
265 .Magnetic
266 .Modifier switch
267 ..Directing-grooves
268 .Wedging wheel
269 .Sliding shoe
270 R VEHICLE-ENERGY ACTUATION
270 A ..Automatic switch actuation from or by vehicle
271 .Fluid transmission
272 ..Gates
273 .Continuous-rail crossings
274 .Switch-connected frogs
275 .Continuous-rail frogs
276 ..Spring rail
277 .Automatic turnouts
.Switch stands, automatic
278 ..Facing setting
279 ...Manual control
280 ...Resetting
281 ....Vehicle restrained
282 ...Trailing setting
283 ....Yielding rail
284 ..Trailing setting
285 ...Yielding rail
286 ....Spring-clutch
287 .....Coaxial spring
288 ....Counterweight
289 ....Frangible
290 ..Trailing fly-back
291 ...Spring actuated
292 .Signals and gates, automatic
293 ..Highway crossing
294 ...Visual and audible
295 ...Audible
296 ....Bells, single stroke
297 ..Track mechanism
298 ...Single direction
299 ...Latch or clutch release
300 ....Electric
301 ....Longitudinal motion
302 ....Vertical motion
303 ...Longitudinal spiral cam
304 ...Vehicle-restrained gates and doors
305 ....Parallel swing
306 ....Longitudinal motion
307 ....Vertical motion
308 .....Swinging
309 ......Yielding rail
310 ...Parallel swing
311 ...Longitudinal motion
312 ....Rectilinear
313 ...Vertical motion
314 .Switches, automatic
315 ..Resetting, vehicle restrained
316 ..Wheel resetting
317 ..Facing setting
318 ..Trailing setting
319 ..Trailing fly-back
320 R ...Spiral spring
320 A .....Dash pot
321 ....Tie or connecting rod
322 ..Track mechanism
323 ...Selective
324 ...Latch or clutch release
325 ....Electric control
326 ...Electric control
327 ...Alternate throw
328 ....Tappet wheel
329 ...Three and multiple throw
330 ...Traffic protected
331 ...Rotary longitudinal connecting shaft
332 ...Cable and pulley connection
333 ...Longitudinal sprial cam
334 ...Rack and pinion
335 ...Bow spring
336 ...Longitudinal motion
337 ....Train-trip elevation
338 ....Track-mechanism depression
339 ....Perpendicular swing
340 .....Double
341 ....Horizontal swing
342 .....Double acting
343 .....Double
344 ...Transverse motion
345 ....Duplex lever
346 ....Swinging
347 .....Double acting
348 ......Guiding tail
349 .....Double
350 ....Double acting
351 ....Vertical motion
352 .....Duplex lever
353 .....Swinging
354 ......Double acting
355 ......Double
356 .....Double
357 ......Transverse lever connection
358 .Switch locks, automatic
359 .Train trips
360 ..Electric or magnetic
361 ..Fluid pressure
362 ..Resilient
363 ..Hooks
364 ..Racks or friction bars
365 ..Pivoted
366 ...Wheel
367 ...Rod
368 ..Vertical motion
369 ...Wheel
370 ...Rod
371 ..Lateral motion
372 ...Wheel
373 ...Rod
374 SAFETY SIDINGS
375 CONTINUOUS-RAIL CROSSING
376 .Overlapped main
377 .Pivoted rail
378 .Rotary block
379 .Movable point
380 .Sliding rail
381 ..Longitudinal
382 SWITCH-CONNECTED FROGS
383 .Overlapped main
384 ..Double rail
385 .Swinging tongue
386 ..Stub end
387 .End-pivoted rail
388 .Center-pivoted rail
389 .Swinging rail
390 ..Opposed swing
391 ..Wing

	SWITCH-CONNECTED FROGS
392	.Transversely sliding rail
393	SWITCH STANDS
394	.Cab signal or train control
395	.Resetting
396	..Latch release, automatic
397	..Hand restrained
398	..Vehicle restrained
399	..Detention devices
400	..Key retaining
401	.Rail lock and position indication
402	..Transverse rotary locking shaft
403	.Three and multiple throw
404	.Adjustable throw
405	.Spiral-cam actuated
406	.Gear actuated
407	.Structural types
408	..Depressed mechanism
409	..High semaphore stands
410	..Vertical lever
411	...Ground stands
412	..Horizontal lever
413	...Drop arm
414	....Automatic key-lock
415 R	SWITCHES
415 A	..Toy
416	.Slip
417	.Frog obviating
418	..Single ral
419	.Conduit, third rail or trolley
420	.Nonderailing, trailing
421	..Risers
422	..Moving guard rail
423	.Facing, rerailing
424	.Facing, selective
425	..Side draft
426	..Modified wheel
427	.Stationary turnout
428	.Snow protected
429	.Overlap
430	.Sliding
431	.Oscillating, longitudinal axis
432	.Risers
433	.Vertical motion
434	.Flexible rail
435 R	.Point
435 A	...Guard
436	..Recessed rail
437	..Renewable and reenforced
438	..Point and mate
439	..Tandem
440	..Three throw
441	..Tread guard rail
442	..Tongue
443	...Bed lock
444	...Self-cleaning
445	.Stub
446	..Double rail
447	..Anti-creep or jar
448	.Lock
449	.Tie bars
450	..Adjustable
451	...Eccentric
452	.Connecting rods
453	.Chairs and plates
454	CROSSINGS, FROGS, AND MATES
455	.Outer-tread-supported wheel
456	.Tread guard rail
457	.Flange-supported wheel
458	..Frogs
459	.Hot filled
460	.Central inserts
461	..Cast bound
462	.Plate or plate bolted
463	.Bolted
464	.Solid
465	.Crossings
466	..Street and steam
467	..Chairs
468	.Frogs
469	..Unbroken main
470	..Clamped
471	..Composite
472	.Details
473 R	SIGNALS
473 A	..Toy rail signals
473.1	.Highway crossing
473.2	..Wigwag type
473.3	.Light beam projecting
474	.Track reflectors
475	.Dwarf or pot
476	.Switch or switch stand
477	.Roadway, visual, and portable
478	.Enclosed
479	.Semaphore
480	..Upper quadrant
481	..Home and distant
482	..Arms
483	...Illuminated
484	..Lamp and spectacles
485	..Post mechanism
486	.Bridge warnings
487	.Torpedoes
488	.Trainmens' kits
489	MANUAL ACTUATION
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	DIGESTS
	******************************
DIG 1	Radiant energy devices
DIG 2	Thermal sensing devices

542	WITH INDICATOR OR INSPECTION MEANS
543	.Pre-set characteristic
544	WITH MEANS TO FACILITATE INSTALLATION, REPAIR, OR TRANSPORTATION, OR BROKEN PARTS RETAINER
545	.For ground insertion
546	.For support cutting or piercing
547	..Nail guide or holder
682	ARTICLE CARRIED
683	.Mounted by vacuum, adhesive or magnet
684	.Including cutting or piercing of the article
685	.Retractable within article
686	.Embedded within article
687	.Anti-mar or nonslip e.g., cushioned
688	.Stand, foot or prop
689	.Mounted by clamping means
690	.Mounted by hook or loop
691	..Hook pivoted to article
692	..Open hook
693	.Including flexible suspension means
548	WITH COMPONENT FRANGIBLE OR DEFORMABLE ON IMPACT OR OVERLOAD
549	.Support for mirror- or picture-type article
550	WITH CONDITION RESPONSIVE CONTROL MEANS
551	WITH ANTI-THEFT OR ANTI-TAMPER MEANS
552	.Padlock
553	.Key operated
554	AIRCRAFT ENGINE SUPPORT
555	.Three or more circumferentially spaced supports
556	..Resilient
557	.Resilient
558	SELECTIVE ASSEMBLY
559	INCLUDING ADDITIONAL VIBRATING MASS
560	RESILIENT SUPPORT
561	.Including disabling means for resilient element
562	.Including additional energy absorbing means, e.g., fluid or friction damping, etc.
563	..Normally disengaged or including disabling means
564	..Acting through linkage
565	..Coaxial with spring
566	..Variable or adjustable energy absorbing means
567	..Including double pivot
568	..Solid friction members
569	...Linear motion
570	...Forming unitary structure with relative movement between parts
571	.Constant thrust
572	..Variable effective diameter pulley, e.g., fusee, etc.
573	.Including limit stop or overload release
574	..Adjustable
575	.Adjustable preloading of resilient means
576	..Plural springs
577	...Adjusting rod between and parallel to coil spring axes
578	..Adjusting means coaxial of coil spring
579	.Including spring biased reel
580	.Including load sustaining bearing or guide
581	..Including suspended horizontal frame or platform
582	..Pivot intermediate plural springs
583	..Plural axes, e.g., angular and linear, universal, etc.
584	..Resilient means acts through linkage or gear
585	...Parallelogram linkage
586	....Diagonal spring
587	....Torsion spring
588	...Crossing links
589	...Suspended support
590	...Torsion spring coaxial with pivot
591	...Plural links connected to support surface
592	..Resilient means acts through arm or lever
593	...Plural arm or lever
594	...Compression spring
595	...Pivoted link between support surface and understructure
596	..Stationary horizontal pivot
597	...Spiral spring surrounds pivot axis
598	...Supporting surface pivoted at one end
599	..Resiliently supported leg or standard
600	...Spring coaxial with leg or standard
601	....Encircles leg or standard
602	..For movement along a linear axis
603	.Including three or more circumferentially arranged resilient elements
604	..Inwardly extending resilient arms
605	.Plural resilient mountings for oscillation about a distinct axis
606	..Coaxial
607	...Including torque reaction member
608	.Torsion bar or bushing
609	..Elastomeric
610	.Suspended
611	..By member intermediate opposed resilient elements or surfaces
612	..By lateral flange on supported device
613	..By compression of resilient element
614	.Plural resilient members with intersecting axes
615	.Resilient foot or bumper
616	..Including telescopically movable rigid elements
617	.Spring attached hook or cleat
618	.Including spring zone understructure
619	..Diverse resilient elements
620	...Tension and compression
621	...Including elastomeric element
622	..Resilient vertical standard
623	...Helical spring
624	..Spiral spring
625	...Axially torsioned
626	..Elliptic spring
627	...Laminated
628	...C-section
629	..Cantilever
630	..Laminated spring
631	..Fluid spring
632	..Nonmetallic resilient element
633	...Mat or pad
634	.Nonmetallic resilient element
635	..Including rigid coaxial pin or bushing
636	INCLUDING ENERGY ABSORBING MEANS, E.G., FLUID OR FRICTION DAMPING
637	MACHINERY SUPPORT
638	.Including vibration isolation means
639	.For plural, interrelated machines
640	.For outboard motor
641	..Including false transom
642	..Articulated
643	..Mounted by C-clamp
644	.Extensible column mounted between opposed surfaces
645	.Alternatively mounted
646	.Movable machine
647	..Ambulatory, e.g., mounted on land or rail vehicle, etc.
648	..Weight counterbalanced
649	..By independently adjustable legs or feet
650	...Screw
651	..Including operator or actuator
652	...For angular movement

	MACHINERY SUPPORT
	.Movable machine
	..Including operator or actuator
	...For angular movement
653	....Extensible leg or strut
654	.....Hydraulic or pneumatic
655	...Acting against spring bias
656	...Screw
657	....Horizontally slidable carriage
658	..Including limit stop
659	..Trunnions or flexible supports on opposite sides of machine
660	..About or along plural axes
661	...Intersecting axes
662	...Angular and linear
663	...Including universal ball and socket
664	..Angular movement
665	...Biased for movement in one direction, e.g., by gravity, spring, etc.
666	...About axis parallel to machine shaft
667	...About axis intersecting machine shaft
668	..Along inclined plane
669	..Vertical movement
670	.Adjustable size
671	.Cradle
672	.Modified machine housing or frame
673	.Including engaging structure complementary to foot or leg of machine
674	.Bracket
675	..Plural for single article
676	.Stand
677	.Foot or leg
678	.Base or platform
679	..Including masonry or concrete
680	.Holddown
681	..Including manipulatable latch
27.1	INSTRUMENT IN PANEL
27.3	.Having biased clip holding means
27.5	WASHBOARD TYPE
27.8	FLORAL SUPPORTS
441.1	EASEL; BOOK, COPY OR MUSIC SCORE HOLDER
442	.Watch or clock type
442.2	.Copyholder with writing machine engaging means
443	.Musical instrument supported
444	.Body supported
444.1	.Including transparent viewing portion
445	.Inverted book-type holder
446	.With book leveling means
447	.Holder pivots to operative position
447.1	.Mounted on wall or art device
447.2	..Clamped to support
448	.Adjustable operative size
449	..Vertically adjustable supporting ledge
450	.With article receiving aperture
451	.With article gripping means
452	..Top
453	..Bottom
454	.With adjustable inclination
455	..Prop maintains surface in adjusted position
456	...Notch or cavity engaging
457	..Pivoted to base or stand intermediate edges
458	.Rotatable
459	.Folded blank
460	.Knockdown or collapsible
461	..With housing for collapsed components
462	..Pivoted link
463	..Folding leg
464	...Plural
465	...With brace
465.1	.Of wire
466	MIRROR OR PICTURE TYPE
467	.Adhesive, magnet or suction cup
468	.With spring-actuated clamping of front and back
469	.Stand
470	..Hanger alternative
471	..Handle alternative
472	..Foldable
473	..With groove or notch receiving lower margin of mirror or picture
474	..Mirror or picture pivots
475.1	.Bracket
476	..Mirror or picture position adjustable
477	...Adjustment by selectively engaging projections and recessions
478	....Spring biased
479	...Pivotal connection
480	....With linearly sliding movement
481	....Ball and socket type
482	.....Threaded socket
483	.....Coil spring bias
484	.....With additional pivotal connection
485	....Parallel and perpendicular pivot axes
486	....Parallel pivot axes
487	....Perpendicular pivot axes
488	..Plural fingers hold mirror or picture at edge
489	.Suspended
490	..Plural hooks engage mirror or picture at edge
491	...With spring
492	..With reel for winding cord
493	..With cord retainer
494	..With additional lower support
495	..Adjustable
496	...With selectively engaging projections and recessions
497	..Detachably engaging hook or headed nail
498	...Engaging eye or closed loop
37.3	CUTLERY TYPE
37.6	.Bracket
511	STAFF TYPE
512	.Plural staff
513	..Coplanar
514	.Angularly adjustable
515	..In plural planes
516	...By joint having spherical element
517	..Gravity biased
518	.Alternatively mountable (stand/bracket, etc.)
519	.Stand or base
520	..Inclined staff
521	..Rotatable staff
522	...Driven
523	..Having staff retaining or centering means
524	...Plural means, vertically spaced
525	....Including pivoted, staff-engaging supporting legs
526	.....Engagement is responsive to weight or thrust of staff
527	....Including plural, staff-engaging adjusting screws
528	..Folding
529	..Knockdown
530	.Ground inserted
532	..Having nonuse accommodation for insertable member
533	..Folding or knockdown
534	.Bracket
535	..Having selective mounting or receiving means
536	..For mounting upon surfaces of intersecting planes
537	..Attached by vacuum or magnetic means
538	..Inclined staff
539	..Vertical staff
540	..Double clamp
541	...Cylindrical support
48.1	EAVES TROUGH

	EAVES TROUGH
48.2	.Wall bracket
49	PIPE OR CABLE
50	.Neon tube
51	.Tool cord or tube
52	..Tool attached
53	.Train coupling type
55	.Antifriction element
56	.Extending through plate
57	..Interjoist
58	.Suspended
59	..Adjustable vertically
60	..Flexible
61	..From overhead or messenger cable
62	..Pipe rings or clamps
63	..Cable suspension clamps
64	...Automatically releasing
65	.Brackets
66	..Rod guard
67	..Angle cock type
67.5	..Divided knob or cleat
67.7	..Double arm
68.1	..Plural pipe or cable
69	...With bridle ring
70	..Adjustable
71	..With support penetrating means
72	..Beam clamped
73	..Interlocked bracket and support
74.1	..With ring or clamp
74.2	...Resilient gripping clip or clasp
74.3	...Flexible encircling band
74.4	...Separable
74.5	...Cleat
75	HOSE AND/OR NOZZLE TYPE
76	.Hand, ground and ladder supported
77	.Ladder attached
78	..With carrier
79	.Receptacle attached
80	.Stands
81	..Pivoted standard
82	..Swinging clamp
83	..Plural leg
84	...Swinging clamp
85	...Ground inserted
86	....Swinging clamp
87	..Ground inserted
88	...Swinging clamp
89	.Racks
90	..Folded hose
91	...Link supported
92	....Swinging or folding link
93	.....Simultaneously movable
94	STRAINER OR FUNNEL TYPE
95	BAG HOLDERS
96	.Golf bag
97	.Stands
98	..Wheeled
99	.Mouth holding frames
100	..Prong or hook type
101	..With clamp
102	NURSING BOTTLE TYPE
103	.Bracket
104	..Flexible
105	.Stands
106	..Adjustable
107	..Of wire
108	PASTE TUBE TYPE
109	.Stands
110	BRUSH AND BROOM
111	.Socket type
112	..Of wire
113	.Clasp type
114	WATCH AND CLOCK
115	.Brackets
116	.Stands
117.1	FLATIRON OR SOLDERING IRON
117.2	.Stand or base
117.3	..Insulated
117.4	...With clamp or hold-down
117.5	..Inverted
117.6	..With clamp or hold-down
117.7	.With clamp or hold-down
118	ARMREST OR HEADREST
118.1	.Armrest for writer
118.3	..Adjustable height
118.5	..Traveling
121	STAND AND BRACKET
122	.Adjustable bracket
123.1	..Counterbalanced
124	..Vertically and horizontally
125	..Vertically
126	STAND OR BRACKET ALTERNATIVE
127	STAND
	.Receptacle
128	..Movable receptacle
129	...Wheeled
130	...Rotating, horizontal axis
131	...Rotating, vertical axis
132	...Vertically
133	...Tilting
134	....Closure operating
135	....Casing and support convertible
136	....With foldable stand
137	....With axis intersecting receptacle
138	....Double horizontal axis
139	....Tilting cradle
140	.....With tilting or latch means
141	.....Axis intersecting receptacle
142	......With tilting or latch means
143	....Rocker stand
144	...Swinging base
145	...Swinging about a vertical standard
145.3	...Inverted receptacle pickup
145.6	...Handle
146	..Stationary receptacle
147	...With closure operator
148	...For sloping surface
149	...Adjustable
150	...Knockdown or folding
151	...Attached and detachable legs
152	...Of sheet material
153	...Of wire
154	...With clamp or hold-down
155	.Convertible to cane
155.1	..Handle becomes support surface
155.2	..Radially hinged support arms
155.3	...Slidable extensor
155.4	..Foldable or detachable longitudinal sections
155.5	..Intermediately pivoted sections
156	.Ground inserted
370	.Stand-mounted depending links carry support surface
371	.Tilting support surface
372.1	..Biased
393	..With incremental horizontal adjustment
394	...Ends raised differentially
395	...Concurrent with tilting
396	..Ends raised differentially
397	..With incremental adjustment about fixed horizontal pivot
398	..Tiltable with understructure
158	.Standard type
160	..Flexible
161	..Adjustable vertically
162.1	...Counterbalanced
404	...With force multiplying means
405	....Screw and nut
406.1	.....With rotation prevention disabler
406.2	......Weight or load responsive
407	...Notch or cavity engaging latch
408	....Biased latch
409	.....Support carried release
410	...Canted clutch collar
411	...Settable clamp
412	....Wedge actuated

STAND
.Standard type
..Adjustable vertically
...Settable clamp
413 ....Set screw actuated
414 ...Constant friction brake
159 ..Sectional
415 ..Support surface revolves or rotates about vertical axis
416 ...And moves lineally
417 ...Self-returning to normal facing position
418 ...With means to limit or inhibit rotation
157 .Adjustable vertically
419 ..With horizontal adjustment
420 ...On inclined guide or slide
421 ..Toggle or link
422 ..Geared
423 ..Notch or cavity-engaging retainer
424 .Horizontally movable support surface
425 ..Revolves or rotates about vertical axis
429 ..On slide or guide
430 ...Roller or ball
163.1 .Plural leg
163.2 ..Including suspended support
164 ..Crossed legs
431 ...All legs intersect at common center
432 ...Support surface detachably or slidably connected to leg
165 ..Knockdown
166 ..Folding
167 ...Vertical pivots
434 ...With folding support arms
435 ....Centrally diverging
168 ...Legs pivoted to head
169 ....Simultaneously movable
170 ...Legs pivoted to standard
171 ....Simultaneously movable
436 ...Laterally
439 ...Legs collapse against underside of support surface
172 ..Adjustable for various sized articles
173 ...Pivoted legs
440 ..Interbraced support surface and legs
440.1 ..At least two legs form unitary structure
174 .Of sheet material
175 .Of wire
176 .Article support
177 ..Heads
178 ...Adjustable
179 ....Universally
180 .....Leveling means
181 .....Ball and socket
182 ......Self leveling
183 ....On vertical and horizontal axis
184 ....On double horizontal axis
185 ....On single horizontal axis
186 ....On vertical axis
187 ...Article attaching means
188 .Leg attaching connections
188.1 .Understructure
188.2 ..Elevating or leveling device
188.3 ...Self-positioning
188.4 ...Screw threaded
188.5 ...Telescoping
188.6 ..Folding
188.7 ..Radiating leg type
188.8 ..Leg or foot
188.9 ...Tip or shoe
188.91 ...Brace
200 BRACKETS
200.1 .On extensible column mounted between opposed surfaces
201 .Plural, for single article
202.1 ..For swinging receptacle
205.1 .Specially mounted or attached
205.2 ..By mechanically interlocking fabric (e.g., velcro)
205.3 ..By adhesive
205.4 ...Bridged by diverse anchoring means
205.5 ..By vacuum
205.6 ...Bridged by diverse anchoring means
205.7 ...Including resilient means acting against atmospheric force
205.8 ...Including vacuum maker or breaker
205.9 ....Including valve or port
206.1 ...Including diverse abutment; e.g., brace, fulcrum
206.2 ...Including annular vacuum cup
206.3 ...Including plural vacuum cups
206.4 ....Vertically spaced
206.5 ..By magnet
207 ..Vertically or horizontally
237 ..Roof
208 ..Window
209 ...Radiator bracket
236 ...Shelf or scaffold type
210 ..Ladder
211 ...Hook type
238 ...Shelf or scaffold type
212 ..Faucet
213 ...Hook type
213.1 ..On closure hinge
213.2 ..On receptacle
213.3 ..On radiator
213.4 ...Radiator clamped
214 ..On horizontal rod or bar
215 ...Hook type
216.1 ..Including support piercing or cutting means
216.4 ...Including diverse mounting or attaching means
217.1 ...Weight causes means to engage support
217.2 ...Plural means engaging in different directions
217.3 ...Strike out, e.g., spur, barb, etc.
217.4 ...Threaded shank
218.1 ...Of wire
218.2 ....Single piece
218.3 .....Piercing or cutting means at each end
218.4 ..Post or column attached
219.1 ...Plural distinct post or column engaging means
219.2 ...At top of post or column
219.3 ...Traversing post or column
219.4 ...Including saddle
220.1 ..Corner
220.2 ..Interlocked bracket and support
220.3 ...Aperture board
220.4 ....Bracket engages plural apertures
221.1 .....Horizontally and vertically spaced apertures
221.2 .....Vertically spaced apertures
221.3 ...Resilient catch or latch
221.4 ....Plural, oppositely acting resilient members
222.1 ...Including manually movable or removable latch, retainer or keeper
222.2 ...Interlocked by angular motion
222.3 ....By rotation
222.4 ...Keyhole slot
223.1 ....Including keeper or retainer
223.2 ....Plural, differently directed slots
223.3 ...Including spaced, diverse engagements
223.4 ...Tongue and groove
224.1 ....Longitudinally stepped or tapered
224.2 ....Stepped or tapered sidewalls
224.3 ...Including socket or sleeve
224.4 ...Tongue and aperture
225.1 ...Including open slot
225.2 ...Including hook
225.31 ..Clamped to support

	BRACKETS
	.Specially mounted or attached
	..Clamped to support
227	...Hook type
228	...Beam clamped
229	...With article clamp
230	...Cylindrical support
231	....Flexible clamping band
231.1	...Tension element extends through support
231.2	...By expanding clamp
231.3	...By cam or wedge
231.4	...By sliding jaw
231.5	...By pivoted jaw
231.6	...By separable jaw
231.7	...By C-clamp
231.8	...By resilient clip
231.9	..In aperture of support
231.91	..By wall anchor
232	.Radiator
233	..Suspended radiator
234	..With rod-supported hook
235	.Shelf or scaffold type
239	..Projecting pin type
240	..Swinging or folding
240.1	...Stored in housing
240.2	...With floor engaging prop
240.3	...Removable and foldable entity
240.4	...Shelf support swings vertically
241	..Adjustable
242	...To vary shelf angle
243	...Vertically
244	....Sliding
245	.....Clamping
246	......Self-acting
247	..Of sheet material
248	...Single blank
249	..Of wire
250	..Shelf holding means
251	.Rod type
252	..Combined curtain rod and shade roller
254	...Independent bracket
255	....Plural rod
256	.....Adjustable
257	....Adjustable
258	.....In two directions
259	.....Laterally
260	......Step-by-step
253	...Plural rod
261	..Curtain rod
262	...Independent bracket
263	....Plural rod
264	....Mounted on opposing walls
265	....Adjustable
266	..Shade roller type
267	...Independent bracket
268	....Mounted on opposing walls
269	....Adjustable
270	.....In two directions
271	.....Laterally
272	......Step-by-step
273	..Awning head rod
274	.Adjustable
276	..Plural joint
277	...Lazy tong type
278	...Vertical and horizontal pivots
279	....With sliding joints
280.1	....Counterbalanced
281.1	....With parallel arms
282	...Vertical pivots
283	....With vertical adjustment
284	...Horizontal pivots
285	...Single vertical pivot and sliding joints
286	...Single horizontal pivot and sliding joints
287	...Horizontally and vertically sliding joints
288.1	..Single joint
288.3	...Ball and socket type
288.5	....Including mechanically actuated tension or locking member
289.1	...Vertical pivot
289.3	....Self-returning
290	....Hook type
291	...Horizontal pivot
292.1	....Counterbalanced
293	....Retractable
294	....Hook type
295.1	...Vertically sliding
296	....And rotatable
297.1	....Counterbalanced
297.2	....Bracket projects from vertical slot or channel
297.3	....Step-by-step adjustment
297.5	....Canted clutch collar
298	...Horizontally sliding
299	...In arcuate path
300	.Of sheet material
301	..Hook type
302	.Of wire
303	..Hook type
304	.Hook type
305	..Article clasping
306	..Article releasing
307	..Slidable
308	..Foldable
309.1	.Article holding means
309.2	..Pin or spindle
309.3	..Vacuum
309.4	..Magnetic
310	..Base engaging
311.2	..Receptacle type
311.3	...Inverted receptacle
312	...Neck engaging
312.1	...Uper rim or lip engaging
313	...Clamp
314	..Socket
315	..Ring
316.1	..Clamp
316.2	...Wedging or camming
316.3	....Self-actuating
316.4	...Sliding jaw
316.5	...Pivoted jaw
316.6	...Separable jaw
316.7	...Clip
316.8	..Horizontally spaced elements
317	SUSPENDED SUPPORTS
318	.Receptacle or bowl
320	.Releasable for lowering
321	..Clutch type
322	..Hook type
323	.Adjustable
324	..Pivoted parts
325	...Weights counterbalance
326	...With telescoping tubes
327	..Vertically
328	...Cord supported
329	....Reel
330.1	.....Spring
331	....With counterweight
332	....Pulley brackets
333	...Telescoping tubes
334.1	....Spring reel counterbalanced
335	.....With clutch in tubes
336	....Clutch
337	.....Friction
338	....Rotary brake
339	.Hook type
340	..Bar supported
341	..Swinging
342	.Fittings
343	..Ceiling attachment
344	..Centerpiece attachments
345	CANOPIES
345.1	SCUFF PLATE OR BUMPER

346	SUPPORTING BASES
346.1	.Coaster or caster cup
347	.Signal rod
348	.Radiator
349	.Rotatable
351	PROPS AND BRACES
352	.Automobile
353	.Clothesline
354.1	.Adjustable length
354.2	..Held in adjusted position by flowable granular material
354.3	..Threaded adjusting or locking member
354.4	...Locking member movable transversely of direction of adjusting movement (e.g., set screw)
354.5	..Held in adjusted position by transverse pin in registering apertures
354.6	..Held in plural discrete positions
354.7	...One-way locking (e.g., ratchet)
357	.Heads and bases
362	.VACUUM HOLD-DOWN
499	TIE DOWN
500	HOLD-DOWN
501	.For furniture-type leg
502	..Hollow leg entering
503	.Vehicle-mounted; for vehicle appurtenance
503.1	..For seat
504	.Paperweight type
505	.Looping or straddling
506	.Integral with article
507	.Post-mounted
508	..Stake post
509	..Vertically spring biased
510	CLASP-DOWN
363	VACUUM
364	COUNTERBALANCE WEIGHTS
694	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	MOVABLE OR DISENGAGEABLE ON IMPACT OR OVERLOAD
901	SUPPORT HAVING TEMPERATURE OR PRESSURE RESPONSIVE FEATURE
902	EYEGLASSES HOLDER
903	SUPPORT REINFORCEMENT
904	INDICATOR MOUNT
905	TISSUE DISPENSER MOUNT
906	ELECTRICAL OUTLET BOX SUPPORT
907	TRASH CONTAINER SUPPORT
908	SIMULATION OF DIVERSE DEVICE
909	FRANGIBLE COMPONENT (E.G., HAVING A SCORE LINE OR GROOVE)
910	WEIGHTED BASE
911	PLURAL, SELECTIVELY USABLE, SUPPORT ENGAGING MEANS
912	PLURAL, SELECTIVELY USABLE, ARTICLE ENGAGING MEANS
913	TWO AXIS ARTICLE ENGAGING MEANS (E.G., X - Y DEVICE)
914	HANDBAG HOLDER
915	WITH ORNAMENTATION
916	MECHANICAL EXPEDIENTS (E.G., IN SUPPORTS)
917	VIDEO DISPLAY SCREEN SUPPORT
918	.Ancillary device support associated with a video display screen
919	.Adjustably orientable video screen support
920	..Angular and linear video display screen support adjustment
921	..Plural angular
922	..Angular
923	...Tilting
924	.Adjustable size
925	MOUNTAIN CLIMBING AIDS (E.G., PITONS ETC.)

CLASS 249 STATIC MOLDS

1 IN SITU CONSTRUCTION ENGINEERING TYPE OR BUILDING TYPE-MOLD OR FORM
2 .Forming road, side walk, or curb in situ
3 ..Including stake or stake mounting means
4 ...Form having spaced walls defining mold space
5 ....Including spacer cooperating with stake means to maintain walls apart
6 ...And means to align forms end-to-end
7 ...Means includes removable wedge engaging stake
8 ..Integral curb and gutter by mold having three spaced form walls
9 ..Joint forming means and adjuncts per se
10 .Forming hydraulic and earth control type product in situ
11 ..Culvert, waterway, pipe, or tunnel
12 ...Culvert and header wall
13 .Forming building structure
14 ..Stair
15 ..Providing surface facing on product, or existing structure, e.g., veneer, etc.
16 ..Forming barrier having simulated plural modules
17 ..Chimney
18 ..Barrier or sustainer, e.g., wall, joist, etc.
19 ...Including means to connect mold to existing building structure
20 ....Progressive molding type
21 .....Mold includes end plate
22 .....Mold forms spaced walls, or hollow wall
23 ....Means connecting flange of structural beam to support mold
24 .....Adjustable centering mold, or mold having adjustable support
25 .....Latch or clamp means including movable element engaging flange
26 ...Plural barriers, or plural sustainers, or barrier and sustainer mold
27 ....Intersecting barriers or sustainers, e.g., monolith
28 ....Floor or ceiling with joist mold
29 .....Including means to adjust joist mold size
30 .....Including reinforcement support means
31 .....Utilizing spaced cores of unitary construction transverse to joist
32 ......Cores directly abutting
33 ...Planar wall mold having opposed spaced panels
34 ....On footing or forming wall and footing
35 ....Panel including means or having shape to form recessed surface in major face of wall
36 ....Including means for forming spaced oposed walls or hollow wall
37 .....Means forming spaced hollow vertical shafts in wall
38 .....Utilizing tie means for connecting formed opposed walls, i.e., preform uniting
39 ....Including means transverse to panel to form opening through major face of wall, e.g., door, window, etc.
40 ....Including panel spacing means extending between and through panels, e.g., tie rod
41 .....Having weakened area to aid severing
42 .....Spacer means within mold cavity having plural threadedly fastened sections
43 .....Including sleeve surrounding spacer means engaging opposed faces of panels
44 .....Panel having plural adjoining sections
45 ......Including fastening means coacting with spacer means to secure sections together
46 .....Including wedge means engaging spacer means
47 ....Panel having plural adjoining sections and means to secure together
48 ...Column
49 ....Molding surfaces overlapping for adjustment
50 ...Beam or girder
51 .Post in situ
52 INCLUDING STATIC MEANS ON MOLDING DEVICE TO PRODUCE GROOVE OR DEPRESSION IN PRODUCT TO FACILITATE BREAKING OR CUTTING
53 R WITH STATIC GAGE, LEVEL, PLUMB, OR SCALE MARKINGS, ETC., ON MOLDING APPARATUS
53 M ..Mortar
54 DENTAL PROSTHODONTIC TYPE
55 HAVING SURFACE SHAPED TO SIMULATE A PRODUCT OF NATURE
56 FORMING VEHICULAR WHEEL
57 FORMING RING TYPE PRODUCT
58 FORMING RECEPTACLE AND DISPARATE PORTION, E.G., CUP AND HANDLE, TOILET STOOL, ETC.
59 FORMING HELICAL OR THREADED PRODUCT
60 FORMING GRID OR LATTICE TYPE PRODUCT
61 INCLUDING DESTRUCTIBLE FEATURE
62 .Destructible by heat or fusion
63 MOLD INCLUDING CORE AND MEANS TO REMOVE CORE
64 .Plural cores
65 HAVING INFLATABLE ELEMENT
66.1 INCLUDING MEANS TO APPLY FORCE TO REMOVE OR RELEASE PRODUCT FROM MOLD
67 .Pin or sleeve means
68 ..Having actuating means
69 .Tray-like mold including grid
70 ..Means mounted on or integral with tray-like mold
71 ..Means mounted on or integral with grid
72 ...Multi-part central longitudinal grid member
73 ...Plural movably mounted levers
74 .Means moves mold bottom through upstanding mold walls
75 ..Means is bell-crank type lever arrangement
76 ..To remove or release plural products
77 .Scraper
78 INCLUDING ELECTRIC HEATING MEANS
79 INCLUDING MEANS WITHIN SURFACE TO CONFINE HEAT EXCHANGE MEDIUM
80 .Mold part of particular material
81 .Mold having plural mold cavities or plural molds with community feature
82 INCLUDING MEANS TO ADJUST MOLD VOLUME DURING MOLDING
83 UNITING PREFORM WITH MOLDING MATERIAL
84 .Preform functions as partition means
85 .Preform supported by partition and preform projects within mold cavities
86 .Rail or railway type preform

UNITING PREFORM WITH MOLDING MATERIAL
87 .Lining or coating a machine type-bearing or friction surface, e.g., babbitting
88 ..Including adjustable feature or preform centering means
89 .Pipe bell uniting to male end of pipe
90 .Mold supported by and girdles preform
91 .Including means other than mold surface to support preform
92 ..Food product
93 ..Means located outside mold cavity
94 ...Preform also supported by hole or recess in mold wall
95 .Split mold clamps and supports preform
96 .Preform supported by hole or recess in mold wall or surface
97 ..Hole extends through mold wall
98 FORMING PRODUCT HAVING JOINT OR COUPLING
99 .Lapped interfitted facing, alternating reversing identical facing, or keyways
100 ..Tubular facing connected end to end, e.g., bell or spigot, etc.
101 .Tongue and groove on same product
102 PROVIDING SUBSTITUTION OF ALTERNATIVELY USED PARTS
103 .Part having intelligence
104 .Part having intaglio or cameo effect
105 INCLUDING STATIC FILLING MEANS IN CONTACT WITH MOLD CAVITY
106 .Sink head or hot top
107 .Means includes single material inlet communicating with plural feed passages leading to single cavity
108 .Means is separable funnel or hopper
109 .Having inlet to cavity at or near bottom of cavity
110 .Means include single material inlet communicating with plural cavities
111 INCLUDING SOLID HEAT CONDUCTOR OR INSULATOR, I.E., CHILL OR INSULATOR
112 INCLUDING REMOVABLE OR MOVABLE LINER
113 .Foraminous
114.1 INCLUDING COATING OR ADHERENT LAYER
115 .Parting layer
116 .Super-imposed metal layers
117 CONTAINER-TYPE MOLDING DEVICE
118 .Plural molds having common means to actuate a part of each mold
119 .Plural article forming mold, or molds with community feature
120 ..Including support, stand, or rack
121 ..Including lid
122 ..Including core
123 ...Common to plural mold cavities
124 ...Removably connected to mold surface
125 ...Integral with removable mold surface or forming partition
126 ..Vertically stacked mold
127 ..Mold or mold part of flexible material to facilitate product removal
128 ...Removable partition
129 ..Having unitary partition common to and defining plural mold cavities
130 ...Partition includes means providing communication between cavities
131 ...Partition removable without mold disassembly
132 ...Intersecting partitions
133 ..Constructed to include an ambient air space
134 .Of named component
135 ..Metal
136 .Mold bottom movable through upstanding mold walls to aid product removal
137 .Having means enabling rotation of molding device, e.g., rocker, pivot, etc.
138 ..Forming stereotype
139 .Including means securing molding device to detachable, separate and distinct support
140 .Forming module having spaced intaglio or cameo areas on major face of module
141 .Including auxiliary port for transmission of fluid, i.e., vent or drain
142 .And an inner removable core to form recess or opening
143 ..Fence post
144 ..Having inner and outer shells forming conduit-type product, receptacle-type product, or module
145 ...Plural intersecting cores to produce product having intersecting passages
146 ...Including non-molding means engaging internal portion of core to retain core spaced throughout its length
147 ....Means is secured to core and engagable with a keeper opening in a wall of the molding device
148 ....Means is exterior of and spanning molding space, e.g., tie bar, etc.
149 .....Core spaced from bottom of mold cavity
150 ...Inherently resilient core frictionally retained in position by its expansive or contractive force
151 ...Core slidably removably engaging a hole in the wall of the molding device
152 ...And means to expand or contact shell or core
153 ....By bending or flexing molding face
154 .Having opposed complementary arcuate surfaces with terminating end wall to for
155 .Adjustable, forming different size or shaped product
156 ..By change of number of mold surfaces
157 ..By overlapping molding surfaces
158 ..By mold wall movable transversely between walls of mold
159 ..By means adjusting angular displacement of adjoining mold walls
160 .Having plural mold sections
161 ..With means to move section
162 ...Means moves opposed sections simultaneously toward and away from each other
163 ..Removable means to maintain assembled, i.e., knockdown
164 ...Peripherally encircling means
165 ...Wedge, pin, or bolt means
166 ....Including locking means to prevent removal of wedge, bolt, or pin, e.g., nut, etc.
167 ...Means include permanently associated movable element, e.g., clamp
168 ..Each with fastening means
169 ...Movably secured to section
170 ..Hinged sections
171 ...Plural section hinged to common section
172 ....Bottom section
173 .Longitudinally split, resilient cylindrical mold having means to maintain in a contracted position
174 .Forming ingot
175 CORE (INTERNAL MOLD)

	CORE (INTERNAL MOLD)
176	.Plural spaced cores having community feature
177	.Including means for attaching core to a support
178	.Including means to expand or contract core
179	..Means bends or flexes molding face of core
180	..Means simultaneously moves plural molding sections of core
181	...Rotary means
182	..Rotary means, e.g., turnbuckle, etc.
183	.Of resilient material capable of flexure to aid removal of core from product
184	.Of plural sections
185	..Hinged sections
186	..Including frictionally secured means
187.1	MOLD ELEMENT
188	.In situ construction engineering or building type
189	..Form panel
190	...Including tie rod or means for positioning tie rod
191	....Including means to connect plural panel sections also mount tie rod
192	...Including means to connect abutting panel sections
193	....Consisting of shaping and retaining means disposed between sections
194	....Angularly arranged panel sections
195	....Pivoted means on one section engaging projection or recess of other section
196	....Means reciprocably engages apertures in each panel section
197	.Sink head or hot top
198	..Including means permitting change in relative position of sink head or hot top on mold
199	..Including means reflecting heat to surface of melt
200	..Hollow for confining a heat producing or heat retaining medium
201	..Including internal, diverse, perimetric layer
202	..Adjuncts
203	.Grid, e.g., ice tray type
204	.Closure, e.g., top, stools, etc.
205	MISCELLANEOUS MOLD ADJUNCTS
206	.Splash control element
207	.In situ construction engineering or building type
208	..Curb or step support
209	..Arch-like centering, e.g., culvert, tunnel, bridge, arch, etc.
210	..Barrier or sustainer type
211	...Including means to attached to flange of beam
212	...Adjustable support for dome shaped core
213	..Including tie
214	...Having weakened area to facilitate breaking
215	...Coiled or twisted wire
216	...Having means to maintain panels spaced apart
217	....Shaping means removably mounted on tie
218	....Sheet metal
219.1	..Clamp or bracket, per se
219.2	...Waler type

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DIGESTS

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DIG 1	Cake pan
DIG 2	Paper core
DIG 3	Swimming pool
DIG 4	Test mold
DIG 5	Hot top

250 RADIO AND MICROWAVE ABSORPTION WAVEMETERS
251 ELECTRICALLY NEUTRAL MOLECULAR OR ATOMIC BEAM DEVICES AND METHODS
252.1 CALIBRATION OR STANDARDIZATION METHODS
253 GEOLOGICAL TESTING OR IRRADIATION
254 .With drill or drilling
255 .With sampling
256 .Well testing apparatus and methods
257 ..With casing collar detection
258 ..By interface of fluids
259 ..With placement of tracer in or about well
260 ...Tracer being or including radioactive material
261 ..With detector or detector circuit control
262 ..With particular detector signal circuit
263 ...With detector signal modulation or carrier wave
264 ...Having plural detectors
265 ..Plural detectors
266 ...With spacing or direction of detectors
267 ..With radiation control to detector
268 ..With well engaging means
269 ..With source and detector
270 ...Having neutron source and gamma detector
271 CODED RECORD AND READERS; INVISIBLE RADIANT ENERGY TYPE
281 IONIC SEPARATION OR ANALYSIS
282 .Methods
283 ..With collection of ions
284 ...For material recovery
285 .With plural, simultaneous ion generators
286 .Ion beam pulsing means with detector synchronizing means
287 ..With time-of-flight indicator
288 .With sample supply means
289 .With evacuation or sealing means
290 .Cyclically varying ion selecting field means
291 ..Circular ion path
292 ..Laterally resonant ion path
293 ..Alternating field ion selecting means
294 .Static field-type ion path-bending selecting means
295 ..With variable beam shifting field means
296 ..Plural diverse-type static path-bending fields
297 ...For causing complex ion path
298 ..Magnetic field path-bending means
299 ...With detector
300 ....With detector control or regulating
301 METHODS OF DETERMINING OIL PRESENCE, CONTAMINATION OR CONCENTRATION
302 RADIATION TRACER METHODS
303 .Radioactive tracer methods
304 METHODS INCLUDING SEPARATION OR NONRADIANT TREATMENT OF TEST MATERIALS
305 ELECTRON ENERGY ANALYSIS
306 INSPECTION OF SOLIDS OR LIQUIDS BY CHARGED PARTICLES
307 .Methods
308 .Including a radioactive source
309 .Positive ion probe or microscope type
310 .Electron probe type
311 .Electron microscope type
440.1 .Analyte supports
441.1 ..With air lock or evacuation means
442.1 ..With object moving or positioning means
443.1 ..With heat transfer or temperature-indication means
315.3 SOURCE WITH CHARGED PLATE-TYPE DETECTOR
316.1 WITH INFRARED OR THERMAL PATTERN RECORDING
317.1 .Thermal copying of documents
318 ..With image transfer device
319 ..With conveying means
324 CORONA IRRADIATION
325 .Charging of moving object
326 .Charging of objects
327.2 SOURCE WITH RECORDING DETECTOR
328 AUTOMATIC/SERIAL DETECTION OF SIMILAR SOURCES
329 RECORD PROJECTORS
330 INFRARED-TO-VISIBLE IMAGING
331 .Including liquid crystal detector
332 .Including detector array
333 .Including image tube type detector
334 .Including means for scanning field of view
335 CLOUD OR BUBBLE CHAMBERS
336.1 INVISIBLE RADIANT ENERGY RESPONSIVE ELECTRIC SIGNALLING
336.2 .Superconducting type
337 .With heating of luminophors
338.1 .Infrared responsive
338.2 ..Ferroelectric, ferromagnetic, photomagnetic types
338.3 ..Pyroelectric type
338.4 ..Semiconducting type
338.5 ..With means to analyze uncontained fluent material
339 ..With selection of plural discrete wave-lengths or bands
340 ..Methods
341 ...With irradiation of object or material
342 ...Locating infrared emissive objects
343 ..With means to transmission-test contained fluent material
344 ...Plural series signalling means
345 ...Plural beam/detector pairs
346 ....Plural temperature sensitive signalling means
347 ..With moveable beam deflector or focussing means
348 ...Controlled by signalling means
349 ..Plural signalling means
350 ...With periodic beam varying means
351 ..With periodic beam varying means
352 ..With temperature modifying means
353 ..With beam deflector or focussing means
354.1 .Signalling means controls incident radiation
356.1 .Flow metering
356.2 ..Using radioactive tracer
357.1 .Fluent material level signalling
358.1 .With means to inspect passive solid objects
359.1 ..Rectilinearly moving object
360.1 ..With relative movement means
361 R .With or including a luminophor
361 C ...Chemiluminescent detection
362 ..Methods
363.01 ..With radiant energy source
363.02 ...Body scanner or camera
363.03 ....With positron source
363.04 ....Emission tomography
363.05 .....With detector support
363.06 ....Using coded aperture
363.07 ....With distortion correction
363.08 ....With detector support
363.09 ....With calibration
363.1 ....With a collimator
364 ...With fluent source handling or collecting means
365 ...Ultraviolet light source
366 ..Plural electric signalling means
367 ..Plural or composite luminophor

	INVISIBLE RADIANT ENERGY RESPONSIVE ELECTRIC SIGNALLING
	.With or including a luminophor
368	..With optics
369	..With output system
370.01	.Semiconductor type
370.02	..Alpha particle detector
370.03	..Fission fragment/fissionable isotope detector
370.04	..Self-powered detector
370.05	..Neutron detector
370.06	..With discrimination
370.07	..With dose or dose rate measurement
370.08	..With imaging
370.09	...Using X-ray or gamma-ray source
370.1	..Position-sensitive detector
370.11	..With scintillator
370.12	..Of exotic material
370.13	...Containing cadmium telluride
370.14	..Of particular structure (e.g., MOS, PIN)
370.15	..With temperature control or compensation
371	..Methods
372	.Ultraviolet light responsive means
373	..With means to transmission-test contained fluent material
374	.Including a radiant energy responsive gas discharge device
375	..Methods
376	..With electroscopic indicators
377	...With charge generator
378	...With charge storage means
379	..With means to supply the gas
380	...Radioactive gas, or with gas-borne radioactive material
381	...With radioactive source
382	..With means to ionize the gas
383	...Emissive fluent type, or with transmissive fluent material
384	...Radioactive
385.1	..Plural chambers or three or more electrodes
385.2	...Spark chambers
386	..With a periodic electrode bias varying means
387	..With periodic electrode bias supply
388	..With indicator
389	.Including ionization means
390.01	.Neutron responsive means
390.02	..Radiographic analysis
390.03	..With dose measurement
390.04	..Composition analysis
390.05	...For moisture content
390.06	..Density/thickness/consistency analysis
390.07	..Spectrum analysis
390.08	...Using time-of-flight spectrometers
390.09	...Using diffractometers
390.1	..Including beam control
390.11	..Including a scintillator
390.12	..Position-sensitive
391	..Methods
392	..With indicating or recording means
393	.With radiant energy source
394	.Plural signalling means
395	.Methods
200	PHOTOCELLS; CIRCUITS AND APPARATUS
201.1	.Photocell controls its own optical system
201.2	..Automatic focus control
201.3	...Of a microscope
201.4	...Active autofocus
201.5	....With optical storage medium, e.g., optical disc
201.6	...Based on triangulation
201.7	...Based on contrast
201.8	...Based on image shift
201.9	..Light beam wavefront phase adaptation

203.1	..Following a target (e.g., a star or instrument pointer or other object) other than a pattern
203.2	...Target illuminated by artificial light source
203.3	...Self-luminous target
203.4	....Sun
203.5	....Cathode ray tube scanning
203.6	....Airborne target, or spaceborne target other than the sun (e.g., star or missile)
203.7	....With moving reticle in optical path
202	..Following a pattern (e.g., line or edge)
548	..Controlling web, strand, strip, or sheet
549	..Cathode ray tube
204	..Adjusting optical system to balance brightness in plural paths
205	..Controlling light source intensity
550	.Interference pattern analysis (e.g., spatial filtering or holography)
551	.Signal isolator
552	.Solid state light source
553	..Array or matrix
554	.Flame light source
206	.Photocell controlled circuit
206.1	..Having means to generate positional information in at least one plane of a target moving relative to one or more photodetectors
206.2	...Detection of positional information in two or more planes (e.g., azimuth and elevation; hour angle and declination)
206.3	....With moving reticle in optical path
555	..Including coded record
556	...Document verification or graph reader
557	...With means to position, direct, or detect record
558	..Steroplotters
559	..With circuit for evaluating a web, strand, strip or sheet
560	...Width or length
561	...Presence or position
562	...Defects
563	....With scanning
564	..With circuit for evaluating a fluent material
565	...With comparison
207	..Electron multiplier
208.1	..Plural photosensitive image detecting element arrays
208.2	..Plural photosensitive nonimage detecting elements
208.3	...With electronic scanning
208.4	...Used to switch an electrical circuit or device on or off
208.5	...With photodetector output ratioing other than by bridge or push-pull circuits
208.6	...With specific relative positional geometry of photosensitive elements (e.g., an annular photosensitive element surrounding a coaxially mounted photosensitive element)
210	..Bridge and push-pull circuits
211 R	..Special photocell
211 J	....Photosensitive junctions
211 K	....Photosensitive rheostats
212	...Self-generating type
213 R	...Light amplifiers
213 A	.....Switching circuits
213 VT	.....Vacuum tube circuits
214 R	..Electron tube circuits
214 P	....Photographic control
214 D	....Light dimmers
214 A	....Amplifier

	PHOTOCELLS; CIRCUITS AND APPARATUS
	.Photocell controlled circuit
	..Electron tube circuits
214 AG	....Automatic gain control
214 AL	....Ambient light responsive
214 B	....Ambient light desensitizing means
214 C	....Compensation
214 DC	....Digital circuitry
214 L	....Logarithmic/linear signal
214 RC	....Rate of change
214 SF	....Slave flash
214 SW	....Electronic switch
215	.Combined with diverse-type device
216	.Optical or pre-photocell system
227.11	..Light conductor
227.12	...Optical delay line
227.13	...Light pen
227.14	...Condition responsive light guide (e.g., light guide is physically affected by parameter sensed which results in light conveyed to the photocell)
227.15	....With detection of macroscopic break in fiber
227.16	....With detection of fiber microbend caused by parameter affecting fiber
227.17	....Causing polarization change in fiber
227.18	....Causing light spectral frequency/wavelength change
227.19	....With coherent interferometric light
227.2	...With imaging
227.21	...With light chopping or modulation
227.22	....Keyboard or other manual switch controlled
227.23	...With spectral frequency/wavelength discrimination
227.24	...With coupling enhancement means
227.25	....Fluid coupling
227.26	...With scanning
227.27	...With coherent interferometric light
227.28	...With specific configuration of light conductor components with respect to each other
227.29	...With specific illumination or viewing orientation of light conductor relative to viewed object (e.g., light normal to, and detector at 45 degree angle to, viewed object
227.3	...With variable orientation of light conductor relative to viewed object (e.g., goniometer)
227.31	...Side or edge illuminated light conductor or collector
227.32	...End illuminated light conductor with noncircular geometric crosssection
566	..Including coded record
568	...Digital information
569	....Card type
570	....Tape, drum or disc types
571	..Detection or web, strand, strip or sheet
572	...Material defects
573	..Fluent material in optical path
574	...Scattered or reflected light
575	...Plural paths
576	...Sample holder or supply
577	...Volume or level
221	..Controlled by article, person or animal
222.1	...Inanimate article
222.2	....Particle detection
223 R	....Conveyor or chute
223 B	......Bottles
224	....Article and light ray relatively moved during sensing
225	..Polarizing
226	..Color (e.g., filter or spectroscope)
228	..Integrating sphere
229	..Light valve (e.g., iris diaphragm)
231.1	...Actuated by dynamic external physical quantity
231.11	....Actuated by gauge element deflection
231.12	....Gyroscopes
231.13	....Shaft angle transducers
231.14	.....Incremental shaft readers, i.e., with means to generate increments of angular shaft rotation
231.15	......With plural gear driven discs
231.16	......Using phase difference of output signals from plural photodectors
231.17	......With means to indicate a complete shaft rotation
231.18	......Position indicating shaft encoders with means to generate a unique signal for each specific angular shaft position
231.19	....Pressure-responsive light valves
230	...Reflection type(e.g., mirror galvanometer)
232	...Light chopper type
233	....Rotary
578.1	..Plural light sources or optical paths
234	..Means for moving optical system
235	...Repetitious path
236	....Rotary motion
237 R	..Hoods, grating, baffles, diaphragms, masks
237 G	....Gratings (moire fringes)
238	.Temperature control of photocell
239	.Housings (in addition to cell casing)
396 R	WITH CHARGED PARTICLE BEAM DEFLECTION OR FOCUSSING
396 ML	..Magnetic lens
397	.With detector
398	.With target means
399	..Secondary emissive type
400	..With means to convey or guide the target
423 R	ION GENERATION
423 P	..Photoionization type
423 F	..Field ionization type
424	.Methods
425	.With sample vaporizing means
426	.Arc type
427	.Electron bombardment type
428	FLUENT MATERIAL CONTAINMENT, SUPPORT OR TRANSFER MEANS
429	.With temperature control
430	.With valve or pump actuator
431	.With cleaning means
432 R	.With irradiating source or radiating fluent material
432 PD	...Parent-daughter isotope separators
433	..Including a moveable-surface transfer means
434	..Including a gravity-type transfer means
435	..Including a flow-through transfer means
436	...Flow-enclosed radiation source
437	...Tortuous path type
438	...With a flow-modifying surface
453.1	SUPPORTS FOR NONSIGNALLING OBJECTS OF IRRADIATION (E.G., WITH CONVEYOR MEANS)
454.1	.With source support
455.1	..Source and object encasement (e.g., sterilizers)
458.1	LUMINOPHOR IRRADIATION
459.1	.Methods
461.1	.With ultraviolet source
461.2	..Biological cell identification
462.1	..Self-luminous articles
463.1	..Dials, pointers, gauges, and bands
464.1	..Pendants

	LUMINOPHOR IRRADIATION
	.With ultraviolet source
465.1	..Manual operators or luminous attachments therefor
466.1	..Covers, keys, or luminous attachments therefor
467.1	..Reticles, gun sights or with optical element
472.1	INVISIBLE RADIATION RESPONSIVE NON-ELECTRIC SIGNALLING
473.1	.Methods
474.1	.Optical change type
475.2	.Photographic type
482.1	..With radiation filter, modifier or shield (e.g., dosimeter badges)
483.1	.Luminescent device
484.1	..Requiring an additional energy source to cause luminescence
485.1	..With light excluding casing having an aperture
486.1	..With plural luminescent material or plural luminescent containing layers or areas
487.1	..With optical member or material to directly modify luminous energy
488.1	...Plural planer layer type
489	ION COLLECTORS
491.1	MEANS TO ALIGN OR POSITION AN OBJECT RELATIVE TO A SOURCE OR DETECTOR
492.1	IRRADIATION OF OBJECTS OR MATERIAL
492.2	.Irradiation of semiconductor devices
492.3	.Ion or electron beam irradiation
493.1	RADIANT ENERGY GENERATION AND SOURCES
494.1	.Plural radiation sources
495.1	..Including an infrared source
496.1	.With container for radioactive source and radiation directing or selectable shielding
497.1	..With means to move source between shielded and unshielded position
498.1	..With pivoted or rotatable radiation shield
503.1	.With radiation modifying member
504 R	..Ultraviolet or infrared source
504 H	....Hand-held
505.1	RADIATION CONTROLLING MEANS
506.1	.Shielded receptacles for radioactive sources
507.1	..Having plural storage compartments or plural nested receptacles
515.1	.Shields
516.1	..Garments
517.1	..Construction elements or building parts
518.1	..With neutron absorption material
519.1	..Flexible
522.1	SOURCE SUPPORTS
526	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	OPTICAL LIQUID LEVEL SENSORS
901	.With gap between light guide elements (includes open light path preset)
902	..With closed light path preset
903	...With prism contacting liquid
904	.With single light guide element to guide light in a continuous path
905	..With longitudinal irregularity
906	...With large scale longitudinal bend
907	...With portions of light guide coating or cladding removed
908	...With waveguide twisted about its longitudinal axis

CLASS 251 VALVES AND VALVE ACTUATION

1.1	BLOW-OUT PREVENTERS (I.E., COOPERATING SEGMENTS OF ANNULUS)
1.2	.Deformable annulus
1.3	.Radial reciprocating ram
3	PATTERN TRACER CONTROLLED ACTUATOR
4	TUBE COMPRESSORS
5	.Fluid pressure actuated
6	.Roller tube contacting element
7	.Perpendicularly reciprocating tube contacting element
8	..Screw actuated
9	.Pivoting tube contacting element
10	..U-shaped resilient bar or rod
11	HEAT OR BUOYANCY MOTOR ACTUATED
12	FLUID ACTUATED OR RETARDED
14	.Fluid and non-fluid actuators
15	.Compulsory cut-off after flow period
16	..Serial main line cut-off and manual valves (e.g., hydraulic "fuses")
17	...Interconnected motion
18	....Manual and pilot valves
19	..Auxiliary pilot valve overrides a first pilot valve
20	..Forced return of actuator to cut-off position
21	..Actuator connection released on opening of cut-off valve
22	..Control fluid released into closed build-up chamber
23	..Dashpot interconnects actuator and valve
24	.Venturi or line flow effect assisted
25	.Pilot or servo type motor
26	..Alternative pressure sources or pilot valve
27	..Servo failure responsive control of main valve
28	..Fluid actuated pilot valve
29	...With additional pilot valve control
30.01	..Electrically actuated pilot valve
30.02	...Main valve biased closed by fluid pressure
30.03	....Venting passage within movable main valve
30.04	.....Pilot valve movably mounted within or around main valve
30.05	....Fluid pressure sole means for biasing valve closed
31	..Double or oppositely acting motor units
32	..Latched pilot valve
33	..Choked pressure type servo motor
34	...With reverse flow prevenging (nonsiphoning)
35	...Variable choke passage according to valve position
36	...With separate dashpot or choked fluid retarding chamber
37	...With choke or restrictor in main line
38	...Pilot valve seated in motor or valve element
39	....Controls inlet to choke chamber
40	....Tilting pilot valve
41	...Remote pilot valve actuation
42	...Adjustable opening limit for main valve
43	...Main valve biased open by line pressure
44	....Differential reaction surface for line pressure
45	.....Diaphragm or bellows surface
46	....Diaphragm or bellows motor element
47	...With separate dashpot or choked fluid retarder
48	.Dashpot or fluid controlled retarder or timer
49	..Latch or trip releasing
50	..Line pressure connected dashpot or choke chamber
51	...With choke by-pass or relief means
52	...Chamber fills on closing of main valve
53	..Line connected open accumulating chamber
54	..Closed fluid circuit dashpot or choke chamber
55	..With choke by-pass or relief means
56	.Plural operations (e.g., lifting and rotating rotary valve)
57	.Fluid link or column actuator
58	.With mechanical movement between actuator and valve
59	.Rotary or oscillatory motor
60	.With adjustable limit stop for actuator
61	.Flexible wall expansible chamber reciprocating valve actuator
61.1	..Flexible wall valves fluid
61.2	..Coaxial actuator, seat and valve
61.3	...Valve between coaxial spring biasing means and actuator
61.4	...Coaxial spring biasing means between valve and actuator
61.5	...Actuator wall between valve and coaxial spring biasing means
62	.Piston type expansible chamber reciprocating valve actuator
63	..Unitary piston and valve
63.4	..Lost motion, abutment or resilient connection between actuator and valve
63.5	..Coaxial actuator, seat and valve
63.6	...Coaxial spring biasing means between valve and actuator
64	WITH NON-FLUID RETARDER
65	PERMANENT OR CONSTANTLY ENERGIZED MAGNET ACTUATOR
66	BIASED TRIP
67	.With second diverse control
68	.Electrical trip actuation
69	..Trip operated on failure of electric power
70	..With electrical resetting means
71	...Rotary electric motor
72	.Weight biased trip
73	.Fluid pressure trip actuation
74	.Mechanical movement trip actuation
75	WITH SNAP ACTION
76	IMPACT TYPE ACTUATOR
77	LOST MOTION BETWEEN ACTUATOR AND VALVE
78	.Lever
79	.Overload release
80	..Elastic
81	..Slip coupling between actuator and valve
82	.Check valve with external opening and closing means
83	..Spring
84	VALVE HEAD MOVABLY CONNECTED FOR ACCOMMODATION TO SEAT
85	.With yieldable connection
86	.With universal connection
87	.With single plane swing pivoted connection
88	.Rotatable only
89	WITH MEANS FOR BLOCKING OR DISABLING ACTUATOR
89.5	.Actuator, or blocking means, includes flow path joint
90	.Attachments
91	..Requiring modification of valve
92	..Acting on valve limit stop
93	...Mounted on valve actuator
94	.Fluid pressure biased latch
95	.Released by non-valving actuator motion
96	..Linear reciprocation of rotary handle

WITH MEANS FOR BLOCKING OR DISABLING ACTUATOR
.Released by non-valving actuator motion
..Linear reciprocation of rotary handle
97 ...Latch connects actuator to body through head
98 ..Pivoted handle
99 ...With spring
100 ..Rotation of reciprocating handle
101 .Latch manipulator mounted on handle or stem
102 ..Constrained linear motion
103 ...With pivoted latch
104 ...With latch rigidly associated with manipulator
105 ....Latch lug extends transversely to axis of manipulator
106 ...With transversely movable latch
107 ..With pivoted latch
108 ...Resilient latch and manipulator
109 ...With spring
110 ..With reciprocating latch
111 .Latch manipulator mounted on valve body
112 ..Set screw
113 ..Constrained linear motion of latch with rigidly associated manipulator
114 ..With pivoted latch
115 ...Resilient latch and manipulator
116 ...With spring
117 WITH RESTRICTOR IN PARALLEL TO MAIN VALVE
118 WITH MATERIAL GUIDE OR RESTRICTOR
119 .Aspirated stem drain
120 .Movable or resilient guide or restrictor
121 ..Adjustable guide or restrictor
122 ...Tapered metering plug
123 .Valve at point of greatest restriction
124 ..Venturi restrictor
125 .Drop forming restrictor
126 .Spiral guide or spiral restrictor
127 .Baffle or zigzag flow restrictor
128 WITH DETACHABLE ACTUATOR AND MEANS TO PREVENT LEAKAGE WHEN ACTUATOR IS DETACHED
129.01 ELECTRICALLY ACTUATED VALVE
129.02 .With means to bias valve open
129.03 .With nonelectrical actuator
129.04 .Remote or follow-up control system for electrical actuator
129.05 .Having means to produce digital pulses
129.06 .Having element dimensionally responsive to field
129.07 .Balanced valve
129.08 .Having means to produce proportional flow
129.09 .Solenoid having plural coils
129.1 ..Coils have common axis
129.11 .Rotary electric actuator
129.12 ..With limit control
129.13 ..With speed or braking control
129.14 .Freely rotatable ball valve
129.15 .Including solenoid
129.16 ..Having plate-shaped armature
129.17 ..Having diaphragm between coil and opening controlled
129.18 ..With means to adjust stroke of armature
129.19 ..Lost motion between valve and valve actuator
129.2 ..Mechanical movement between valve and solenoid
129.21 ..Coil surrounds valve port or flow line
129.22 ..Solenoid within flow line
142 WITH CORRELATED FLOW PATH
149 .Valve operated by joining flow path sections
149.1 ..Joining motion includes linear valve operating component
149.2 ...Valve rotatably or hingedly mounted
149.3 ...Valve motion is transverse to, or opposed to, the linear component
149.4 ...Joint includes screw thimble
149.5 ...Of rotatable flow path section
149.6 ...Motion opposed by valve spring
149.7 ....Contact only, or friction, joint
149.8 .Valve operated by motion of flow path
149.9 .Flow path joint interlocked with valve or actuator
144 .Tank
145 .Pipe side
146 ..Clamp type coupling
147 .Pipe end (terminal valve)
148 .Pipe coupling or union
150 ..Flexible or expansible
151 ..Non-rotatable conduit coupling
152 ..Valve seat and coupling element removable as a unit
143 .With mounting or support
153 .With particular outlet or inlet
154 ..Fluid deflecting means at outlet
155 ..Nozzle or spout
156 ...With receptacle accommodating feature
157 WITH MEANS TO INCREASE HEAD AND SEAT CONTACT PRESSURE
158 .With positive reduction
159 ..Seat pressed to valve
160 ..Rotary valve
161 ...Independent actuation
162 ...Cam or wedge
163 ....Encased
164 ...Screw
165 ....Non-reciprocating
166 .....With slip coupling
167 ..Bifaced
168 ...Screw
169 ...Toggle
170 .Seat pressed to valve
171 ..Packing pressed by gland
172 ..Fluid pressure
173 ...Butterfly valve
174 ..Spring
175 .Fluid pressure
176 .Spring
177 ..Pivoted valve
178 ...Bifaced
179 ...Terminal
180 ..Rotary valve
181 ...Plug
182 ....Expanding
183 ....Encased
184 .....At actuator end
185 ...Spring in fluid
186 ..Piston
187 .Separate actuators or actuator motion
188 ..Rotary valve
189 ..Piston with expansible packing
190 .Piston
191 ..Packing expands with closing
192 .Rotary valve
193 .Gate valve
194 ..Screw sole actuator of expander and valve
195 ..Bifaced
196 ...In both closed and open positions
197 ...Faces pressed by subsequently movable expander
198 ....With second expander
199 ....Face element directly contacts casing
200 ...Carried expander contacts valve casing
201 ....Pivoting expander
202 ...Faces or carrier contact stationary expander

WITH MEANS TO INCREASE HEAD AND SEAT CONTACT PRESSURE
.Gate valve
203 ..Cam or wedge
204 ...Moves with respect to head and seat
205 WITH SELECTIVE FLOW REGULATION
206 .Different sized bores in valve head
207 ..Rotary plug
208 .Rotary
209 ..Plug
210 SEQUENTIAL OPENING OR CLOSING OF SERIAL PORTS IN SINGLE FLOW LINE (E.G., ANTI-SCORING)
211 SERIAL ALTERNATELY CLOSED PORTS
212 RELATIVELY MOVABLE VALVE ELEMENTS FORM SINGLE PORT CLOSURE (E.G., IRIS DIAPHRAGM)
213 MECHANICAL MOVEMENT ACTUATOR
214 .Particularly packed or sealed
215 .Plural motions of valve
216 ..Screw threads in flow path
217 ..Valve head between actuator and screw
218 ..Encased
219 ...Threadlessly coupled to screw
220 ....Coupling socket in screw
221 ...Threads in removable sleeve
222 ....Sleeve removably in bonnet
223 ....Sleeve is bonnet
224 ....Sleeve flange mounted between body and bonnet
225 ..Threads in removable sleeve
226 ..Biased
227 ...Spring
228 .With pivoted valves
229 .Plural dissimilar mechanical movements
230 .Ratchet
231 .Lever
232 ..Train (plural serial)
233 ..Leverage variable during operation
234 ..Adjustable leverage
235 ..Swiveled
236 ..Biased
237 ...Sliding contact
238 ....Spring
239 ......Spring co-axial with valve arm
240 ......Spring stop on valve stem
241 ......Spring abuts valve stem guide
242 ...Spring
243 ....Co-acts with lever
244 ....Co-axial with valve stem
245 .....Spring stop on valve stem
246 .....Spring abuts valve stem guide
247 ...Weight
248 .Gear
249 ..Mutilated or Geneva gearing
249.5 ..Worm type
250 ..Rectilinear rack
250.5 ..Mating segments
251 .Cam
252 ..Co-axial or parallel axes
253 ...Biased
254 ....Bi-directional
255 .....Non-reciprocating
256 ....Encased
257 ..Encased with seal
258 ...Bi-directional
259 ...Cam is finger-like extension
260 ...Overhung crank type
261 ...Center crank type
262 ..Biased
263 ...Spring
264 .Screw
265 ..Plural thread
266 ..Non-reciprocating actuator
267 ...Internal thread
268 ....Inverted cup-shape
269 .....Separable actuator bushing
270 ...Removable guide
271 ....Resiliently mounted actuator
272 ...Biased
273 ..Internal thread
274 ..Encased
275 ...Biased
276 ....Spring
277 ..Biased
278 ...Spring
279 .Linkage
280 ..Toggle
281 BALANCED VALVES
282 .Reciprocating
283 .Rotary
284 LIMIT STOP
285 .Adjustable
286 .Rotary valve
287 ..Stop element on head
288 ..Stop element on actuator
289 VALVE ACTUABLE FROM PLURAL POSITIONS
290 PLURAL SELECTIVE NEUTRAL POSITIONS FOR VALVE OR ACTUATOR
291 DETACHABLE ACTUATOR
292 .Rotary valve
293 EXTENSION FOR ACTUATOR
294 FLEXIBLE ACTUATOR (E.G., BOWDEN WIRE; CHAIN)
295 PEDAL ACTUATOR
296 PLURAL MOTIONS OF ACTUATOR
297 WITH FRICTION DETENT
298 PIVOTED VALVES
299 .Terminal
300 ..Gate
301 .Gate
302 ..Bifaced
303 .Biased
304 ROTARY VALVES
305 .Butterfly
306 ..Head and/or seat packing
307 ...Adjustable
308 ..Head and stem connections
309 .Plug
310 ..Axial and radial bore
311 ...Lateral inlet and outlet
312 ..Retainer at actuator end
313 .Biased
314 .Seats and/or interface seals
315 ..Spherical head
316 ..Replaceable
317 ...Deformable material
318 RECIPROCATING VALVE
319 .Push or pull operator
320 ..Biased
321 ...Spring
322 ....Spring stop on valve stem
323 ....Spring abuts valve stem guide
324 .Piston
325 ..With internal flow passage
326 .Gate
327 ..Bifaced
328 ..Seats
329 ..Bodies
330 .Actuator controlled stem seal
331 .Diaphragm
332 .Diverse material seal at valve interface
333 .Particular head and seat cooperation
334 ..Elastic deformation
335.1 HERMETIC FLEXIBLE WALL SEAL FOR ACTUATOR
335.2 .Diaphragm
335.3 .Bellows
336 BIASED VALVE
337 .Springs and spring retainers
338 .Weight biased
339 VALVE ACTUATOR EXTENDING THROUGH FLUID INLET OR OUTLET
340 VALVE ACTUATOR SURROUNDING PIPE, INLET OR OUTLET

341	VALVE ACTUATOR IS VALVE CASING OR EXTENSION THEREOF
342	.Jointed or flexible wall
343	.Sleeve valve
344	..Flow passage in sleeve
345	..Rotary
346	.Plural motions of valve
347	.Reciprocating valve
348	.Biased valve
349	VALVE ACTUATOR IS INLET OR OUTLET
350	.Detachable tip
351	.Plural motions of valve
352	.Rotary
353	.Reciprocating spout
354	.Biased valve
355	WITH ACTUATION LUBRICATING MEANS
356	VALVE
357	.Removable seat engaging element
358	.Reinforced flexible material
359	.Seats
360	..Removable
361	...Mounted between casing sections
362	...Compression or tension retained
363	...With seal
364	..Head engaging gasket
365	..Retained by seat deformation
366	.Bodies
367	..Sectional
368	.Materials
369	MISCELLANEOUS
	###############################
	CROSS-REFERENCE ART COLLECTIONS
	###############################
900	VALVES WITH O-RINGS
901	CURTAIN TYPE VALVES
902	SPRINGS EMPLOYED AS VALVES
903	NEEDLE VALVES
904	SNAP FIT PLUG VALVES

1	MISCELLANEOUS
2	FIRE-EXTINGUISHING
3	.Foam or gas phase containing
4	.Gas generative, chemically
5	..Dry, combustion type
6	..Low temperature chemically interreactive
6.5	...Foam-stabilizant or colloid-stabilizant containing
7	..Carbonates or ammonium salts containing or pyrolytic
8	.Volatile or gas charged liquids containing
8.05	.Foam-stabilizant or colloid-stabilizant containing
601	FIRE RETARDING
602	.Having disparate function
603	.For living matter
604	.Material physically quantified
605	.Containing gas
606	.Intumescent
607	.For wood or cellulosic material other than textile
608	.For textile
609	.For solid synthetic polymer and reactants thereof
610	.Dispersion or colloidal system
611	..For dispersion or collodial system
8.3	PREVENTING CONTAMINANT DEPOSITS IN PETROLEUM OIL CONDUITS
8.51	EARTH BORING
8.511	.Emulsions
8.512	.Materials for controlling lost circulation
8.513	.Aqueous or gaseous fluids, containing organic components, other than emulsions, functioning other than to control lost circulation
8.514	.Aqueous or gaseous fluids containing organic and inorganic components
8.515	.Nonaqueous liquid (e.g., oil base drilling fluids)
8.516	.Materials for controlling lost circulation
8.551	WELL TREATING
8.552	.Well cleaning (including removal or prevention)
8.553	.Acidizing or formation destroying by chemical reaction
8.554	.Water flooding or treatment of the formation with surfactant
8.555	.Anticorrosion
8.57	LEATHER OR FUR TREATING
8.6	TEXTILE TREATING
8.7	.Organic sulphoxy compound containing
8.75	..Organic amine or amide containing
8.8	.Organic amine or amide containing
8.9	.Ether group containing
9	LUBRICANTS OR SEPARATANTS FOR MOVING SOLID SURFACES AND MISCELLANEOUS MINERAL OIL COMPOSITIONS
10	.Packages or heterogeneous arrangements
11	.Lubricating and foreign functions
12	.Rigid lubricants and bearings containing fluent lubricants
12.2	..Impregnated
12.4	..With fibrous components
12.6	...Organic fibrous components
13	.With fibrous carriers
14	..Organic carrier components
15	.Gas charged
16	.Solid-phase non-soap-forming inorganic or non-low-fusing components
17	..Soaps, organic-acid salts or soap-forming components containing
18	...Inorganic compounds or elements containing (except water)
19	....Free solid-phase metal containing
20	....Carbon, silica, or silicates and solid S, Se, or Te containing
21	....Carbon, silica, or silicates containing
22	.....Graphite or carbon containing
23	......With other inorganic components (except water)
24	....Solid-phase S, Se, or Te containing
25	..Inorganic compounds or elements containing (except water)
26	...Free solid-phase metal containing
27	...Carbon, silica, or silicates and solids S, Se, or TC containing
28	...Carbon, silica, or silicates containing
29	....Graphite or carbon containing
30	.....With other inorganic components (except water)
31	...Solid-phase S, Se, or Te containing
32	.Soaps, or organic-acid salts containing
32.5	..Phosphorus-containing - organic-acid salts containing
32.7 R	...S, Se, or Te containing
32.7 E	.....Phosphosulfurized alcohols, phenols, thio-alcohols and thiophenols
32.7 HC	.....Phosphosulfurized hydrocarbons
33	..Sulpho-organic-acid salts containing
33.2	...With salts or other organic acids
33.3	....With rubber, solid terpenes or derivatives or other non-hydrocarbons
33.4	...With rubber, solid terpenes or derivatives or other non-hydrocarbons
33.6	..Salts of organic-acids of other than C, H, and O containing
34	..Ammonia or nitrogen-base organic-acid salts containing
34.7	...With rubber, solid terpenes or derivatives or other non-hydrocarbons
35	..Aluminum or heavy-metal organic-acid salts containing
36	...With alkaline-earth or alkali-metal organic-acid salts
37	...With rubber, solid terpenes or derivatives or other non-hydrocarbons
37.2	....Inorganic components, rubber or compounds of other than C, H, and O
37.5	....Aromatic- or carbocyclic-acid salts containing
37.7	...Aromatic- or carbocyclic-acid salts containing
38	..Alkaline-earth or alkali-metal organic-acid salts containing
39	...Alkaline-earth metal organic-acid salts containing
40	....With alkali-metal organic-acid salts
40.5	....With rubber, solid terpenes or derivatives or other non-hydrocarbons
40.7	.....Inorganic components, rubber, or compounds of other than C, H, and O
41	...Alkali-metal organic-acid salts containing
42	....With rubber, solid terpenes or derivatives or other non-hydrocarbons
42.1	.....Inorganic components, rubber or compounds of other than C, H, and O
42.4	..With rubber, solid terpenes or derivatives or other non-hydrocarbons

	LUBRICANTS OR SEPARATANTS FOR MOVING SOLID SURFACES AND MISCELLANEOUS MINERAL OIL COMPOSITIONS
42.7	.Metal or base, linked by O, S, Se, or Te to carbon of organic radical compounds containing
43	.Rubber, solid terpenes or derivatives containing
45	.S, Se, or Te, organic compounds or solutions containing
46.3	..Inorganic components or elements (except S) or compounds of other than C, H, O, S, N, and halogen containing
46.4	...Metals or matal compounds containing
46.6	...Phosphorus or phosphorus compounds containing
46.7	....Se, Te, N, Halogen or other than C, H, O, S, and P containing
47	..Nitrogen compounds containing
47.5	...Oxygen, halogen or other than C, H, S, and N compounds containing
48.2	..Oxygen compounds containing
48.4	...Halogen or other than C, H, S, and O compounds containing
48.6	...Carboxyl compounds containing
48.8	..Halogen compounds containing
49	.Aqueous or inorganic components
49.3	..Aqueous
49.5	...Emulsions or colloid dispersions containing
49.6	.Compounds of other than C, H, O, N, and halogen containing
49.7	..Metal containing
49.8	..Phosphorus containing
49.9	...Nitrogen, halogen or other than C, H, O, and P containing
50	.Nitrogen containing
51	..Oxygen halogen or other than C, H, and N containing
51.5 R	...Oxygen containing
51.5 A	.....Amine-carboxylic acid or anhydride reaction products or mixtures
52 R	.Oxygen containing
52 A	...Polyoxyalkylene compounds
54	..Halogen or other than C, H, and O containing
54.6	...Carboxyl containing
55	..Artificially oxidized hydrocarbons containing
56 R	..Carboxylic acids or esters containing
56 S	...."Synthetic" ester is lube base or is present in substantial amounts
56 D	....Maleic, succinic or fumaric acids, anhydrides or their esters
57	...Carbocyclic or non-aliphatic compounds containing
58	.Halogen containing
60	PHYSICAL SEPARATION AGENTS
61	.Froth-flotation or differential adherence
62	HEAT OR SOUND INSULATING
62.2	ELECTROLYTES FOR ELECTRICAL DEVICES (E.G., RECTIFIER, CONDENSER)
62.3 R	BARRIER LAYER DEVICE COMPOSITIONS
62.3 T	..Thermoelectric
62.3 Q	..Organic
62.3 E	..Free element containing
62.3 S	...Selenium or tellurium
62.3 GA	..Group III element containing binary compound, e.g., Ga, As
62.3 ZB	..Groups II and V elements containing binary compound, e.g., zinc, bismuth
62.3 ZT	..Groups II and VI elements containing binary compound, e.g., Zn, Te
62.3 V	..Group VI element-containing
62.3 BT	...Containing Group IV element and oxygen, e.g., barium, titanium III oxide
62.3 C	..Binary alloy or carbide, e.g., Al, In, LiC
62.51	MAGNETIC
62.52	.Flaw detection or magnetic clutch
62.53	.With wax, bitumen, resin or gum
62.54	..Synthetic resin
62.55	.Free metal or alloy containing
62.56	.Iron-oxygen compound containing
62.57	..With scandium, yttrium, gallium, rare earth or actinide
62.58	..With boron, aluminum, thallium or indium
62.59	..With titanium, zirconium, silicon, hafnium, germanium or tin
62.6	..With Group I metal
62.61	...Lithium
62.62	..With Group II metal or lead
62.63	...Calcium, barium, strontium or lead
62.64	...Magnesium
62.9	PIEZOELECTRIC
567	DEFINED LIQUID DIELECTRIC DISPERSED IN DEFINED WEB OR SHEET
570	FLUENT DIELECTRIC
571	.Gaseous or gas-containing
572	.Metal- or insoluble component-containing
573	.Si-containing
574	.B-, P-, S-, Se-, or Te-containing
575	.N-containing
576	..O in N compound
577	...Nitro or nitroso compound
578	.O-containing
579	..Carboxylic acid ester
580	..Halogen-containing
581	.Halogenated polycyclic compound-containing
67	VAPORIZATION, OR EXPANSION, REFRIGERATION OR HEAT OR ENERGY EXCHANGE
68	.With lubricants, or warning, stabilizing or anti-corrosion agents or persistent gases
69	.With low-volatile solvent or absorbent
70	FROST-PREVENTING, ICE-THAWING, THERMOSTATIC, THERMOPHORIC, OR CRYOGENIC
71	HEAT-EXCHANGE, LOW-FREEZING OR POUR POINT, OR HIGH BOILING COMPOSITIONS
72	.With leak-stopping agents
73	.Organic components
74	..Metal compounds or inorganic components (except water)
75	...Organic compounds of nonmetals other than C, H, and O
76	...Carboxylic organic compounds containing
77	..Organic compounds of nonmetals other than C, H, and O
78.1	...Organic compounds of nonmetals other than C, H, O and N
78.3	....Organic Si containing compounds
78.5	....Organic P containing compounds
79	..Carboxylic organic compounds containing
79.1	ETCHING OR BRIGHTENING COMPOSITIONS
79.2	.Inorganic acid containing
79.3	..Fluorine compound containing
79.4	..With organic material
79.5	.Alkali metal hydroxide containing
80	DESCALING AGENT CONTAINING
81	.Deoxidant or free-metal containing
82	.Plant or organic material containing
83	..Tannin, bark, or bark extract containing

DESCALING AGENT CONTAINING
.Plant or organic material containing
..Tannin, bark, or bark extract containing
84 ...With inorganic compound or element (except water)
85 ....Inorganic matter other than alkali-metal hydroxides and carbonates and water
86 ..With inorganic compound or element (except water)
87 ...Inorganic matter other than alkali-metal hydroxides and carbonates and water
88 SWEEPING OR DUST OR PARTICLE ADHERENT
89.1 DETERGENTS (FOR USE ON SOLID MATERIALS)
90 .Packages or heterogeneous arrangements
91 ..Impregnated or coated with detergents
92 ..Separate soap containing and non-soap zones
93 ...Wrapped or encased soaps
94 .With chemical bleachant, oxidant, or reductant
95 ..Oxidant containing
96 ...Soap (water-soluble fatty acid or rosin) containing
97 ....Water-soluble inorganic B, Si, or P compound containing
98 ....Ammonia, amine, or nitrogen base compound containing (except proteins)
99 ...Water-soluble inorganic B, Si or P compound containing
100 ...Acidic
101 ....Nitric acid or aqua regia containing
102 ...Ammonia, amine, or nitrogen base compound containing (except proteins)
103 ...Alkaline
104 ...Solvent (physical or chemical) containing
105 ..Reductant containing
106 .Antiseptic, insecticide, or biocide containing
107 ..Soap (water soluble fatty acid or rosin) containing
108 .Soap (water-soluble fatty acid or rosin) containing
109 ..Water-soluble inorganic B, Si, or P compound containing
110 ...Ammonia, amine, or nitrogen base compound containing (except proteins)
111 ....Physical non-water solvent containing
112 .....Water insoluble abradant, wax or filler containing
113 ....Water-insoluble abradant, wax or filler containing
114 ...Physical non-water solvent containing
115 ....Water-insoluble abradant, wax or filler containing
116 ...Water-insoluble abradant, wax or filler containing
117 ..Ammonia, amine, or nitrogen base compound containing (except proteins)
118 ...Physical non-water solvent containing
119 ....Water-insoluble abradant, wax or filler containing
120 ...Water-insoluble abradant, wax or filler containing
121 ..Organic sulpho-compound containing
122 ..Physical non-water solvent containing
123 ...Water-insoluble abradant, wax or filler containing
124 ....Organic and inorganic type
125 ....Organic type
126 ...Hydrocarbon or halohydrocarbon containing
127 ....Non-hydrocarbon non-soap organic compound containing
128 ..Water-insoluble abradant, wax or filler containing
129 ...Organic and inorganic type
130 ...Organic type
131 ...Inorganic type
132 ..With other organic, plant, or animal matter or compound
133 ..With inorganic compound or element (except alkali-metal hydroxides and carbonates and water)
134 ..Shapes or structures
135 .Water-soluble inorganic B, Si or P compound containing
136 ..Acidic
523 ..Nitrogen base containing (except protein)
524 ...Heterocyclic
525 ...Amine or amide
526 ....Sulfur or phosphorus containing
527 ....Soluble carboxylic acid or salt
528 ....Quaternary or amine oxide
529 ....Hydroxy
530 ..Organic sulfoxy
531 ...Organic sulfate
532 ....Oxy
533 ....With acyclic sulfonate
534 ....With aromatic sulfonate
535 ...Aliphatic sulfonate
536 ....Unsaturated
537 .....With aromatic sulfonate
538 ....Non-oxo carboxylic
539 ...Aromatic sulfonate
540 ....With non-ionic wetting agent or fatty alcohol
139 ..Physical non-water solvent containing
140 ..Water-insoluble abradant, wax or filler containing
141 .Water-soluble cyanides or cyanates containing
142 .Acidic
143 ..Physical non-water solvent containing
144 ...Water-insoluble abradant, wax or filler containing
145 ..Water-insoluble abradant, wax or filler containing
146 ..With corrosion inhibitants
147 ...Compounds of elements other than C, H, O, N, S, Cl, Na, and K containing
148 ...Organic nitrogen compound containing
149 ....Thio organic compound containing
150 .....Thiazole nucleus containing
151 ...Organic sulphur compound containing
541 .Nitrogen base containing (except protein)
542 ..Heterocyclic
543 ...Optical bleach
544 ..Amine or amide
545 ...Sulfur or phosphorus containing
546 ...Soluble carboxylic acid or salt
547 ...Quaternary or amine oxide
548 ...Hydroxy
153 ..Physical non-water solvent containing
154 ...Water-insoluble abradant, wax or filler containing
155 ..Water-insoluble abradant, wax or filler containing
156 .Alkaline
157 ..Gas-generative
158 ..Physical non-water solvent containing
159 ...Water-insoluble abradant, wax or filler containing
160 ..Water-insoluble abradant, wax or filler containing

DETERGENTS (FOR USE ON SOLID MATERIALS)
549 .Organic sulfoxy
550 ..Organic sulfate
551 ...Oxy
552 ...With acyclic sulfonate
553 ...With aromatic sulfonate
554 ..Aliphatic sulfonate
555 ...Unsaturated
556 ....With aromatic sulfonate
557 ...Non-oxo carboxylic
558 ..Aromatic sulfonate
559 ...With non-ionic wetting agent or fatty alcohol
162 .Physical or chemical non-water solvent containing
163 ..Abradant, wax, cellulose ester, inorganic solid or filler containing
164 ...With oxygen organic compounds
165 ....With organic compounds of other than C, H, and O
166 .....With hydrocarbon solvents
167 ....With hydrocarbon solvents
168 .....Wax or cellulose-ester and abradant, inorganic solid or other filling containing
169 .....Wax or cellulose-ester containing
170 ..Oxygen organic compound containing
171 ...Organic compounds of other than C, H, and O containing
172 ..Non-hydrocarbon substances containing
173 .Aqueous
174 .Shapes or structures
174.11 .Perfume containing
174.12 .Enzyme containing
174.13 .Coated or encapsulated particle or liquid containing (other than spray dried detergents)
174.14 .Alkali metal inorganic carbonate containing
174.15 .Organo-silicon compound containing
174.16 .Organo-phosphorus compound containing
174.17 .Carbohydrate moiety containing
174.18 ..Carboxyl group containing
174.19 .Nonpolymeric compound having at least two free carboxyl groups containing
174.21 .Polyoxyalkylene compound containing
174.22 ..Two or more polyoxyalkylene compounds containing
174.23 .Polymer containing
174.24 ..Carboxylic acid anhydride, free carboxyl group, or salt thereof containing
174.25 .Water-insoluble inorganic compound containing
175 WATER-SOFTENING OR PURIFYING OR SCALE-INHIBITING AGENTS
176 .Packages or heterogeneous arrangements
178 .Deoxidant or free-metal containing
179 .Water-insoluble base-exchange agent containing
180 .Plant or organic material containing
181 ..With inorganic matter other than alkali-metal hydroxides and carbonates and water
181.1 GETTERS OR GAS OR VAPOR GENERATING MATERIALS FOR ELECTRIC LAMPS, ELECTRIC SPACE DISCHARGE DEVICES AND SIMILAR DEVICES
181.2 .Plural getter and/or gas or vapor generating materials
181.3 .Reactive compositions
181.4 ..Containing magnesium, alkali-metal or alkaline-earth metal or compound thereof
181.5 .Gaseous getters
181.6 .Metal or metal compound containing
181.7 ..Magnesium, alkali-metal or alkaline-earth metal
194 HUMIDOSTATIC, WATER REMOVIVE, BINDIVE, OR EMISSIVE

****
CLASS 502, CATALYST, SOLID..
SORBENT OR SUPPORT THEREFOR,
PRODUCT OR PROCESS OF.......
MAKING. CLASS 502 IS TO BE..
CONSIDERED AS OCCUPYING.....
THIS POSITION IN THE CLASS..
252 SCHEDULE FOR PURPOSES...
OF CLASSIFICATION OF A......
COMPOSITION HAVING A ....
DISCLOSED OR CLAIMED........
FUNCTION OR PROPERTY........
PROVIDED FOR IN CLASS 252...
IN ADDITION TO A CATALYTIC..
OR SORPTURE USE. ....
****

478 X-RAY OR NEUTRON SHIELD
500 ELECTRICALLY CONDUCTIVE OR EMISSIVE COMPOSITIONS
501.1 .Light sensitive
502 .Elemental carbon containing
503 ..With free metal
504 ..With carbide
505 ..With radioactive material
506 ..With metal compound
507 ...Titanium or zirconium compound
508 ...Aluminum compound
509 ...Magnesium, alkaline earth metal or rare earth metal compound
510 ..With organic component
511 ...Resin, rubber or derivative thereof containing
512 .Free metal containing
513 ..Iron group metal (Iron, Cobalt, Nickel)
514 ..Noble metal (Gold, Silver, Ruthenium, Rhodium, Palladium, Osmium, Iridium, Platinum)
515 ..Tungsten
516 .Carbide containing
517 .Radioactive material containing
518 .Metal compound containing
519 ..Iron group compound
520 ..Titanium or zirconium compound
521 ..Magnesium, alkaline earth metal or rare earth metal compound
492 INCANDESCENT MANTLE COMPOSITIONS
299.01 LIQUID CRYSTAL COMPOSITIONS
299.1 .Containing pleochroic dye
299.2 .Containing dopant salt
299.3 .Containing charge-transfer agents
299.4 .Containing nonchiral aligning agents
299.5 .Containing nonchiral additive having no specified mesophase
299.6 .Containing nonsteryl liquid crystalline compound of specified structure
299.61 ..Including heterocyclic ring
299.62 ..Including fused or bridged rings
299.63 ..Including fully saturated ring
299.64 ..Aryl ester of aryl acid having three benzene rings
299.65 ...Benzene rings linked by direct bond
299.66 ..Benzene rings linked by direct bond
299.67 ..Phenyl benzoate derivative
299.68 ..Including benzene rings bonded through azo, azoxy, or azomethine linkage
299.7 .Cholesteric liquid crystal composition containing a sterol derivative
582 LIGHT TRANSMISSION MODIFYING COMPOSITIONS
583 .Modification caused by energy other than light
584 .Inorganic crystalline solid
585 .Producing polarized light
586 .Displaying color change
587 .Infrared

	LIGHT TRANSMISSION MODIFYING COMPOSITIONS
588	.Ultraviolet
589	..Organic material
625	RADIOACTIVE COMPOSITIONS
626	.Treating radioactively contaminated material
627	..Reprocessing nuclear fuels
628	..By fixation in stable solid media
629	...Media is glass or ceramic
630	..Treating gas
631	..Treating liquid material
632	...By incineration, calcination, or evaporation
633	..For disposal by storage in confined space
634	.In form of sol solution or gel
635	..Including production of solid particles by chemical reaction
636	.Nuclear reactor fuel
637	..Actinide having nonactinide component
638	...Oxide component
639	...Carbon containing component
640	...Free metal or metal compound component
641	..Actinide nitrides only
642	..Actinide carbides only
643	..Actinide oxides only
644	.As a source of radiation or heat
645	..For tracing, tagging, or testing
646	.Luminescent
647	..Laser
301.16	ORGANIC LUMINESCENT MATERIAL CONTAINING COMPOSITIONS
301.17	.Scintillating or lasing compositions
301.18	..Heavy metal containing
301.19	.Inspection penetrant compositions
301.21	.Optical brightening compositions
301.22	..Heterocyclic compounds having an intercyclic acyclic methine linkage
301.23	...Triazines
301.24	...Thiazoles or oxazoles
301.25	..Azine containing
301.26	..Six-membered ring having one hetero-N-atom
301.27	..Azole containing
301.28	...Thiazoles or oxazoles
301.29	...Tri- or -tetrazoles
301.31	..Five-membered ring having four carbon atoms and one nitrogen atom
301.32	..Hetero-S-atom or hetero-O-atom containing
301.33	.With inorganic luminescent material
301.34	.Natural resin, cellulose or derivatives containing
301.35	.Synthetic resin containing
301.36	INORGANIC LUMINESCENT COMPOSITIONS WITH ORGANIC NONLUMINESCENT MATERIAL
301.4 R	INORGANIC LUMINESCENT COMPOSITIONS
301.4 S	..Sulfur containing
301.4 P	..Phosphorus containing
301.4 F	..Group IV element containing
301.4 H	..Compositions containing halogen, e.g., halides and oxyhalides
301.5	.Tungsten containing
301.6 R	.Zinc or cadmium containing
301.6 S	...Sulfur containing
301.6 P	...Phosphorus containing
301.6 F	...Group IV element containing
700	CHEMILUMINESCENT
182.1	HAVING UTILITY AS A REACTIVE MATERIAL IN AN ELECTROCHEMICAL CELL, E.G., BATTERY, ETC.
184	ABSORPTIVE, OR BINDIVE, AND CHEMICALLY YIELDIVE
185	PLUMBIFEROUS SULPHUR BINDANT OR MODIFIANT CONTAINING
186.1	OXIDATIVE BLEACHANT, OXIDANT CONTAINING OR GENERATIVE
186.2	.Composition containing two or more solid materials with defined physical dimensions, e.g., surface areas, volumes, etc., or process of producing said composition
186.21	.Plural oxidants
186.22	..Contains plural peroxides
186.23	...Organic peroxide
186.24	.Contains elemental material devoid of water
186.25	.Composition containing a stabilizer or a product in the form of a surface-modified, impregnated, encapsulated, or surface-coated article; or process of producing said composition
186.26	..Organic peroxide
186.27	..Inorganic peroxide
186.28	...Contains hydrogen peroxide
186.29	....With organic material
186.3	...Contains perborate
186.31	....With organic material
186.32	...Contains Group IA metal peroxide
186.33	..Contains Group VIIB or Group VIII metal or compound thereof
186.34	..Contains organohalogen compound as oxidant
186.35	...Chloroisocyanurate
186.36	..Contains free halogen or oxy-halogen acid type
186.37	...Contains alkaline earth metal
186.38	.Contains activator admixed with inorganic peroxide
186.39	..Contains heterocyclic compound
186.4	...Oxygen heterocycle
186.41	..Hydrogen peroxide
186.42	.Contains organic peroxide
186.43	.Contains inorganic peroxide
186.44	.Contains inorganic nitrogen containing compound
187.1	.Free halogen or oxy-halogen acid type
187.2	..Oxidant contains halogen other than chlorine
187.21	..Chlorine dioxide or monoxide
187.22	...With elemental chlorine
187.23	..Chlorite
187.24	...Hypochlorite
187.25	....Alkali metal hypochlorite
187.26	.....Sodium
187.27	....Alkaline earth metal hypochlorite
187.28	.....Calcium
187.29	......With alkali metal compound
187.3	......With alkaline earth metal compound
187.31	..Chlorate or perchlorate
187.32	..Hypochlorous acid
187.33	..Oxidant contains N-Cl bond
187.34	...Chloroisocyanurate
188.1	REDUCTIVE BLEACHANT, DEOXIDANT, REDUCTANT, OR GENERATIVE
188.2	.Sulfur containing reductant, bleachant, deoxidant, or generative
188.21	..Sulfite
188.22	...Hydrosulfite (dithionite)
188.23	....With organic additive
188.24	.....Contains nitrogen
188.25	.Hydrogen generating
188.26	.Hydride containing
188.27	..Contains Al-H bond
188.28	.Deoxidant or oxygen scavenging
189	CO, S, NEGATIVE ELEMENT, OR ACID, BINDANT CONTAINING
190	.With absorbents
191	.Basis-iron containing
192	.Alkali-metal or alkali-metal compound containing

193 AMMONIA, ALKALI OR BASE, BINDANT CONTAINING
302 COLLOIDS AND POTENTIAL COLLOIDS; CHEMICAL PROCESSES OF MAKING AND BREAKING: APPARATUS RELATED THERETO
303 .Including separations or comminutions by colloid functions
304 .Colloid (polyphase discontinuous dispersion) systems
305 ..Smokes, fogs, or gaseous primary dispersants
306 ..Liquid primary dispersants
307 ...Foams or gaseous primary dispersands
308 ...Organic major dispersants only
309 ....Inorganic major dispersands only
310 ...Water as major dispersant only
311 ....Organic major dispersands only
311.5 .....Bituminous dispersands
312 .....Oil or liquid dispersands
313.1 ....Inorganic major dispersands only
313.2 .....Silica
314 ...Dispersive or manipulative operations
315.01 .Gels, coagulates or dispersands
315.1 ..Organic
315.2 ...Inorganic material coated, impregnated or surface-modified with organic material
315.3 ...Carbohydrate or derivative
315.4 ...Carboxylic acid ester, acid or salt thereof
315.5 ..Metal silicate or clay
315.6 ..Silica
315.7 ..Alumina
318 .Potential dispersants, or dispersands with colloidization inhibitants
319 .Resolving colloids or inhibiting colloidization
320 ..Liquid primary dispersants
321 ...Foams or gaseous primary dispersands
322 ...Adsorbent or solid surface functioning treating substances
323 ....Organic and inorganic agents (except water)
324 ....Inorganic agents (except water)
325 ....Organic agents
326 ...Added nongaseous dissimilar treating substances
327 ....Added dissimilar solvents, bindants or liquid baths
328 ....Resolving aqueous-petroleum or aqueous-hydrocarbon systems
329 .....Organic and inorganic agents (except water)
330 .....Inorganic agents (except water)
331 .....Organic agents
332 ......Organic sulphoxy compound containing
333 ....Petroleum-sulphoxy compound containing
334 ....Organic amine, amide or N-base containing
335 ....Protein or carboxylic compound containing
336 ....Organic amine, amide or N-base containing
337 ....Carbocyclic or non-aliphatic sulphoxy or carboxylic compound containing
338 ....Organic amine, amide or N-base containing
339 ....With non-sulphoxy non-carboxylic non-amine compounds
340 ......Protein or carboxylic compound containing
341 ....Organic amine, amide or N-base containing
342 ....Carbocyclic or non-aliphatic carboxylic compound containing
343 ....With non-carboxylic non-amine compounds
344 ......Organic amine, amide or N-base containing
345 ......With elements other than C, H, and O
346 ...Vaporizing, heating or cooling
347 ....With mechanical treatment
348 ....With added component
349 ...Mechanically
350 .Gas-generating agent containing
351 .Wetting, emulsifying, dispersing or stabilizing agents
352 ..Organic and inorganic agents containing (except water)
353 ..Organic sulphoxy compound containing
354 ...Protein or carboxylic compound containing
355 ...Organic amine, amide or N-base containing
356 ..Protein or carboxylic compound containing
357 ..Organic amine, amide, or N-base containing
358 .Emulsification or liquid dispersant colloidization-inhibiting, emulsion-breaking or liquid dispersant colloids resolving agents
363.5 SOLIDS WITH SOLUTION OR DISPERSION AIDS
364 SOLVENTS
365 ANTI-INGESTIBLE OR DENATURED
366 .Alcohol type
367 SOAPS (ALKALI-METAL SALTS OF WATER-INSOLUBLE FATTY OR ROSIN ACIDS)
368 .Products
369 .Including saponification
370 ..With subsequent operations
372 GASEOUS COMPOSITIONS
373 .Carbon-oxide and hydrogen containing
374 .Nitrogen and hydrogen containing
375 ..Nitrogen from air or elementary nitrogen only and hydrogen from compounds
376 ...Hydrogen from hydrocarbons
377 ..From elementary nitrogen and hydrogen only or purification
378 R EXFOLIATED OR INTUMESCED
378 P ..Perlite
380 PRESERVATIVE AGENTS
381 .Anti-caking, separative or protective coatings or zones
382 ..Foams, liquids or fluids
383 ..Organic and inorganic matter containing
384 ..Organic compound containing
385 ..Inorganic compound or element containing
387 .Anti-corrosion
388 ..Organic compound containing
389.1 ...Component inorganic or organic comprising element other than C,H,O,N,S and halogen
389.2 ....Phosphorus containing
389.21 .....Nitrogen and/or sulfur in phosphorus compound
389.22 ......Pentavalent P except Hn + 2 Pn O(3)n + 1
389.23 .....Pentavalent P except Hn + 2PnO(3)n + 1
389.24 .....Trivalent P (e.g., phosphorus acid, phosphites, etc.)
389.3 ....Silicon containing
389.31 .....Organo silicon
389.32 .....Nitrogen containing (e.g., amino, etc.)
389.4 ....Boron containing
389.41 .....Organo boron
389.5 ....Chromium containing

	PRESERVATIVE AGENTS
	.Anti-corrosion
	..Organic compound containing
	...Component inorganic or organic comprising element other than C,H,O,N,S and halogen
389.51	....Lead containing
389.52	....Zinc or aluminium containing
389.53	....Nickel, iron, cobalt, copper, manganese, mercury or cadmium containing
389.54	....Molybdenum, arsenic, antimony, vanadium, bismuth, tungsten, selenium or tellurium containing
389.61	....Group II A metal containing
389.62	....Alkali metal or NH(4)+ containing
390	...Amine, amide, azo or nitrogen-base radical containing
391	....Sulphur organic compound containing
392	....Oxygen organic compound containing
393	...Phenol or quinone radical containing
394	...Nitrogen organic compound containing
395	...Sulphur organic compound containing
396	...Oxygen organic compound containing
397	.Anti-oxidants or chemical change inhibitants
398	..Plant or animal matters of unknown compositions
399	..Organic compound containing
400.1	...Component inorganic or organic comprising element other than C,H,O,N,S and halogen
400.2	....Phosphorus containing
400.21	.....Nitrogen or sulfur in phosphorus compound
400.22	......Pentavalent P, but not fully oxygenated
400.23	.....Pentavalent P, but not fully oxygenated
400.24	.....Trivalent P (e.g., phosphorous acid, phosphites, etc.)
400.3	....Silicon containing
400.31	.....Organo silicon
400.4	....Boron containing
400.41	.....Organo boron
400.5	....Chromium containing
400.51	....Lead containing
400.52	....Zinc or aluminium containing
400.53	....Nickel, iron, cobalt, copper, manganese, mercury or cadmium containing
400.54	....Molybdenum, arsenic, antimony, vanadium, bismuth, tungsten, selenium or tellurium containing
400.61	...Group II A metal containing
400.62	....Alkali metal or NH(4)+ containing
401	...Amine, amide, azo or nitrogen-base radical containing
402	....Sulphur organic compound containing
403	....Oxygen organic compound containing
404	...Phenol or quinone radical containing
405	...Nitrogen organic compound containing
406	...Sulphur organic compound containing
407	...Oxygen organic compound containing
408.1	NON-REACTIVE ANALYTICAL, TESTING INDICATING COMPOSITIONS
600	RADIATION SENSITIVE
182.11	COMPOSTIONS CONTAINING A SINGLE CHEMICAL REACTANT OR PLURAL NONINTERACTIVE CHEMICAL REACTANTS, I.E., NOT VIS-A-VIS
182.12	.Organic reactant
182.13	..For subsequent solid polymer treatment or preparation, e.g., crosslinking, grafting, curing, hardening, vulcanizing, etc.
182.14	...Reactant contains element other than C, H, O, or N
182.15	....Halogen
182.16	.....Bromine or iodine
182.17	....Sulfur
182.18	...Reactant contains ethylenic group
182.19	....Cyclic anhydride moiety
182.2	...Reactant contains isocyante (-N=C=O) or blocked isocyanate group
182.21	....Two or more reactants containing isocyanate or blocked isocyanate groups
182.22	.....Urethane (-N-C(=O)-O-C-) group
182.23	...Reactant contains oxygen
182.24	....Reactant contains plural hydroxyl groups
182.25	.....Three or more reactants containing plural hydroxyl groups
182.26	.....Reactant contains nitrogen
182.27	.....Reactant contains ether linkage
182.28	....Reactant contains carboxylic acid group or derivative thereof
182.29	..With stabilizer or inhibitor
182.3	..Reactant contains phosphorus, silicon, or sulfur atom, or contains metal-to-carbon bond
182.31	..Reactant contains phenolic, phenolic ether or inorganic phenolate group
182.32	.Inorganic reactant other than sulfur containing
182.33	..Reactant contains heavy metal
182.34	..Reactant contains nitrogen
182.35	..Reactant contains aluminum or phosphorus
183.11	CHEMICALLY INTERACTIVE REACTANTS (VIS-A-VIS)
183.12	.With stabilizer or inhibitor
183.13	.Organic reactant admixed with inorganic reactant
183.14	.Inorganic reactants only
183.15	..Calcium carbide precursors
183.16	..Contains carbonate or bicarbonate
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
950	DOPING AGENT SOURCE MATERIAL
951	.For vapor transport
960	SURFACE FLAW DETECTING COMPOSITIONS
961	STRESS OR CONTACT INDICATORS
962	TEMPERATURE OR THERMAL HISTORY
963	HUMIDITY OR MOISTURE INDICATIORS
964	LEAK DETECTION
965	RETROSPECTIVE PRODUCT IDENTIFICATION (E.G., TAGS AND TRACERS, ETC.)
	******************************
	DIGESTS
	******************************
DIG 1	Nonionic surface active agents
DIG 2	Detergents containing polymers (other than soil suspending polymers)
DIG 3	Detergents containing film forming materials
DIG 4	Sulfoxides in cleaning compositions
DIG 5	Human skin cleaning compositions
DIG 6	Biodegradable detergents
DIG 7	Amphoteric surface active agents
DIG 8	Paint removers and cleaners
DIG 9	Azeotropes
DIG 10	Glass cleaners
DIG 11	Detergents containing chelating agents
DIG 12	Detergents containing enzymes
DIG 13	Shampoos
DIG 14	Liquid detergents
DIG 15	Detergents containing soil-suspending agents
DIG 16	Detergent bars
DIG 17	Organo phosphorus detergents
DIG 18	Activation-platinum
DIG 19	Detergents for spotting

CLASS 254 IMPLEMENTS OR APPARATUS FOR APPLYING PUSHING OR PULLING FORCE

1	MISCELLANEOUS
2 R	HOISTING TRUCK
2 B	..Service station type
2 C	..Platform type
3 R	.Tilting load support
3 B	...Service station type
3 C	...Platform type
4 R	.Cable hoist
4 B	...Service station type
4 C	...Platform type
5 R	.Inclined plane or wedge
5 B	...Service station type
5 C	...Platform type
6 R	.Rack and pinion or segment
6 B	...Service station type
6 C	...Platform type
7 R	.Screw
7 B	...Service station type
7 C	...Platform type
8 R	.Single throw lever
8 B	...Service station type
8 C	...Platform type
9 R	..Toggle
9 B	....Service station type
9 C	....Platform type
10 R	..Parallelogram bars
10 B	....Service station type
10 C	....Platform type
10.5	METALLIC SPRING STRETCHER AND/OR COMPRESSOR (E.G., LEAF, HELICAL, OR COIL SPRINGS)
11	FLOOR JACK TYPE
12	.Rack and pinion or segment
13	.Screw
14	.Step-by-step traveling member
15	.Single-throw lever and bar
16	..Sliding bar
17	.Single throw lever
18	NAIL EXTRACTOR TYPE
19	.Hammer and anvil
20	.Screw
21	.Single throw lever
22	..Lever and pivoted jaw grip
23	..Multiple jaw grip
24	...Cam or wedge actuated
25	..Claw bar
26 R	...Hammer
26 E	.....Extensible fulcrum
27	...Pivoted fulcrum member
28	STAPLE PULLER
28.5	THILL-COUPLING JACK
29 R	PIPE OR ROD JACK
29 A	..Tie rod tensioner
30	.Lifter
31	..Reciprocating clutch
32	AXLE-LUBRICATING JACK
33	CAR JOURNAL BOX LIFTING
34	.Suspended lifter
35	CAR-PUSHER TYPE
36	.Pinch bar
37	..Rail clamping
38	..Pivoted wheel engaging member
39	DOOR BRACE
40	PRINTER'S QUOINS
41	.Screw
42	.Wedge
43	RAIL OR TIE SHAFTER
44	.Single throw lever
45	VEHICLE-BODY LIFTERS
46	.Lever and drum
47	.Cable hoist
48	..Vehicle attached drum
49	.Swinging side bars
50	..Single fixed pivot
50.1	RESILIENT TIRE-CASING SPREADERS
50.2	.Spreader and tire casing relatively movable or rotatably mounted
50.3	.Fluid pressure operated
50.4	.With tire casing support
134.3 R	METHOD OR APPARATUS FOR PLACEMENT OF CONDUCTIVE WIRE
134.3 PA	..Utility pole guide
134.3 CL	..Cable lashing
134.3 FT	..Conduit snakes
134.3 SC	..Submarine cable
134.4	.By fluid pressure differential in conduit (e.g., parachute sucked through conduit)
134.5	.Tractor for pulling wire (e.g., battery-powered)
134.6	..Step-by-step type (e.g., by camming against messenger)
134.7	.Sectional members for fishing
199	PORTABLE IMPLEMENTS OR APPARATUS FOR TENSIONING FLEXIBLE MATERIAL OR FOR EXTRACTING STUMPS OR POLES
200	.Material comprises resilient floor covering (e.g., carpet)
201	..Including fluid or spring driven cylinder
202	..Including force transmitting cable and driven, rotatable, cable engaging drum
203	..Including driven, rotatable, floor covering engaging and pulling drum
204	..Including screw drive
205	..Including rack and pinion, or pinion segment, drive
206	..Including ratchet bar and driving pawl drive
207	...Having plural, disparate, driving pawls
208	..Including rotatable, pulley wheel element and cable
209	..Including force transmitting, hand held and operated, lever
210	...With means attached thereto for sequentially, gripping, shifting, and releasing bar component
211	...With floor covering clamping means attached to lever
212	...Having linearly shifting, guided component attached thereto
213	.Including rotatably driven drum for engaging either material or force transmitting cable
214	..Plural drums or drum with plural distinct sections
215	...Juxtaposed to material or cable at single locus
216	..Having pressure element spaced therefrom to confine material or cable thereagainst
217	..Having ratchet wheel and interengaging pawl for driving drum
218	...Pawl pivots about fixed point on drive handle
219	..Having intermeshing gears for driving drum
220	...Worm and worm wheel
221	..With projections or apertures on drum for engagement with complementary formations on material or cable
222	..With means for preventing or retarding rotation in at least one direction
223	...Ratchet wheel or formation and pawl
224	..With adjustable gripping device for attaching drum to rigid, in situ structure
225	..With material or cable contacting infeed guide
226	...Rotatable pulley wheel element
227	..With ground-engaging support means

PORTABLE IMPLEMENTS OR APPARATUS FOR TENSIONING FLEXIBLE MATERIAL OR FOR EXTRACTING STUMPS OR POLES
228 .Including expansible chamber fluid motor drive
229 .Including worm and worm wheel gear drive
230 .Includng rack and pinion, or pinion segment, drive
231 .Including screw drive
232 ..Plural screws
233 ...Having plural, oppositely shifting, threaded riders
234 ..Having plural, oppositely shifting, threaded riders
235 ..Having ratchet wheel and pawl for driving screw
236 ..Having intermeshing gears for driving screw
237 .Including ratchet bar and driving pawl drive
238 ..Having plural, disparate, driving pawls
239 ...Plural ratchet formations
240 ....Facing opposite directions
241 .Including intermeshing gear drive
242 .Including rotatable, pulley wheel element and cable
243 .Including either force transmitting, hand held and operated lever or animal powered sweep
244 ..Implement or apparatus includes bar component having plural holes and removable cooperating pins selectively engagable by lever
245 ..With means attached thereto for sequentially gripping, shifting, and releasing bar component
246 ..Having linearly shifting, guided component attached thereto
247 ...With ratchet formation and locking pawl for maintaining relative positioning
248 ..With additional, hand held lever pivotally attached thereto for applying pulling force in opposite direction
249 ...Having position locking means between levers
250 ..With camming means thereon, and pressure element spaced therefrom to confine material, or force transmitting cable, thereagainst
251 ..With material, article, or force transmitting cable clamping means attached to and shifting with lever
252 ...Including cooperating, relatively stationary means for intermittently locking material or cable
253 ...Plural clamping means
254 ....Alternately clamping and pulling on material or cable
255 ....Attached by flexible connector
256 ..With material, article, or force transmitting cable engaging means movably attached to and shifting with lever
257 ...Including cooperating, relatively stationary means for intermittently locking material or cable
258 ...Plural, movably attached engaging means
259 ....Alternately engaging and pulling on material or cable
260 ....Attached by flexible connector
261 ..With means pivotally connected to lever and adapted to engage rigid, in situ structure
262 .Including adjustable gripping device for attaching implement or apparatus to rigid, in situ structure
263 .Including ground engaging means for supporting implement or apparatus in plural, vertically spaced positions
84 TRAVERSING JACK
85 .Screw
418 VEHICLE ATTACHED JACK
419 .Semi-trailer landing gear
420 .Attached to trailer tongue
421 .Turntable
422 .Rocking lever
423 .Hydraulic or pneumatic
424 .Screw actuated
425 ..Gear driven
426 .Cable actuated
427 .Rack and pinion
264 APPARATUS FOR HAULING OR HOISTING LOAD, INCLUDING DRIVEN DEVICE WHICH CONTACTS AND PULLS ON CABLE
265 .Device includes driven, flexible, cable contacting belt
266 .Device includes rotatably driven, cable contacting drum
267 ..Having rotational speed governor for generating control impulse to rotation retarding means or drive
268 ..Having mechanism, actuated by changes in position of drum relative to another component of device, for generating control impulse to rotation retarding means or drive
269 ..Having stationary mechanism, actuated by load or other obstruction on and traveling with cable, for generating control impulse to rotation retarding means or drive
270 ..Having cable contacted, supported, or attached mechanism for generating control impulse to retarding means or drive
271 ...With cable contacting component, on or adjacent to circumference of drum, shifted by segment of wound cable
272 ...With cable deflecting or path defining component shifted by cable when tension varies
273 ....Electricity or fluid utilized in transmittal of impulse
274 ..Having mechanism, linked to drum or rotating element of drive, for generating control impulse to rotation retarding means or motor when torque on drum varies
275 ...Electricity utilized in transmittal or impulse
276 ..Having mechanism, linked to drum and actuated by number of drum rotations, for generating control impulse to rotation retarding means or drive
277 ..With fluid or resilient shock absorbing or tension maintaining means attached to, supported by, or supporting guiding structure for cable
278 ..Plural drums or drum with plural distinct sections
279 ...With vehicle for supporting at least one drum

APPARATUS FOR HAULING OR HOISTING LOAD, INCLUDING DRIVEN DEVICE WHICH CONTACTS AND PULLS ON CABLE
.Device includes rotatably driven, cable contacting drum
..Plural drums or drum with plural distinct sections
...With vehicle for supporting at least one drum
280 ....Having rotatable, cable guiding, pulley wheel element spaced from drums
281 .....Element repositionable relative to at least one of the drums
282 ....Drive for at least one drum includes motor of vehicle
283 ...Having rotatable, cable guiding, pulley wheel element spaced from drums
284 ....Element repositionable relative to at least one of the drums
285 .....Plural elements
286 ....Plural elements
287 ...Juxtaposed to cable at single locus
288 ...With means affixing at least one drum to supporting base and allowing movement between drum and base
289 ....Movement engages or disengages drum from drive
290 ...Plural, distinct, drive motors
291 ....Noncompressible fluid
292 ....Electric
293 ...Each drum having plural, distinct drive sources or discrete drive trains
294 ...Having common drive source or mechanically interlinked drive trains
295 ....Including intermeshing gears in drive
296 .....Worm and worm wheel
297 .....Epicyclic gear train having sun, intermediate (e.g., planet), and ring gears
298 .....Shiftable into and out of intermeshing engagement
299 .....Also including clutch mechanism having coaxial, rotatable, relatively shiftable axially, power transmitting components
300 ......With frictional brake assembly mechanically linked to, and operationally influenced by, clutch
301 ......With additional axially shiftable clutch mechanism mechanically linked to, and operationally influenced by, first clutch
302 ....Alternately transmitting power
303 ......Fluid operated actuator shifts component
304 ......Components having frictional contact surface
305 ....Truncated cone shaped
306 .....Also including ratchet wheel and driving pawl
307 ......Plural driving pawls
308 ....Attached to rotatable disk or shaft
309 .....Also including clutch mechanism having rotatable, radially shiftable, power transmitting component
310 .....With means for preventing or retarding rotation of one or more drums in at least one direction
311 ....Including sprocket wheel and chain in drive
312 ....Including power transmitting pulley and rope or belt either in drive or in cable return means
313 ....Including contacting friction wheels having noncollinear axes of rotation in drive
314 ....Including expansible, noncombustible, fluid motor in drive (e.g., air, steam)
315 ....Including noncompressible fluid motor or pump in drive
316 ....Including electric motor in drive
317 ....Including clutch mechanism in drive having coaxial, rotatable, relatively shiftable axially, power transmitting components
318 .....With frictional brake assembly mechanically linked to, and operationally influenced by, clutch
319 .....Components having frictional contact surface
320 ....Including ratchet wheel and interengaging driving pawl in drive
321 ....Including means for preventing or retarding rotation of one or more drums in at least one direction
322 .....Frictional brake assembly having rotating, wheel structure and shiftable shoe or band
323 ..With vehicle for supporting drum
324 ...Having arch-shaped body for straddling load
325 ...Having rotatable, cable guiding, pulley wheel element spaced from drum
326 ....Element repositionable relative to drum
327 ....Plural elements
328 ...Drive for drum includes motor of vehicle
329 ..With means affixing drum to supporting base and allowing relative movement therebetween
330 ...Movement engages or disengages drum from drive
331 ...Movement occurs along line collinear with rotational axis of drum during pulling of cable
332 ...Including pivotal, rotational, or swivel connection between drum and base
333 ..Having pressure element spaced from drum to confine cable thereagainst
334 ..Having rotatable, cable guiding, pulley wheel element spaced from drum
335 ...Element repositionable relative to drum
336 ....Plural elements
337 .....Cable supported
338 ...Plural elements
339 ..Having plural, distinct drive sources or discrete drive trains
340 ...Including two or more motors
341 ..Drive includes rack and either pinion or pinion segment
342 ..Drive includes intermeshing gears
343 ...Worm and worm wheel
344 ...Epicyclic gear arrangement including sun, intermediate (e.g., planet), and ring gears
345 ...Shiftable into and out of intermeshing engagement

APPARATUS FOR HAULING OR HOISTING LOAD, INCLUDING DRIVEN DEVICE WHICH CONTACTS AND PULLS ON CABLE
.Device includes rotatably driven, cable contacting drum
..Drive includes intermeshing gears
346 ...Drive also includes clutch mechanism having coaxial, rotatable relatively shiftable axially, power transmitting components
347 ....With frictional brake assembly mechanically linked to, and operationally influenced by, clutch
348 ....With additional axially shiftable clutch mechanism mechanically linked to, and operationally influenced by, first clutch
349 ....Fluid operated actuator shifts component
350 ....Components having frictional contact surface
351 .....Truncated cone shaped
352 ...Drive also includes ratchet wheel and driving pawl
353 ....Plural driving pawls
354 .....Attached to rotatable disk or shaft
355 ...Drive also includes clutch mechanism having rotatable, radially shiftable, power transmitting component
356 ...With means for preventing or retarding rotation of drum in at least one direction
357 ....Ratchet wheel or formation and locking pawl
358 ..Drive includes sprocket wheel and chain
359 ..Either drive or cable return means includes power transmitting pulley and rope or belt
360 ..Drive includes expansible, noncombustible, fluid motor (e.g., air, steam)
361 ..Drive includes noncompressible fluid motor or pump
362 ..Drive includes electric motor
363 ..Drive includes contacting friction wheels having noncollinear axes of rotation
364 ..Either drive or cable return means includes spring
365 ..Drive includes clutch mechanism having coaxial, rotatable, relatively shiftable axially, power transmitting components
366 ...With frictional brake assembly mechanically linked to, and operationally influenced by, clutch
367 ...Fluid operated actuator shifts component
368 ...Components having frictional contact surface
369 ..Drive includes ratchet wheel and interengaging driving pawl
370 ..Drive includes clutch mechanism having rotatable, radially shiftable, power transmitting component
371 ..With means on circumference of drum, or relatively movable drum components, for grasping cable
372 ..With projections or apertures on drum for engagement with complementary structural formations on cable
373 ..With pickup or pushing means on circumference of drum for cooperating with structure attached to, or formed on, end of cable
374 ..Having noncircular or varying diameter, cable contacting perimeter
375 ..Including means for preventing or retarding rotation of drum in at least one direction
376 ...Ratchet wheel or formation and locking pawl
377 ...Fluid resistance brake
378 ...Frictional brake assembly having rotating, wheel structure and shiftable shoe or band
379 ....Having fluid actuator for shifting shoe or band
380 ..With portable housing for drum and hand manipulated means for removably fastening housing to supporting base or load
381 ..With structure (e.g., sweep, tree, yoke) adapting drum to be powered by draft animal
382 ..Including static receiver spaced from drum for storing pulled cable
383 ..With cable guard structure extending partly around and closely adjacent to drum
384 .Including hand held and operated lever with plural cable engaging means movably attached thereto for alternately contacting and pulling on cable
385 .With rotatable, cable contacting, pulley wheel element attached to and reciprocated by driving component of device
386 ..Element reciprocated by expansible fluid motor
88 INCLINED PLANE LIFTER
89 R MULTIPLE LIFTERS (E.G., VEHICLE LIFTS)
89 H ..Fluid pressure
90 .Track-straddling platform
91 .Swinging platform
92 .Screw
93 R FLUID PRESSURE
93 VA ..Vehicle attached
93 L ..Service station lifts
93 A ..Combined with screw
93 HP ..Inflatable portable bags
93 H ..Portable automobile jacks
94 ROCKING SUPPORTS
95 RACK AND PINION
96 .Screw pinion
97 .Geared
98 SCREW
99 .Derrick type
100 .Special engaging feature
101 ..Rocking head or base
102 .Telescoping screws
103 .Geared
104 WEDGE
105 STEP-BY-STEP TRAVELING BAR
106 .Clutch actuated
107 ..Multiple driving clutches
108 .Pawl actuated
109 ..Multiple driving pawls
110 ...Reversing
111 ..Reversing
112 .Rack and lever
113 SINGLE THROW LEVER AND BAR
114 .Sliding bar
115 ..Rack bar and segment
116 ..Adjustable
117 ...Lateral shoe
118 ...Rack bar

	SINGLE THROW LEVER AND BAR
119	.Adjustable
120	SINGLE THROW LEVER
121	.Rail or tie lifter
122	.Lazy tongs
123	.Lever-supported thrust bar
124	.Mechanically actuated
126	..Screw
127	..Cable
128	...Block and tackle
129	.Adjustable
130	..Multiple fulcrums
131	.Special engaging feature
131.5	..Fulcrumed fork or shovel
132	..Root puller type
387	LOAD ENGAGING MEMBER AND POWER TRANSMITTING CABLE FOR SHIFTING MEMBER RELATIVE TO STRUCTURE WHICH CONTACTS AND GUIDES MEMBER
133 R	SPECIAL ENGAGING ELEMENTS
133 A	..Sharing props (nonhydraulic)
134	.Adjustable
388	MEANS SUPPORTED BY, AND MAINTAINING RELATIVE SPACING BETWEEN, LONGITUDINAL RUNS OF AN ENDLESS LOAD MOVING CABLE
389	DEVICE OR MEMBER FOR CONTACTING AND GUIDING MOVING CABLE
390	.Including rotatable, cable contacting, pulley wheel element
391	..With mechanism for retarding or preventing cable movement or element rotation
392	..With fluid, shock absorbing or tension restoring mechanism connected thereto
393	..Plural elements or element with plural cable contacting regions
394	...At least two of the elements having noncollinear axes of rotation
395	....Juxtaposed to cable at single locus
396	.....Having juxtaposed elements repositionable relative to one another
397	.....Including additional element spaced along cable path
398	....Having one element repositionable relative to another element
399	.....Repositionable element supported by cable (e.g., traveling block)
400	....Having axes perpendicular or skewed
401	...With portable block for elements and hand manipulated means for removably fastening block to support base or load
402	....Having portion of block repositionable for insertion or removal of cable or for exposure of elements
403	....With guard or guide for maintaining cable on elements
404	....Including antifriction means for elements
405	..With block for element and portion thereof repositionable for insertion or removal of cable or for exposure of element
406	...Portion revolves about axis of rotation of element
407	..With means, or element structure, enabling object or obstruction on cable to bypass or travel over element
408	..With block for element having stationary portion adapted to coact with element to grip cable
409	..With portable block for element and hand manipulated means for removably fastening block to support or load
410	...Fastening means remotely operable or breakaway type
411	...With guard or guide for maintaining cable on element
412	...Including antifriction means for element
413	..With means for affixing element to support base and allowing relative movement therebetween
414	...Including elastic member
	CROSS-REFERENCE ART COLLECTIONS RELATED TO ANTIGEN-ANTIBODY OR IMMUNOASSAY
415	...Including pivotal, rotational, or swivel connection
416	..With antifriction means for element
417	.Having cable contacting portion revolving around another component of device
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	CABLE PULLING DRUM HAVING WAVE MOTION RESPONSIVE ACTUATOR FOR OPERATING DRIVE OR ROTATION RETARDING MEANS
901	ANTIFRICTION MEANS FOR CABLE PULLING DRUM
902	EITHER DRUM, PULLEY WHEEL ELEMENT, OR CABLE CONSTRUCTED FROM SPECIFIC MATERIAL
903	YIELDABLE, CONSTANT ENGAGEMENT, FRICTION COUPLING (E.G., SLIP CLUTCH) IN DRIVE FOR CABLE PULLING DRUM
	******************************
	DIGESTS
	******************************
DIG 1	Jack bases
DIG 2	Electric screw jacks
DIG 3	Jack handles
DIG 4	Object engaging heads for jacks
DIG 5	Means for depressing foot brake when adjusting same
DIG 6	Flexible rack and pinion
DIG 7	Printers form trucks
DIG 8	Screw jacks, plural section nut
DIG 9	Vehicle-operated lift platform
DIG 10	Tire or rim expanding or contracting devices
DIG 11	Cable drum feed for presser
DIG 12	Pawls
DIG 13	Vehicle retarding drums
DIG 14	Rope attachment
DIG 15	Motor clamps
DIG 16	AUTOMOBILE TRANSMISSION JACK

CLASS 256 FENCES

DECEMBER 1990

1	MISCELLANEOUS
2	BARBED
3	.Guarded
4	..Visible
5	.Fabrics
6	.Strands
7	..Single
8	...Integral barb
9	..Sectional
10	ELECTRIC
11	TOP GUARDED
12	.Unstable
12.5	DRIFTAGE CONTROL
13	FLOOD
13.1	HIGHWAY GUARD
14	TRACK GUARD
15	.Rocking
16	.Rotary
17	.Bar
18	..Pronged
19	EARTH, STONE, PLASTIC, AND WOODEN
20	HEDGE
21	METALLIC
22	.Picket
23	SUSPENDED
24	PANEL
25	.Inclosure
26	.Hinged
27	.Angle
28	..Tied
29	.Tied
30	..Braced
31	.Braced
32	WIRE
33	.All wire
34	.Picket
35	.Braced
36	..Trussed
37	.Stretcher
38	..Gravity
39	..Spring
40	..Winder
41	...Multiple
42	...Bracket
43	...Internal
44	...Lateral
45	.Fabrics
46	.Strands
47	.Connections
48	..Cross
49	...Facing strip
50	...Plastic
51	....Reenforced
52	...Multiple
53	...Nonaligned slots
54	...Clamp
55	....Screw
56	....Wedge
57	...Tie
58	...No clip
59	RAIL
60	.Angle
61	..Tied
62	.Tied
63	..Braced
64	.Braced
65	.Connections
66	..Plastic
67	..Adjustable
68	..Clamp
69	...Screw
70	...Wedge
71	..Tie
72	..No clip
73	PANELS

****

DIGESTS

****

DIG 1	Compensator, spring
DIG 2	Adjustable or falling fence
DIG 3	Wire clamp
DIG 4	Board fastener
DIG 5	Metal post
DIG 6	Building construction guard rail

CLASS 258 RAILWAY MAIL DELIVERY

DECEMBER 1990

1	MISCELLANEOUS
1.2	AIRCRAFT IN FLIGHT
1.4	.To or from another moving vehicle and/or requiring circular aircraft flight
1.6	.With projector
1.8	.Load exchange
2	SIGNALING FEATURE
3	HAND TOOLS
4	MAGNETIC
5	PROJECTORS
6	.Automatically actuated
7	..Spring
8	CAR-POSITIONED RECEIVER OR SUPPORT
9	LATERALLY SLIDING RECEIVER OR SUPPORT
10	LONGITUDINALLY EXTENDING AUXILIARY TRACK
11	COMBINED RECEIVER AND SUPPORT
12	.Fork and other receiver
13	..Retaining feature
14	.Fork receiver only
15	..Retaining feature
16	...Impact-operated load release
17	...Receiver-engaging feature
18	..Receiver-engaging feature
19	.Impact-operated load release
20	RECEIVERS
21	.Fork
22	..Retaining feature
23	SUPPORTS
24	.Interconnected arms
25	.Impact-operated load release
26	.Receiver-engaging feature

MISCELLANEOUS

****
CLASS 518 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR FISCHER-TROPSCH.........
PROCESSES. ....
****

****
THE 520 SERIES, CLASSES.....
520-528, IS AN INTEGRAL.....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS SERIES PROVIDES...
FOR SYNTHETIC RESINS. ......
****

****
CLASS 530 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR LIGNINS, PROTEINS.......
PEPTIDES, AND NATURAL.......
RESINS. ....
****

****
CLASS 534 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR NOBLE GAS, RADIOACTIVE..
METAL, AND RARE EARTH METAL.
CONTAINING COMPOUNDS; AND...
AZO-TYPE COMPOUNDS. ....
****

****
CLASS 536 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR CARBOHYDRATES OR........
DERIVATIVES THEREOF. ....
****

****
CLASS 540 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR HETERO RINGS HAVING.....
MORE THAN SIX RING MEMBERS..
AND AT LEAST ONE NITROGEN...
RING MEMBER, STEROID........
COMPOUNDS CONTAINING HETERO.
RINGS, AZETIDINONES AND.....
FUSED AZETIDINONES (SUCH AS.
CEPHALOSPORINS AND..........
PENICILLINS). ....
****

****
CLASS 544 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR SIX-MEMBERED HETERO.....
RINGS HAVING TWO OR MORE....
HETERO ATOMS OF WHICH AT....
LEAST ONE IS NITROGEN. .....
****

****
CLASS 546 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR SIX-MEMBERED HETERO.....
RINGS HAVING A SINGLE.......
HETERO NITROGEN ATOM. ......
****

****
CLASS 548 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR FIVE-, FOUR- OR THREE-..
MEMBERED HETERO RINGS.......
HAVING AT LEAST ONE.........
NITROGEN ATOM. ....
****

****
CLASS 549 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR HETERO RINGS HAVING.....
SULFUR OR OXYGEN AS THEIR...
ONLY HETERO ATOMS. ....
****

****
CLASS 552 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR AZIDES,.................
TRIPHENYLMETHANES, CERTAIN..
NAPHTHACENES, ANTHRONES AND.
ANTHRAQUINONES. ....
****

350 R	CARBOCYCLIC OR ACYCLIC
350 L	..Leuco dyes
398	.Fats, fatty oils, ester-type waxes or higher fatty acids
398.5	..With preservative
398.6	..Preparing by oxidation of nonaromatic hydrocarbon mixtures
399	..Sulfur containing
400	...Sulfoxy containing
401	....Amino or amido containing
402	....Aryl nucleus containing
402.5	...Nitrogen containing
403	..Phosphorus containing (e.g., lecithin)
404	..Nitrogen containing
404.5	...Poly-nitrogen containing
404.8	..Reaction products with polycarboxylic compounds
405	..Acylated
405.5	..Unsaturation
405.6	..Isomerization
406	..Oxidized
407	..Polymerized
408	..Halogen containing
409	..Hydrogenated
410	..Synthetically produced higher fatty esters
410.5	...With phenols or aromatic alcohols
410.6	...With acyclic polyoxy alcohols
410.7	....Glycerides
410.8	.....With non-higher fatty noncarboxylic acid
410.9 R	...With acyclic monohydric alcohol
410.9 N	.....Unsaturated alcohols
410.9 V	.....Vitamin A acid esters
412	..Recovery or extraction from residues or organic material
412.1	...From fish livers
412.2	...From legumes, nuts or seeds
412.3	....With acidic or basic material
412.4	....Solvent extraction
412.5	...Foots, textile treating liquors, absorbents, sludges or industrial wastes
412.6	...Rendering
412.7	....With acidic or basic material
412.8	...Solvent extraction
413	..Higher fatty acids or their salts
414	...Heavy metal or aluminum containing

CARBOCYCLIC OR ACYCLIC
.Fats, fatty oils, ester-type waxes or higher fatty acids
..Higher fatty acids or their salts
415 ...By hydrolysis of fats, oils, waxes or esters
416 ....With organic sulfonic acids
417 ....With alkali-forming metal compound
418 .....With subsequent treatment
419 ...Purification
420 ..Purification of fats, oils and waxes
421 ...By esterification of free fatty acids
423 ...By treatment with ozidizing agents
424 ...By treatment with acid, acid anhydride or acid salt
425 ...By treatment with basic substance
426 ....With organic solvent
427 ....With solid absorbent
428 ...By physical treatment only
428.5 ....With solvent

****
CLASS 556 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR HEAVY METAL, ALUMINUM,..
AND SILICON CONTAINING......
COMPOUNDS. ....
****

****
CLASS 558 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR MOST ORGANIC ESTERS,....
EXCEPT CARBOXYLIC ACID......
ESTERS. ....
****

****
CLASS 560 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR CARBOXYLIC ACID ESTERS,.
ISOCYANATE ESTERS AND.......
SEVERAL MISCELLANEOUS.......
ESTERS. ....
****

****
CLASS 562 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR ORGANIC ACIDS, ACID.....
HALIDES, AND ACID...........
AHYDRIDES, AS WELL AS.......
SELENIUM AND TELLURIUM......
COMPOUNDS. ....
****

****
CLASS 564 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR AMINO NITROGEN..........
CONTAINING COMPOUNDS. ......
****

****
CLASS 568 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR BORON, PHOSPHORUS,......
SULFUR OR OXYGEN CONTAINING.
COMPOUNDS. ....
****

665 R .C-metal
665 G ...Grignard type
665 B ...Beryllium containing

****
CLASS 570 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR HALOGENATED.............
HYDROCARBONS. ....
****

****
CLASS 585 IS AN INTEGRAL....
PART OF CLASS 260 AS SHOWN..
BY THE POSITION OF THIS.....
BOX. THIS CLASS PROVIDES....
FOR HYDROCARBONS. ....
****

****
CROSS-REFERENCE ART COLLECTIONS BASED ON INDUSTRY OR ART USE
****
998.11 DENTAL
998.12 ABLATIVE
998.13 BRAKE, FRICTION OR ANTI-SKID
998.14 BALL, BAT, PIN OR BILLY
998.15 FLOOR COVERING
998.16 SOUND RECORD
998.17 PEARLESCENT
998.18 MOLD OR MOLD COATING
998.19 ROAD MARKING OR PAVEMENT COMPOSITIONS (NON-CEMENTITIOUS, NON-BITUMINOUS)
998.2 DIPEPTIDES, E.G., ASPARTAME, ANSERINE, CARNOSINE, ETC.
998.21 .Aspartylphenylalanone esters and cyclohexylalanine esters
998.22 .Arginine containing
****
DIGESTS
****
DIG 14 Soil treatment digest (polyelectrolytes)
DIG 15 Antistatic agents not otherwise provided for
DIG 16 .Antistatic agents containing a metal, silicon, boron or phosphorus
DIG 17 .High polymeric (resinous) antistatic agents
DIG 18 ..High polymeric (resinous) antistatic agents containing pentavalent nitrogen
DIG 19 .Non-high polymeric antistatic agents/N
DIG 20 ..Antistatic agent contains pentavalent nitrogen
DIG 21 Polymer chemically or physically modified to impart antistatic properties and methods of antistatic agent addition
DIG 22 Concentration
DIG 23 Fiber
DIG 24 Flameproof
DIG 25 Metal catalyst
DIG 26 Multicolor
DIG 27 Nomenclature
DIG 28 Peroxide
DIG 30 Properties
DIG 31 Ionic cross-link
DIG 32 Incompatible blend
DIG 33 Molecular sieve
DIG 34 Hydantoin
DIG 35 Crystallization
DIG 37 Closure
DIG 38 Ink
DIG 41 Glass flake
DIG 42 Melts used in preparation of non-cyclic aliphatic chloro-, bromo- and iodo-hydrocarbons
DIG 43 Promoting degradability of polymers
DIG 44 Beta branched fatty acid
DIG 45 Polymer dispersions
DIG 46 Vibration dampening composition
DIG 47 Poisons, foods or pharmaceuticals

1 MISCELLANEOUS
2 WITH LIQUID SEPARATIONS
3 .In circuit
4 .On inlet
5 .Filtering
6 ..Unitary structure
7 .Decanting
8 ..Unitary structure
127 WITH EXTERNAL SUPPLY OR REMOVAL OF HEAT
128 .Processes
129 .Temperature or humidity sensor
130 ..Heat supply or removal control
131 .Automatic control of heat supply or heat effect
133 .With mixer for supplementary gas and gaseous contactor product
134 ..Pressure responsive supplementary gas supply means
135 .With indicator or tester
136 .Combined
137 .Interconnected heat supply and contact fluid flow controllers
138 .Diverse heat supply or removal means
139 ..Electric heater
140.1 .Refrigeration producer
140.2 ..Absorption means
141 .Heat producer
142 ..Electric heater
143 ..Means burning contact product
144 ...Internal combustion engine
145 ....Engine fuel supply means heated by exhaust manifold
146 .Plural distinct contact zones
147 ..Serially arranged in flow path
148 ...Counter flowing gas and liquid (e.g., absorption or rectification column)
149 ...Heat exchanger in flow path spaced from contact zones
150 .Heat exchange means in one of plural liquid feed paths
151 .Recirculating fluid
152 .Heat exchange means at or downstream of contact zone
153 ..Gas exposed liquid body or sheet contacting heat exchanger
154 ..Porous type gas-liquid contactor exposed to heat exchanger
155 ..Contact fluid passage surrounds external fluid flow passage
156 ..Fins or deflectors in contact fluid passage of heat exchanger
157 ..With heat exchange means for feed fluid
158 INDIRECT INTERCHANGE OR HEAT BETWEEN CONTACT FLUIDS
159 .Incoming fluid exchanges heat
160 ..With fluid at or downstream of contact zone
161 ...Incoming exchanging fluid is feed gas
16 MULTIPLE GAS
17 .Furnace-gas type
18.1 MULTIPLE DIVERSE LIQUIDS
18.2 .Water added to charge
18.3 .Multiple fuels
18.4 .Antidetonant
19 FLUID DISTRIBUTION
20 .Systems
21 ..Series
22 ...Gas connections
23.1 ..Parallel
23.2 ...Carburetors
23.3 ....Stratified charge
23.4 ....Rotary engine
24 .Pumping
25 ..Liquid operated
26 ..Automatic control
27 ...Liquid inlet
28 ..Gas and liquid
29 ...Liquid circuit
30 ..Gas inlet
31 ...Churn type
32 ....Rotary dasher
33 ....Reciprocating dasher
34.1 ..Liquid
34.2 ...Accelerator pump
34.3 ....With thermostatic control
35 ...Gas operated
36.1 ...In circuit
36.2 ....Carburetor
37 ...Inlet
38 .Valved
39.1 ..Thermostatic
39.2 ...With carburetor expansible fluid actuating means
39.3 ...With carburetor bimetallic actuating means
39.4 ...Carburetor spring linkage with temperature element
39.5 ...Without carburetor choke means
39.6 ...With carburetor electrical heater
40 ..Multiple jet
41.1 ...Progressive
41.2 ....With parallel carbureting passages
41.3 .....With control of plural passages
41.4 ....Multiple jet manual control
41.5 ....Bypass opening beyond throttle
42 ..Multiple valves
43 ...Connected
44.1 ....Contact space
44.2 .....Contact valve with hollow shaft supplying liquid
44.3 .....Traversely reciprocating air or mixture valve
44.4 ......Suction operated
44.5 .....Longitudinally movable air or mixture valve
44.6 .....Rotating air or mixture valve
44.7 ......Off-center pivoted
44.8 ......Cylinder or plug-valve type
44.9 ......Variable-shape passage
45 ....Gas by-pass
46 .....With gas inlet
47 .....With gas outlet
48 .....With liquid inlet
49 ....Liquid inlet
50.1 .....With gas inlet
50.2 ......Suction operated gas inlet valve
50.3 ......Noncarburetor
51 .....With gas outlet
52 ....Gas inlet and outlet
53 ...Contact space
54 ...Gas by-pass
55 ....With gas inlet
56 ....With gas outlet
57 ....With liquid inlet
58 ...Liquid inlet
59 ....With gas inlet
60 ....With gas outlet
61 ...Gas inlet and outlet
62 ..Contact space
63 ..Gas by-pass
64.1 ..Gas inlet
64.2 ...Anterior throttle
64.3 ...Pressure control
64.4 ...Suction operated
64.5 ...Float control
64.6 ...Starting choke
65 ..Gas outlet
66 ..Liquid inlet
67 ...Plural
68 ....Float and manual
69.1 ...Gas pressure controlled
69.2 ....Wet diaphragm
70 ...Float controlled
71 ...Manual
72.1 .Liquid supply tank

	FLUID DISTRIBUTION
	.Liquid supply tank
72.2	..Aviation carburetor
73	..Barometric
74	.Contact receptacle
75	CONTACT DEVICES
76	.Injector type
77	..Submerged blast
78.1	.Atomizer type
78.2	..Noncarburetor
79.1	.Rotating gases
79.2	..Noncarburetor
80	.Traveling strip
81	.Reciprocating
82	..Piston
83	.Rotating
84	..Impeller
85	...Hollow shaft
86	....Gas trapping
87	....Gas delivering
88	....Liquid spraying
89	...Sprayed
90	....Horizontal axis
91	...Dipping
92	....Horizontal axis
93	...Submerged blast
94	.Porous mass
95	..Surface contact
96	..Gas-flow control
97	..Liquid-flow control
98	...Spray
99	...Capillary feed
100	.Porous sheet
101	..Surface contact
102	...Gas-flow control
103	...Liquid downflow
104	...Capillary feed
105	..Gas-flow control
106	..Liquid downflow
107	..Capillary feed
108	.Wet baffle
109	..Gas-flow control
110	..Liquid-flow control
111	...Spray
112.1	...Film
112.2	....Corrugated plates
113	..Perforated baffles
114.1	..Overflow baffles
114.2	...Bubble caps
114.3	...Jet plates
114.4	...Valve tray
114.5	...Tray construction
115	.Liquid spray
116	..Aspirating
117	..Opposed
118	..Transverse
119.1	.Liquid tank
119.2	..Carburetor
120	..Floating distributor
121.1	..Submerged blast
121.2	...Minnow bucket
121.3	...Carburetor vented nozzle
121.4	....Air inlet valve
122	...Submerged screen
123	...Submerged baffle
124	...Multiple jet
125	..Multiple receptacle
126	..Upflowing gases

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DIGESTS

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DIG 1	Auxiliary air inlet carburetors
DIG 2	Airplane
DIG 3	Air cooling
DIG 4	Auto humidifiers
DIG 6	Backfire
DIG 7	Carbonators
DIG 8	Carburetor primers
DIG 9	Furnace gas scrubbers
DIG 10	Steam heaters and condensers
DIG 11	Cooling towers
DIG 12	Carburetor venturi
DIG 13	Desuperheaters
DIG 14	Display stands
DIG 15	Duct humidifiers
DIG 16	Cream whipping
DIG 17	Odorizers
DIG 18	Dashpots
DIG 19	Degassers
DIG 20	Deicers for carburetors
DIG 21	Drawing excess fuel from carbureting passage
DIG 22	Faucet aerators
DIG 23	Fuel feeding valves
DIG 24	Fuel feeding valve retaining
DIG 25	Fuel spread out into a film
DIG 26	Foam
DIG 27	Gas circulated in circuit
DIG 28	Blood oxygenators
DIG 29	Heaters submerged in liquid
DIG 30	Tray heaters
DIG 31	Heaters
DIG 32	Heaters and condensers
DIG 33	Heaters, spray
DIG 34	Automatic humidity regulation
DIG 35	Air line lubricators
DIG 36	Carburetor manifolds
DIG 37	Modern pumps diaphragm
DIG 38	Needle valves
DIG 39	Liquid feeding nozzles
DIG 40	Oil filter for fuel entering nozzles or float chamber
DIG 41	Pad retaining means in humidifiers and air conditioners
DIG 42	Ozonizers
DIG 43	Air coolers
DIG 44	Overflow trough
DIG 45	Processes carburetors
DIG 46	Residue prevention in humidifiers and air conditioners
DIG 47	Swing diffusers
DIG 48	Sonic vibrators
DIG 49	Suction operated feed valve
DIG 50	Surge prevention in carburetors
DIG 51	Carburetors with supercharging blowers
DIG 52	Carburetor with valves
DIG 53	Valve actuation
DIG 54	Venturi scrubbers
DIG 55	Reatomizers
DIG 56	Variable venturi
DIG 57	Interchangeable chore tube
DIG 58	Choke tube having plurality of leaves
DIG 59	Choke tube leaves flexible
DIG 60	Duplex barrels
DIG 61	Longitudinally reciprocating choke tube (along air passage)
DIG 62	Longitudinally reciprocating choke tube having movable parts
DIG 63	Longitudinally reciprocating choke tube, throttle-operated
DIG 64	Longitudinally reciprocating choke tube, suction-operated
DIG 65	Vaporizers
DIG 66	Water injection to prevent detonation
DIG 67	Carburetors with vented bowl
DIG 68	Diaphragm-controlled inlet valve
DIG 69	Fluid amplifiers in carburetors
DIG 70	Sewage aerators; diffusers
DIG 71	Sewage aerators; rotating
DIG 72	Packing elements
DIG 73	Carburetor primers; ticklers
DIG 74	Valve actuation; electrical
DIG 75	Flowing liquid aspirates gas
DIG 76	Steam
DIG 77	Plume abatement
DIG 78	Sonic flow

DIG 79	Cooling ponds
DIG 80	Electrical treatment
DIG 81	Percolation control
DIG 82	Upper end injectors
DIG 83	Fuel vapor generation
DIG 84	Tamperproof
DIG 85	Droplet catchers
DIG 86	Cooling tower ice prevention
DIG 87	Cooling tower power generators

CLASS 264 PLASTIC AND NONMETALLIC ARTICLE SHAPING OR TREATING: PROCESSES

DECEMBER 1990

0.5	SHAPING OR TREATING RADIOACTIVE MATERIAL, E.G., FISSIONABLE OR FERTILE, ETC.
1.1	OPTICAL ARTICLE SHAPING OR TREATING
1.2	.Nonresinous material only, e.g., ceramic, etc.
1.3	.Light polarizing article or holographic article
1.4	.Utilizing plasma, electrical, or wave energy
1.5	.Fiber optic
1.6	.Continuous or indefinite length
1.7	.Composite or multiple layer
1.8	..Including bifocal
1.9	..Reflective
2.1	.Rotational molding
2.2	.Changing mold size or shape during molding or with shrinkage compensation
2.3	..With mold adherence or release
2.4	..Preform
2.5	.Including step of mold making
2.6	.Nonmechanical aftertreatment, e.g., hydration of contact lens, extraction, heat treatment, etc.
2.7	.Reshaping or treatment of an optical preform
3.1	EXPLOSIVE OR PROPELLANT ARTICLE SHAPING OR TREATING
3.2	.Rolling to form sheet or rod
3.3	.Extrusion to form sheet or rod
3.4	.Forming or treating particulate material
3.5	..By liquid comminuting
3.6	...Immersed in liquid
4	ENCAPSULATING NORMALLY LIQUID MATERIAL
4.1	.Liquid encapsulation utilizing an emulsion or dispersion to form a solid-walled microcapsule
4.3	..With treatment subsequent to solid wall formation, e.g., coating, hardening, etc.
4.32	...Microcapsule wall containing two or more layers
4.33	...Microcapsule wall derived from synthetic polymer
4.4	..Solid-walled microcapsule formed by cooling molten material
4.6	..Solid-walled microcapsule formed by physically removing a constituent, e.g., evaporation, extraction, etc.
4.7	..Solid-walled microcapsule formed by in situ polymerization
5	FORMATION OF SOLID PARTICULATE MATERIAL DIRECTLY FROM MOLTEN OR LIQUID MASS, E.G., LIQUID COMMINUTING
6	.With subsequent uniting of the particles
7	.Coated particles
8	.Utilizing centrifugal force or rotating forming zone
9	.By vibration or agitation
10	.Utilizing electrical energy
11	.By impinging plural liquid masses
12	.By impinging or atomizing with gaseous jet or blast
13	.By extrusion spraying, or gravity fall through orifice
14	..Into moving fluid
15	SPHEROIDIZING OR ROUNDING OF SOLID PARTICLES
16	DENTAL SHAPING TYPE
17	.Denture forming
18	..Forming denture base against preformed teeth
19	.Tooth forming
20	..Shaded layer
21	SHAPING OR TREATING LUMINESCENT MATERIAL
22	DIRECT APPLICATION OF ELECTRICAL OR WAVE ENERGY TO WORK
23	.Sonic or supersonic wave energy
24	.To convey or align particulate material
25	.To heat
26	..Electro-static
27	..By electric current passing directly through work
28	WITH STEP OF COOLING TO A TEMPERATURE OF ZERO DEGREES C. OR BELOW
29.1	CARBONIZING TO FORM ARTICLE
29.2	.Filaments
29.3	.Agglomeration or accretion
29.4	.From cellulosic material
29.5	.With addition of carbonizable material to carbon article and carbonizing
29.6	.In specific atmosphere (except vacuum or air)
29.7	.Controlling varying temperature or plural heating steps
30	FURNACE LINING FORMATION OR REPAIR
31	FORMING STRUCTURAL INSTALLATIONS IN SITU
32	.Arched, domed, or vertical-cylindrical structure
33	.Repositioning or moving mold to form sequential portions of a structure
34	.Sequentially molding in situ different portions or layers on a unitary structure
35	.Uniting preform member with molding material
36	REPAIRING OR RESTORING ARTICLES FOR REUSE
37	RECYCLING OF RECLAIMED OR PURIFIED PROCESS MATERIAL
38	.Of extrudant receiving bath material
39	WITH STEP OF CLEANING, POLISHING OR PRECONDITIONING APPARATUS FOR USE
40.1	WITH MEASURING, TESTING OR INSPECTING
40.2	.Sensing by passage of an electric field-current, or light thru molding material
40.3	.Controlling fluid pressure in direct contact with molding material
40.4	.Measuring a weight or volume, e.g., level-responsive, etc.
40.5	.Positioning of a mold part to form a cavity or controlling pressure of a mold part on molding material
40.6	.Controlling heat transfer with molding material
40.7	.Controlling rate of movement of molding material or its support in a continuous process
41	PORE FORMING IN SITU, E.G., FOAMING, ETC.
42	.Of inorganic materials
43	..Including vitrification or firing
44	...Burning out components to form pores
45.1	.Composite article making
45.2	..Utilizing inflatable or expandable mold part or mold, per se
45.3	..Incorporating particulate material, fibers or batts in a random distribution within a foamed body
45.4	..Forming one layer by uniting and expanding expandable thermoplastic beads or particles
45.5	..Autogenously formed surface layer or base supplies surface, e.g., skin forming, etc.
45.6	...Foam surface layer produced by surface treatment of preformed base material
45.7	..Utilizing rotational molding operation

PORE FORMING IN SITU, E.G., FOAMING, ETC.
.Composite article making
45.8 ..Forming indefinite length continuous work
45.9 ...Including extrusion
46.1 ....With subsequent application of shaping force to form final desired shape
46.2 ...Between at least two moving surfaces
46.3 ....With roller applied pressure
46.4 ..Shaping material and uniting to a preform or solidified layer
46.5 ...Uniting spaced preforms or solidified layers by introducing foamable material therebetween
46.6 ...Against inner surface of a hollow preform or solidified layer
46.7 ...Utilizing metal part or reinforcement
46.8 ...Introducing preform into mold by thermoforming operation, e.g., vacuum forming, etc.
46.9 ...On a preform or solidified layer which is spherical, toroidal, or annular
48 .Including surface treatment of porous body
49 .By treating occluded solids
50 .By mechanically introducing gas into material
51 .By gas forming or expanding
52 ..Utilizing expansion retarder
53 ..Liquid to gas phase change
54 ..Chemical blowing
55 ...Plural or incremental expansion steps
56 VITRIFYING OR SINTERING OF PREFORM TO MAKE INORGANIC ARTICLE
57 .Particular positioning, arranging or conveying article during heating
58 ..Stacking or arranging plural articles
59 .Simultaneously burning out embedded element to form void
60 .Forming coated, composite, or nonuniform composition article
61 ..Forming electrical article or component thereof
62 ..Shaping followed by article coating
63 .Utilizing binder to add green strength to preform
64 .Controlling or directing heat flow within heating or drying chamber or against the article
65 .Controlling pressure or composition of heating atmosphere
66 .Controlling varying temperature or plural heating steps
67 .With article cutting, punching or grinding
68 INCLUDING STEP OF GENERATING HEAT BY FRICTION
69 TREATMENT OF MATERIAL BY VIBRATING, JARRING OR AGITATING DURING SHAPING
70 .Continuously formed or indefinite length article
71 .By reciprocating or vibrating mold
72 ..Diverse, sequential or modulated
73 RANDOM VARIEGATED COLORING DURING MOLDING
74 .Of surface portion only
75 .By extrusion
76 .By calendering
77 .By compression in a closed mold cavity
78 WITH INCORPORATING DYE SUSCEPTIBLE MATERIAL OR DYEING WORKPIECE
79 WITH APPLICATION OR BARRIER FOR VOLATILE COMPONENT MATERIAL TO MOLDED ARTICLE SURFACE
80 FLAME CONTACT OR RESHAPING BY HEAT DECOMPOSITION OF WORK
81 GAS OR VAPOR DEPOSITION OF ARTICLE FORMING MATERIAL ONTO MOLD SURFACE
82 REACTIVE GAS OR VAPOR TREATMENT OF WORK
83 .Work is organic material
84 APPLYING EXPLOSIVE FORCE TO MAKE ARTICLE
85 UTILIZING SPECIAL INERT GASEOUS ATMOSPHERE OR FLUSHING MOLD WITH INERT LIQUID
86 REMOVAL OF LIQUID COMPONENT OR CARRIER THROUGH POROUS MOLD SURFACE
87 .By direct application of vacuum or pneumatic pressure
500 DIRECT APPLICATION OF FLUID PRESSURE DIFFERENTIAL TO PERMANENTLY SHAPE, DISTORT, OR SUSTAIN WORK
501 .Producing toroidal work, e.g., tire, etc.
502 ..At least a portion of the external surface being unconfined during application of fluid pressure
503 .Shaping against interior of a forming surface by rotation of material or material shaping member
504 .Perforation by differential fluid pressure; or smoothing, scoring, or cutting of green concrete with fluid pressure
505 .Corrugating
506 ..Of a tubular preform
507 ...With axial compression
508 ...Continuous or indefinite length
509 .Labeling or embossing indicia
510 .Producing multilayer work or article
511 ..Including application of vacuum to hold, support, or sustain a preform against which material is molded
512 ..Producing hollow work or a tubular article
513 ...Including injection
514 ...Including extrusion
515 ....Including forming a hollow article
516 ...By insertion or application of a preform
517 .Bulk deposition of particles by differential fluid pressure
518 ..Continuous or indefinite length
519 .Differentail temperature conditioning
520 ..Including application of internal fluid pressure to hollow finite length preform to force same into conformity with female mold part
521 ...Heating
522 ..Starting material is nonhollow planar finite length preform or product is planar and of finite length
523 .Including application of internal fluid pressure to hollow finite length parison to expand same into conformity with female mold part
524 ..Production of a sealed product or a filled mercantile container
525 ...Including maintenance or production of internal sterility
526 ..Including use of vacuum or internal venting of parison to remove fluid after application of differential fluid pressure
527 ..Forming multiple containers in a single mold block from a single length of parison
528 ..Including internal cooling of the article after fluid pressure shaping
529 ..Including plural distinct steps of differential fluid pressure induced expansion

DIRECT APPLICATION OF FLUID PRESSURE DIFFERENTIAL TO PERMANENTLY SHAPE, DISTORT, OR SUSTAIN WORK
.Including application of internal fluid pressure to hollow finite length parison to expand same into conformity with female mold part
..Including plural distinct steps of differential fluid pressure induced expansion
530 ...In diverse female mold cavities
531 ..Including shaping by mechanical means other than fluid pressure during or subsequent to fluid pressure differential shaping
532 ...Shaping is longitudinal or axial stretching prior to or during differential fluid pressure deformation
533 ...Shaping is neck formation other than by closure of mold for body of article
534 ...Shaping is subsequent to expansion
535 ..Including heating of previously formed parison to blow molding temperature
536 ..Including removal of flash or sprue
537 ..Including injection forming of parison or portion thereof
538 ...Arcuate or rotary movement of parison or workpiece from one work station to another
539 ...Including extrusion
540 ..Including extrusion
541 ...Of irregular or varying cross section
542 ...With movement of parison or workpiece from one work station to another
543 ....Movement is arcuate or rotary
544 .Starting material is nonhollow planar finite length preform or product is finite length
545 ..Including uniting plural shaped sheets to form hollow work
546 ..Material shaped is a fabric per se
547 ..With distinct staged deformation by differential fluid pressure
548 ...Including heating after forcing into contact with a solid heating means by differential fluid pressure
549 ...Including use of male part to stretch heated preform which is formed by a female mold which determines shape of work
550 ..Including use of male part to stretch heated preform which is formed by a female mold which determines shape of work
551 ...Simultaneous formation of plural articles
552 ..Including curing or vulcanization
553 ..Including use of vacuum
554 ...Including use of male mold part which determines the final shape of at least a portion of the work
555 .Production of continuous or running length
556 ..By casting on to a cooled roll
557 ..Including liquid contact
558 ...Including internal liquid contact
559 ....With downward movement of workpiece
560 ...With calibration, mandrel forming or with internal guide
561 ...Contact with liquid coagulant or reactive liquid
562 ...With immersion in liquid bath
563 ..Producing a tubular product
564 ...Including deformation by application of fluid pressure
565 ....With internal gas bearing or mandrel
566 ....With application of external pressure or vacuum
567 .....With reheating of work, e.g., tempering, annealing, etc.
568 .....Including use of vacuum
569 .....Including annular fluid contact
570 .Including hydrostatic or liquid pressure
571 .Including use of vacuum
572 .With internal application of fluid pressure
573 ..To finite length tubular product
574 ..To form generally spherical product
101 VACUUM TREATMENT OF WORK
102 .To degas or prevent gas entrapment
103 WITH TWINING, PLYING, BRAIDING OR TEXTILE FABRIC FORMATION
104 FORMING ELECTRICAL ARTICLES BY SHAPING ELECTROCONDUCTIVE MATERIAL
105 .Conductive carbon containing
106 FORMING SOUND GROOVES IN RECORDS
107 .Die pressing disk type records
108 ORIENTING OR ALIGNING SOLID PARTICLES IN FLUENT MATRIX MATERIAL
109 FORMING ARTICLES BY UNITING RANDOMLY ASSOCIATED PARTICLES
110 .Mica particles
112 .Stratified or layered articles
113 ..Plural layers formed by uniting randomly associated particles
114 .Utilizing centrifugal force
115 .With liberating or forming of particles
116 ..From felt or batt
117 .Agitating to form larger particles, i.e., accretion or agglomeration
118 .With subsequent cutting, grooving, breaking or comminuting
119 .With reshaping or surface embossing of formed article
120 .Plural, intermittent pressure applying
121 .Projecting particles in a moving gas stream
122 .Utilizing diverse solid particles
123 .Autogenously or by activation of dry coated particles
124 ..By activating naturally occurring binder, e.g., cork, etc.
125 ..Sintering or heat fusing particles
126 ...Of organic material
127 ....Fluorocarbon resin
128 .Liquid binder applied subsequent to particle assembly
129 WITH PRINTING OR COATING OF WORKPIECE (OUT OF MOLD)
130 .Anti-stick or adhesion preventing coating
131 .Coating with particulate material
132 .Applying indicia or design, e.g., printing, etc.
133 .Applied to clay, sand or earthen workpiece
134 .Coating or impregnating workpiece before molding or shaping step
135 ..Molding material against and uniting to the coated or impregnated workpiece
136 ..Impregnation of batt, sheet, or filament
137 ...Heat settable impregnant
138 WITH SEVERING, REMOVING MATERIAL FROM PREFORM MECHANICALLY OR MECHANICALLY SUBDIVIDING WORKPIECE
139 .Removing surface portion of composite workpiece to expose substrate
140 .To form particulate product, e.g., flakes, etc.

WITH SEVERING, REMOVING MATERIAL FROM PREFORM MECHANICALLY OR MECHANICALLY SUBDIVIDING WORKPIECE
.To form particulate product, e.g., flakes, etc.
141 ..Subsequent to extruding step
142 ...By cutting at point of extrusion
143 ...From strands
144 ..From continuously cast material
145 .Forming continuous work followed by cutting
146 ..Slitting longitudinally
147 ...Of web to form plurality of threads
148 ..Extruding followed by cutting to length
149 ...Extruding around moving preform
150 ...Extruding hollow product
151 ...With shaping between extruding and cutting steps
152 .Cutting and uniting cut parts
153 .Punching article from sheet material
154 .Making hole or aperture in article
155 ..By punching or drilling
156 ...Plurality of holes
157 .Dividing work to form plural articles
158 ..Shaving or slicing sheets from work block
159 ..Tubular work
160 ..Sheet or web work
161 .Flash or sprue removal type
162 .Surface finishing, e.g., abrading, grinding, etc.
163 .Simultaneous severing and shaping, or severing while work remains on shaping surface
164 UNCONFINED DRAWING OR EXTENDING OF A PLASTIC MASS TO MAKE ARTICLE
165 FORMING CONTINUOUS OR INDEFINITE LENGTH WORK
166 .With mold element formation or removal
167 .Of varying cross-sectional area or with intermittent cross-sectional irregularity
168 .With crimping or crinkling of strands of filaments
169 .With prevention of equipment fouling accumulations or deposits
170 ..By chemical additive to molding material or treating bath
171 .Composite or stratified transversely of length
172 ..Plural discrete axially aligned preforms
173 ..Hollow articles
174 ..Strand-like or filament-like preforms
175 .By calendering
176.1 .Shaping by extrusion
177.1 ..To produce particular cross section, e.g., noncircular, etc.
177.11 ...Nonresinous material only, e.g., ceramic, soap, cellulose, glue, etc.
177.12 ...Honeycomb
177.13 ...Filament, e.g., T-configured, dog-bone, trilobal, etc.
177.14 ....Hollow or tubular work produced
177.15 .....Capillary passages, e.g., pen nibs, writing tips, etc.
177.16 ...Die configuration (other than fixed orifice shape)
177.17 ...Processing or treatment after extrusion, e.g., support, guide, etc.
177.18 ....Chemical
177.19 ....Temperature specified (other than ambient)
177.2 ...With reinforcement, filler or additive
178 R ..Into a liquid bath
178 F ....Filaments
179 ...With purifying or replenishing of bath
180 ...Liquid of bath is in motion
181 ....With stretching in bath of extruded article
182 ...Polyacrylonitrile containing extrudant
183 ...Reactive bath
184 ....Synthetic resin containing extrudant
185 .....Polyvinyl alcohol containing
186 ....Carbohydrate containing extrudant
187 .....Cellulose derivatives
188 ......Viscose
189 ....Bath contains organic compound
190 ....Carbohydrate or protein
191 ....Extrudant contains added organic compound
192 ....Sulfur containing organic compound
193 ....Polyethers, e.g., oxyalkylated compounds, etc.
194 ....Nitrogen containing organic compound
195 ....Subsequent chemical treatment of formed articles
196 ....Plural step coagulating or regenerating
197 ....With stretching
198 ....Mechanical treatment of articles, e.g., stretching, folding, deforming, etc.
199 ......Cupro ammonium cellulose
200 ......Cellulose acetate
201 ....Natural rubber containing extrudant
202 ....Protein containing extrudant
203 ...Liquid is solvent extractive
204 ..Solidifying by evaporation of liquid solvent or liquid carrier
205 ...Synthetic resin containing spinning solutions
206 ....Polyacrylonitrile
207 ...Cellulose derivative
208 ....With stretching of formed article
209.1 ..Hollow article
209.2 ...Including rotational or translational movement of a material shaping member
209.3 ...Reshaping product (extrudate) subsequent to extrusion
209.4 ....Sizing to desired dimension
209.5 .....Stretching extruded material
209.6 ...Curing or polymerizing operation during extrusion, e.g., cross-linking, vulcanizing, etc.
209.7 ...At least two distinct operational temperatures employed during the extrusion operation
209.8 ...Providing special flow channel feature, e.g., varying dimension of flow channel or varying direction of flow of material in the extruder, etc.
210.1 ..And reshaping
210.2 ...Including a step other than application or removal of tension
210.3 ...With application of agent other than water or air to workpiece
210.4 ....During or after final shape change
210.5 ...With temperature gradient across cross section of workpiece or heat treatment after all shaping
210.6 ...With processing before extrusion or inclusion of additive

	FORMING CONTINUOUS OR INDEFINITE LENGTH WORK
	.Shaping by extrusion
	..And reshaping
210.7	...Plural stretching steps or stages
210.8	...Of filament
211	..Utilizing added agent, e.g., flux, plasticizer, dispersing agent, etc.
211.1	..Centripetal extrusion
211.11	..Nonresinous material only, e.g., ceramic, soap, cellulose, etc.
211.12	..Processing or treatment after extrusion
211.13	...Contact of extrudate with fluid other than ambient air
211.14	....Filament (e.g., fiber, etc.)
211.15	.....Plural treatment stages of zones
211.16	.....Extractive fluid or effects reaction
211.17	.....Heating
211.18	....Plural treatment stages or zones
211.19	....Extractive fluid or effects reaction
211.2	....Heating
211.21	..Screw extruder or screw feeder device
211.22	...Filament (e.g., fiber, etc.)
211.23	...Plural screws, plural extruders, or plural stage extruder
211.24	..Curing or polymerization in the extruder (includes incomplete polymerization or curing, or coagulating rubber)
212	.By casting liquids on a solid supporting or shaping surface
213	..Utilizing surface parting, anti-stick or release agent
214	..To form nonplanar article or surface
215	..By dipping the forming surface into the forming material
216	..Rubber or synthetic resin containing liquid
217	..Carbohydrate containing liquid
218	...Solidifying by applied reagent
219	WITH STEP OF MAKING MOLD OR MOLD SHAPING PER SE
220	.Utilizing surface to be reproduced as an impression pattern
221	..With destruction of pattern or mold to dissociate
222	..Anatomical surface, i.e., using body area as an impression pattern
223	...Pedal
224	..With flexible inversion of a forming surface
225	..Forming mold from fluent material
226	...With initial molding or treating of a surface to be reproduced
227	....Developing a surface negative and then a surface positive mold
228	FORMING STRESSED CONCRETE ARTICLES
229	PRESTRESSING SOLID BODY AND UNITING IN STRESSED CONDITION
230	UTILIZING HEAT RELEASABLE STRESS TO RESHAPE SOLID WORKPIECE, E.G., ELASTIC MEMORY, ETC.
231	APPLYING TENSILE STRESS TO WORKPIECE DURING HEAT CURING
232	DISPARATE TREATMENT OF ARTICLE SUBSEQUENT TO WORKING, MOLDING OR SHAPING
233	.Washing of article
234	.Effecting temperature change
235	..Annealing
235.6	...After stretching running or indefinite length work
235.8	....Biaxial stretching of film
236	..Completing vulcanization or polymerization
237	..Cooling
238	COMBINED
239	MECHANICAL SHAPING OR MOLDING TO FORM OR REFORM SHAPED ARTICLE
240	.Separately introducing reacting materials into mold
241	.To produce composite, plural part or multilayered article
242	..Joining parts for relative movement
243	..Bristled or tufted article making
244	..Uniting shoe part to upper
245	..Multicolored surface
246	...One component self-sustaining prior to compositing
247	....Positioning component in mold
248	..Fusion bonding of preformed bodies and shaping at joint only
249	..Mechanically securing parts together by reshaping joint portion only
250	..By separately molding different article portions
251	...Spaced molded portions interconnected by solid preform
252	....Molding portions along sheet edge
253	....Building unit having spaced walls
254	...Separate stage covering of different preform areas
255	...Sequential formation of portion on same mold or a preform surface
256	....Utilizing clay, sand or calcareous slurry
257	..One component is a fibrous or textile sheet, web or batt
258	...Joining a plurality of superposed fibrous or textile layers
259	..Shaping material and uniting to a preform
260	...Co-molding plural fluent materials and uniting to preform
261	...Uniting spaced preforms, by introducing fluent material therebetween
262	....Concentric preforms
263	...To unite independent contacting preforms
264	...Preventing adherence of shaped material to preform
265	...Conditioning or treatment of preform
266	...Simultaneously shaping material and reshaping preform
267	...Against inner surface of hollow preform
268	....Cap or cup-like preform, e.g., container closure, etc.
269	....Cavity lining type
270	.....Utilizing centrifugal force, e.g., pipe lining, etc.
271.1	...Preform embedded in or surrounded by shaped material
272.11	....Electrical component encapsulating
272.12	.....Nonresinous encapsulant
272.13	.....With curing procedure, or procedure or treatment to compensate for differential expansion
272.14	.....Plural electrical components
272.15	.....With component positioning procedure or incorporation of article positioning means
272.16	.....Transducer, or electric lamp or space discharge device
272.17	.....Semiconductor or barrier layer device, e.g., integrated circuit, transistor, etc.
272.18	.....Condenser or resistor
272.19	.....Dynamoelectric machine, electromagnet, transformer inductors or coils

	MECHANICAL SHAPING OR MOLDING TO FORM OR REFORM SHAPED ARTICLE
	.To produce composite, plural part or multilayered article
	..Shaping material and uniting to a preform
	...Preform embedded in or surrounded by shaped material
	....Electrical component encapsulating
	.....Dynamoelectric machine, electromagnet, transformer inductors or coils
272.2	......Motor or part encapsulated
272.21	.....Battery or part encapsulated
273	....Shaped material extends through holes in preform
274	....Preform particularly provided with means to provide interlock with shaped material
275	....Positioning or maintaining position of preform relative to mold surface
276	.....Preventing flash
277	.....Maintaining preforms in spaced relationship
278	.....By removable means
279	....Applying fluent material to preform
279.1	....Preform is completely surrounded by shaped material
280	.Reshaping running or indefinite-length work
281	..Longitudinally advanced coiling (nonplanar)
282	..Creping or crinkling
283	...By doctoring from drum
284	..Deforming the surface only
285	..Bending
286	...Corrugating
287	....And subsequent reshaping of corrugated material
288.4	..Stretching by applying tension
288.8	...Nonuniform product, e.g., porous, etc., or with tensioning before application of heat
289.3	...With treatment other than heating before stretching
289.6	...With shrinking or with liquid contact during or after stretching
290.2	...Biaxial or transverse to travel direction
290.5	...Of filament
290.7	....Including contact with mechanism in stretch path, e.g., snubbing, etc.
291	.Stretching or stretch forming
292	..By drawing over a form
293	.Deforming the surface only
294	.Plural sequential shaping or molding steps on same workpiece
295	..Molding followed by bending or twisting
296	..One step reshapes portion only of article
297.1	.Forming plural articles
297.2	..Including introducing material under pressure into a closed mold cavity, e.g., injection molding, etc.
297.3	...With plural molds on belt or turntable
297.4	..Forming multiple stacked or nested articles or including multi-layer pressing
297.5	..Reshaping or treatment of a preform, e.g., vulcanizing, etc.
297.6	..With plural molds on a moving surface
297.7	...With linear movement of the molds
297.8	..Simultaneous formation of plural articles
297.9	...Of primarily inorganic material, e.g., concrete or ceramic, etc.
298	.By casting on a liquid surface
299	.Shaping against forming surface, e.g., casting, die shaping, etc.
300	..Utilizing release agent in molding material
301	..Accretion from bulk
302	...Slush casting type
303	...Accretion of varying wall thickness or control of accretion by compound movement of form
304	...Facilitating removal of article from form
305	...Successive dipping steps into same material
306	...Conditioning or treating material or form to effect deposition
307	...Treating accreted material on form with added agent or reactant
308	..Incremental layer molding type
309	..Spraying or flinging material against a shaping surface
310	..By rotation of material or material shaping member
311	...Utilizing centrifugal force
312	...Inner relatively rotating member to form hollow article
313	..Utilizing a flexible, deformable or destructable molding surface or material
314	...Utilizing fluid-expansible mold
315	....Toroidal mold bag
316	...Utilizing sheet-like material
317	...Removing mold by destruction
318	..Molding trapped undercut article portion
319	..Applying heat or pressure
320	...Reshaping solid work or introducing solid work into mold cavity
321	....Sponge-like or foamed work
322	....Initially softening workpiece
323	....Sliding motion between material and mold surface (extruding finite articles)
324	....Woven or felted sheet-form work
325	....Utilizing closed mold cavity
326	.....Toroidal work, e.g., tire, etc.
327	...Differential heating or cooling in mold
328.1	...Introducing material under pressure into a closed mold cavity, e.g., injection molding, etc.
328.2	....Material is nonthermoplastic
328.3	.....Toroidal work, e.g., tire, etc.
328.4	.....Utilizing a transfer chamber
328.5	......With preformed charge
328.6	.....Including mixing of reactants
328.7	....Including changing mold size or shape during injection or between multiple stages of injection
328.8	....With multiple injectors, mold cavities, or multiple steps of injection of material
328.9	....Including operation or design to minimize formation of gate, sprue, or flash
328.11	....Including movement of mold relative to injector
328.12	....Including specified direction or condition of flow in mold
328.13	....Including injection at two or more pressures
328.14	....With heating or cooling
328.15	.....Of injection nozzle
328.16	.....Of mold

	MECHANICAL SHAPING OR MOLDING TO FORM OR REFORM SHAPED ARTICLE
	.Shaping against forming surface, e.g., casting, die shaping, etc.
	..Applying heat or pressure
	...Introducing material under pressure into a closed mold cavity, e.g., injection molding, etc.
328.17	....Pretreatment or preparation of charge material
328.18	.....Mixing of filler, dye, or pigment
328.19	.....Including feeding to accumulator
330	...Organic material shaping
331.11	....Synthetic resin containing
331.12	.....Polymer having heterocyclic group or polymer derived from monomer having heterocyclic group except heterocyclic derived solely from carboxylic acid, i.e., cyclic imide, lactam, lactone, or anhydride
331.13	.....Polymer derived from monomer having at least two ethylenic groups, e.g., ABS rubber, chloroprene, etc., or with natural rubber
331.14	.....Fluorine
331.15	.....Ethylenically unsaturated polymer or polymer derived from ethylenically unsaturated monomer
331.16	......Nitrogen containing polymer
331.17	......Hydrocarbon polymer
331.18	......Carboxylic acid or derivative, e.g., acrylic, etc.
331.19	.....Nitrogen containing, e.g., polyamide, polyurethane, etc.
331.21	.....Carboxylic acid or derivative
331.22	.....Polymer derived from aldehyde
332	...Fusing or melting inorganic material
333	...Inorganic hydraulic settable material shaping
334	..Article or material ejecting, core or mold stripping or separating
335	...By direct fluid pressure or pressure differential
336	...Ejecting or stripping before full set or cure of work
337	..Utilizing particular mold material
338	...Coating or lining
339	.Bending or twisting of work
340	TREATING SHAPED OR SOLID ARTICLE
341	.Solvent polishing type
342 R	.To shrink
342 RE	...Relaxation of running or indefinite length work
343	.To swell or plasticize
344	.To remove entrained material from article
345	.By a temperature change
346	..To anneal or temper
347	..To complete vulcanization or polymerization
348	..To cool
349	MISCELLANEOUS
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	DIGESTS
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DIG 1	Methods of blow-molding cellular containers
DIG 2	Molding cellular aldehyde resins
DIG 3	Molding cellular pvc-isocyanate resins
DIG 4	Molding and forming bendable and flexible product from rigid preform
DIG 5	Use of one or more blowing agents together
DIG 6	Molding microballoons and binder
DIG 7	Binding and molding cellular particles
DIG 8	Fibrillating cellular materials
DIG 9	Pre-expansion of foamed polystyrene
DIG 10	Foamed polystyrene mold filling
DIG 11	Molding styropor using steam probes -batch
DIG 12	Molding styropor using steam probes continuous
DIG 13	Cell size and distribution control while molding a foam
DIG 14	Forming integral skin on a foamed product
DIG 15	Aging of foamed resin products
DIG 16	Molding foamed polypropylene articles
DIG 17	Molding a foam containing a filler
DIG 18	Cross-linking a thermoplastic linear foam during molding
DIG 19	Inorganic fiber
DIG 20	Tar bonded
DIG 25	Metallic oxide
DIG 26	Composite fibers made of two or more materials
DIG 27	Process of spinning viscose where viscose has high degree or polymerization
DIG 28	Stretching filaments in gas or steam
DIG 29	Mixed resin filaments
DIG 30	Use of anatomy in making a mold or using said mold
DIG 31	Processes of making tile and tile-like surfaces
DIG 32	Processes in molding using asbestos or asphalt
DIG 33	Blow-molding articles of nonuniform thickness
DIG 34	Processes and molds for making buttons
DIG 35	Use of Ca O with refractories
DIG 36	Process of making metal-ceramics
DIG 37	Processes and molds for making capsules
DIG 38	Making film or tubes from casein
DIG 39	Treatment of clay before and after molding
DIG 40	Processes of coiling plastics
DIG 41	Processes of molding collapsible tubes
DIG 42	Processes of molding involving cross linking
DIG 43	Processes of curing clay and concrete materials
DIG 44	Using destructible molds or cores in molding processes
DIG 45	Molding using an electrical force
DIG 46	Molding using an electrical heat
DIG 47	Processes of splitting film, webs or sheets
DIG 48	Processes of making filters
DIG 49	Processes of using fly ash
DIG 50	Use of fluid pressure in molding
DIG 51	Use of fluidized bed in molding
DIG 52	Processes of making corrugated tubes for gas mask
DIG 53	Processes of using glass filler in molding process
DIG 54	Processes in making insulators
DIG 55	Processes for making jewelry
DIG 56	Processes of molding lactams
DIG 57	Processes of forming layered products
DIG 58	Processes of forming magnets
DIG 59	Processes in which a partial cure is involved
DIG 60	Processes of molding plastisols
DIG 61	Processes of molding polyamide
DIG 62	Processes of molding porous films
DIG 63	Processes of molding porous blocks
DIG 64	Processes of using preforms in molding
DIG 65	Processes of preheating prior to molding
DIG 66	Processes of reshaping and reforming
DIG 67	Forming ring-like structure
DIG 68	Roll
DIG 69	Processes of using scrap in molding

DIG 70	Processes for forming screens or perforating articles
DIG 71	Processes of shaping by shrinking
DIG 72	Processes of molding by spraying
DIG 73	Processes of stretching
DIG 74	Processes of repairing tires
DIG 75	Processes of uniting two or more fibers
DIG 76	Processes of uniting two or more parts
DIG 77	Processes of molding urethanes
DIG 78	Processes of molding using vacuum
DIG 79	Processes of molding articles of vinylidene chloride
DIG 80	Processes of waterproofing
DIG 81	Plastic net
DIG 82	Embossing by foaming
DIG 83	Injection molding of polyolefin-type foam
DIG 84	Conversion of foamed resinous buns into foamed billets having geometrical cross-sections

44 PROCESS
45 .Plugging or tapping
46 .Cooling
47 .Tuyere operation
48 MEANS FOR CUTTING SOLID METAL WITH HEAT, E.G., BLOWPIPES
49 .With waste entrapping fluid
50 .Means for cutting continuously cast workpieces
51 .Means for removing surface material, e.g., scarfing
52 ..Having means to simultaneously scarf multiple sides of a workpiece
53 ..Having workpiece-contacting cutting means spacer
54 .With means for cutting tubular workpiece
55 ..Having torch mount secured within workpiece
56 ..Having means to circumrotate torch about workpiece
57 ..With means to rotate workpiece
58 .With pattern control means
59 ..With tape-control means
60 ..With automatic line-follower means
61 ..With means to rotate workpiece
62 ..Having articulated arm supporting torch
63 ...With pantograph arm means
64 ..Having spaced, superposed templet
65 .With work supporting grate means
66 .Hand held, work riding torch
67 .With wheeled carriage torch mount
68 ..Having work contacting torch spacing means
69 ..With work-spanning torch mount
70 .Circle cutter
71 .Having torch solely supported by workpiece
72 .With cantilevered arm torch support
73 ..Having carriage-supported cantilevered arm
74 .Having adjuvant material feed
75 ..Solid material
76 .Having torch spacing means
77 .With torch mounting means
78 WITH CONTROL MEANS RESPONSIVE TO SENSED CONDITION
79 .By treated material sampling means
80 .With analyzer or computation means
81 .With means supplying a treating agent
82 ..Correlated flow of diverse fluents
83 ...With flow rate sensor
84 ...With means sensing moisture content
85 ..Individual control of diverse inputs
86 ..By means positioning dispenser
87 .With temperature sensor
88 ..In a fluid
89 .With pressure sensor
90 .With means responsive to condition of treated material
91 ..By means sensing weight or density of work
92 ..By means sensing position of work
93 ...By means sensing presence or absence of work
94 ...By means sensing level of molten liquid
95 ....By float means
96 WITH PROGRAMMED, CYCLIC, OR TIME RESPONSIVE CONTROL MEANS
97 .By timer
98 ..Having driven disk or drum
99 WITH RECORDING, INDICATING, INSPECTION OR MEASURING MEANS
100 .Having observation means
101 HAVING MEANS FOR LEACHING AND SUBSEQUENTLY PRECIPITATING A METAL
102 MEANS TREATING A CONTINUUM OF WORK
103 .With heating means
104 ..By joule effect
105 ..Discrete article continuum
106 ..Overlapped planar coil
107 ..In a molten material bath
108 ..In a muffle furnace
109 ..With cooling by contact with solid heat sink
110 ..In specific environment, e.g., vacuum
111 ..With fluid contact means
112 ...In liquid bath
113 ...In liquid spray
114 HAVING MEANS FOR CONTACTING A SOLID METALLIFEROUS MATERIAL OR METAL OBJECT WITH A LIQUID
115 .With means changing the shape of a treated object, e.g., roller means
116 ..Spring shaping means
117 .With means to prevent warping of treated object
118 ..Of a gear wheel
119 ..With heating of object
120 .By immersing an article to be treated in bath of molten material, e.g., salt bath
121 .With heating means, e.g., flame contact
122 ..By means treating metalliferous materials, e.g., ores
123 ..By heating means adapted to be inserted into a hollow object
124 ..By means heating selected areas of an object
125 ...By means specialized to heat an article having an irregular contour (e.g., cams, gears)
126 ....By heating means configured to fit between adjacent gear teeth
127 ..Unitized heating and fluid contact means
128 ..By electric heating means
129 ...Inductance type
130 ..Having bath for contacting the work with liquid
131 ...With means to agitate or control temperature of bath
132 ...Having work introducing elevator
133 ...Having means to move work through bath
134 .By means contacting only selected areas of treated article with liquid
135 WITH CLEANING OR LUBRICATING MEANS
136 .Fluid injector cleaner
137 WITH MEANS TO COMMINUTE OR DISINTEGRATE SOLIDS
138 WITH MEANS TO PREHEAT GAS
139 .Having heat storage means, e.g., checkers, stroves
140 .By heat generating means
141 .By remote heat exchanger
142 GEOGRAPHIC OR STRUCTURAL INSTALLATION
143 .Having refining vessel with travelling support
144 WITH MEANS TREATING OR HANDLING GASES EXHAUSTED BY TREATING MEANS
145 .Having means to treat or handle gases evolving from rotary furnace
146 .By contacting gas with nonmetallic liquid
147 ..By liquid spraying
148 .By condensing and collecting a volatile constituent
149 ..Within evacuated chamber
150 ..Having molten metal splashing means
151 ..By cascading material evolving the gas
152 ..By indirect liquid heat exchange means
153 ..Having retort condenser
154 ..Vertical shaft furnace

WITH MEANS TREATING OR HANDLING GASES EXHAUSTED BY TREATING MEANS
155 .With heat exchanger, e.g., waste heat boiler
156 .By means recycling exhaust gas
157 .By separating particles from evolved gas
158 .Hood
159 .Offtake
160 COMBINED OR CONVERTIBLE
161 MEANS FOR EXTRACTING AND REFINING METAL
162 .With separate refining zone
163 ..With rotating heating vessel
164 ..With heated vertical extracting means
165 AMBULANT VESSEL
166 TREATING VESSEL WITH DISTINCT MOLTEN MATERIAL HOLDING MEANS, E.G., FOREHEARTH
167 THERMIT REACTION VESSEL
168 MEANS FOR TREATING ORES OR FOR EXTRACTING METALS
169 .Amalgam-type extraction means
170 .By means precipitating metal from solution
171 .By means applying heat to work, e.g., furnace
172 ..Fluidized zone
173 ..Rotary drum-type furnace
174 ..With safety device
175 ..With separate preheat chamber
176 ..With means for moving solid material to or through heating zone
177 ...By means for moving charge through zone
178 ....Traveling grate
179 .....With seal means
180 .....Train of grate elements
181 ....Means forming cascading array
182 ...By fluid current
183 ...By power-driven means conveying solid charge into zone
184 ...Bell and hopper type
185 ..With work supporting grate
186 ..With means for feeding fluids
187 ...With flow regulating means
188 ...With common outlet means to feed diverse fluids
189 ...With means to cool fluid feeding means
190 ..With cooling of heating means
191 ...By means cooling material discharge means
192 ...By direct fluid contact
193 ...By means embedded in heating means
194 ....Having means to facilitate removal of cooling means
195 ..With discharge means
196 ...With trough-shaped outlet, e.g., runner
197 ..Shaft-type furnace, e.g., blast furnace
198 ...Having external support
199 ...Having specific top structure
200 MEANS FOR MELTING OR VAPORIZING METAL OR TREATING LIQUEFIED METAL
201 .Slag refining means
202 .Spray refining means
203 .By means specialized to puddle metal
204 .Means applying centrifugal force
205 .Means to melt and separate metal from mass of diverse constituents
206 .Means for melting-type material, e.g., Linotype
207 .By providing, treating or protecting environment, e.g., vacuum
208 ..By application of vacuum
209 ...By upward flow of metal within treating zone
210 ....Recirculating material to its source
211 ...Enclosed within casing
212 .Refining means with separate metal-melting zone
213 .Revolving drum-type furnace
214 .Reverberatory refining vessel, e.g., open hearth
215 .Continuous refining
216 .By means introducing treating material
217 ..Gaseous treating material
218 ...Having fluid inlet formed in vessel wall, e.g., tuyere
219 ....Having intersecting streams converging on central axis of vertical furnace
220 ....Having porous outlet
221 ....By means to introduce diverse material
222 .....Concentric flow paths
223 ....Having control means
224 ....Having tuyere formed in plug bottom
225 ...Lance
226 ....With manipulating means
227 .By separating metal in a molten mass from undesired material, e.g., slag
228 ..By skimming a material
229 ..By baffle means
230 ...At discharge outlet
231 ...In discharge trough, e.g., runner
232 ..Settling receptacle, e.g., slag pot
233 .By stirring or mixing molten metal
234 ..Induction stirring
235 ..Having impeller means
236 .With means to discharge molten material
237 ..Including electromagnetic means
238 ..Means for removing residual material
239 ..By changing ambient pressure on material surface, e.g., suction
240 ..With means to tilt heating means
241 .With means to cool treating means
242 .Heated melting pot
243 .Bessemer-type treating vessel
244 ..By mounting vessel to revolve about its longitudinal axis
245 ..With means pivotally mounting vessel
246 ...Means mounting vessel to trunnion ring
247 ...Means mounting vessel to U-shaped trunnion support means
248 .Horizontal, rotatable, cylindrical type
249 MEANS TREATING SOLID METAL
250 .Having evacuated chamber
251 .By contact with gas
252 ..With heating means
253 ...Bottom feeding furnace
254 ...With indirect heat-exchange means for gas
255 ...Having work contained in separate, noncommunicating chamber, e.g., muffle
256 ....Bell furnace
257 ...Having atmosphere generating means within treating zone
258 ..By contacting only selected areas of object
259 .By cooling of the solid
260 ..By contact with solid heat sink
261 .By flame contact heating
262 .Fluid tight heat transferring box shield or hood (e.g., annealing box)
263 ..Bell-type hood, or support for such hood
264 ...Having packing at hood lip
265 MEANS FOR INTRODUCING FLUENT INTO VESSEL, E.G., TUYERE
266 .With flow control means or internal flow guide

	MEANS FOR INTRODUCING FLUENT INTO VESSEL, E.G., TUYERE
267	.Having means for simultaneously feeding diverse materials
268	..Having plural outlets
269	.Having drain means or cleaner insertion means, e.g., punch hole
270	.having means preventing damage to introducing means, e.g., wear linings, cooling
271	MEANS SEALING OR OPENING APERTURE IN VESSEL
272	.By means plugging aperture
273	..By means injecting plugging compound, e.g., mud gun
274	MEANS FOR HOLDING OR SUPPORTING WORK
275	.Receptacle
276	..With means movably supporting receptacle
277	...By bed of rollers
278	..Having corrugated wall
279	.Grate
280	LININGS
281	.With making or repairing means
282	.With metallic means to prevent lining abrasion
283	.Having particular lining element shape
284	.Having specific grain size
285	.With means allowing for expansion
286	.With specific lining enclosing structure
287	MISCELLANEOUS
	********************************
	CROSS-REFERENCE ART COLLECTIONS
	********************************
900	METAL MELTING FURNACES, E.G., CUPOLA TYPE
901	SCRAP METAL PREHEATING OR MELTING
902	BLOWPIPES SPECIALIZED TO TRANSVERSELY CUT OR NOTCH BLOOMS, BILLETS OR BARS
903	SAFETY SHIELDS
904	BLOWPIPE CUTTING HEADS
905	REFRACTORY METAL-EXTRACTING MEANS

CLASS 267 SPRING DEVICES

DECEMBER 1990

1.5 PACKING EXPANDER OR CONSTRICTOR
80 SPRING PANEL
81 .Composite springs of diverse material, e.g., metal and non-metal
82 ..Vented fluid chamber modifies action of metallic spring
83 ..Superposed layers; metal and non-metal
84 ...Metal layer is compressible coil spring
85 .Multistage springs
86 .Diverse types of superposed metallic springs
87 ..Sinuous spring loading surface supported by other spring
88 ..Compressible coil spring loading surface supported by other spring
89 .With means to vary preliminary tension of spring
90 .With means to dampen vibration of springs, e.g., sound deadening
91 .Spring panel comprises vertically oriented compressible coil springs
92 ..Plural superposed coils
93 ..Panel comprises spring of varying capacities
94 ..With padding protector on spring end
95 ..Loading surface includes component other than coil spring
96 ..With resilient side or end, e.g., edge roll
97 ..With reinforcement or extension for border wire
98 ..With diagonal surface-to-frame brace
99 ..Resiliently mounted on frame by tensile springs
100 ..Mounted on frame spanning strips
101 ..Spring rows supported by row separating stringers
102 .With cantilevered surface extension, i.e., "soft edge"
103 .Spring means spacing loading surface vertically from plane of supporting frame
104 ..With supplementary spacing means intermediate ends of surface
105 ..Stiffener or bracer for loading surface
106 ..Multiple sections span frame
107 ..By inwardly bowed portion, i.e., "fishmouth" type
108 ...With coiled apex, i.e., "safety pin" type
109 ..By outwardly bowed portion
110 .Panel secured peripherally to supporting frame
111 ..Panel secured to tension frame inwardly
112 ...Secured by resilient connectors
2 VEHICLE
3 .Railway
4 ..Coil
5 .Perambulator
6 .Bolster
7 ..Leaf
183 .Parallel depression (e.g., having stabilizer bar)
184 ..Duplex
185 ...Single pivot
186 ..Fluid stabilizer
187 ...Including torque bar or pump
188 ..Torque bar or tube stabilizer
189 ...And elastomeric member
190 ...And coil spring
191 ...And retarder
192 ..Leaf spring stabilizer
193 ...Leaf spring acting between pivoted links
194 ..Plural nontorsion coil springs
195 .Mechanical spring and nonresilient retarder (e.g., shock absorber)
196 ..Friction (e.g., "snubber")
197 ...Including flexible strap connector
198 ....Strap forms friction element
199 ....Flat spiral spring
200 ...Having lubricating feature
201 ...Elastomeric spring or friction element
202 ....And helical coil spring
203 .....Plural coil springs
204 ...Friction surface on helical spring
205 ...Including cam or wedge friction element or actuator therefor
206 ....Helical cam surface
207 ....Plural axially spaced expandable friction rings
208 ....Including relatively rotating friction surfaces (e.g., drum type)
209 ....Including helical coil spring
210 .....Transversely oriented coil biasing friction surfaces
211 .....Plural laterally spaced coils (e.g., spring group)
212 .....Nested coil springs
213 ......Inside friction shell
214 ...Friction surface formed on or biased by additional spring
215 ....Relatively rotating friction surfaces (e.g., drum type)
216 ...Coil spring for biasing vehicle parts and friction surfaces
217 ..Fluid retarder
218 ...With separate pump or adjustment for spring loading
219 ...Elastomeric spring
220 ....Mounted at end of retarder
221 ...Helical coil spring
222 ....Quadrilateral suspension
223 ....And rocking actuator arm or rotary fluid displacement member
224 .....Plural mechanical springs for biasing vehicle parts
225 ....Plural mechanical springs for biasing vehicle parts
226 ....Spring within coaxial fluid chamber
227 ...Leaf spring
228 .Lever and nontorsion spring
229 ..Leaf spring
230 ...Quadrilateral suspension
231 ...And coil spring
232 ....And roller
233 ....And "overload" bumper
234 ....Including adjustment for spring loading
235 .....Adjusting screw coaxial with coil spring
236 ....Plural coils between vertically spaced leaf springs
237 ....Plural coaxial coils
238 .....Nested coils
239 ....Having leaf-end-connecting lever
240 .....Coil spring between lever and vehicle part
241 ...And fluid pressure spring
242 ...Including adjustment for spring loading
243 ...And roller or bearing to accommodate deflection of spring
244 ...Vertically spaced leaf springs (e.g., elliptic)
245 ...Having serially pivoted levers at end of spring
246 ...Transverse leaf spring
247 ...Center acting or resiliently biased lever
248 ..Coil spring

	VEHICLE
	.Lever and nontorsion spring
	..Coil spring
249	...Enclosed spring
250	....Plural coaxial coils in enclosure
251	...Plural nontorsion coil springs
252	....Coaxial
253	....Differentially deflected by lever
254	...Quadrilateral suspension
255	...Including adjustment for spring loading
256	..Fluid spring
257	..Elastomeric spring
258	...Annular or spherical
259	.Compound
23	..Leaf, coil, and fluid pressure
24	..Leaf, fluid pressure and liquid
25	..Leaf and torsion
26	...Torsion coil
27	....Leaf-end-connecting
28	..Leaf and coil
29	...Leaf-end-connecting
30	..Leaf and rubber type
31	..Leaf and fluid pressure
32	...Leaf-end-connecting
33	..Coil and rubber type
34	..Coil and fluid pressure
35	..Rubber type and fluid pressure
36.1	.Leaf
37.1	..And covering
37.2	...Spiral or elastic covering
37.3	...Three serially arranged metallic segments
37.4	...Having lubricant reservoir or pad
38	..Twin, axle interposed
39	..Side bar
40	..Longitudinal
41	..Cantilever
42	..Elliptic
43	..Elliptic and leaf
44	..Semielliptic
45	..Semielliptic and leaf
46	...End-to-end connected
47	..Structure
48	...Auxiliary tensioning elements
49	...Antifriction
50	...Lubrication
51	..Broken-spring supports
52	..Intermediate supports
53	..Clips
260	..Having specific end connection
261	...For elliptic spring
262	...Sliding
263	...Including spring for biasing pivotal connection
264	...Including threaded or grooved bearing surface
265	...Including spring position adjustment or geared connection
266	...Universal joint
267	...Having rolling antifriction elements (e.g., ball bearing)
268	...Having lubrication feature
269	...Including elastomeric material
270	....Including tapered bushing or inner and outer sleeve for cylindrical bushing
271	...Including shackle pivoted to spring and to vehicle
272	.Flat spiral
273	.Torsion
274	..Quadrilateral suspension
275	..Helical torsion coil
276	..And separate elastomeric member (e.g., bushing)
277	..And adjustment for varying spring loading
278	...Screw threaded adjustment
279	..Elastomeric torsion spring
280	...Plural axially spaced elastomeric elements
281	...And attached inner and outer metallic sleeves
282	....Plural concentric elastomeric rings
283	..Multilayer leaf
284	..And housing enclosing spring
285	..Plural torsion springs
286	.Coil
287	..Having stiffener
288	..Conical
289	..Plural coils
290	...Nested
291	...Having guide rods extending through coils
292	.Elastomeric
293	..Including central guide rod or tube through spring
294	..Having rigid spacer plate between plural elastomeric segments
64.11	.Comprising compressible fluid
64.12	..Having lockable strut
64.13	..Including compressible liquid
64.14	..Including chamber at sub-atmospheric pressure
64.15	..With retarder
64.16	...Leveling device
64.17	....Self-pumping
64.18	....Having metering pin for varying spring rate
64.19	....Having flexible wall
64.21	.....Including rolling lobe between telescoping members
64.22	...Having metering pin for varying spring rate
64.23	...Having flexible wall
64.24	....Including rolling lobe between telescoping members
64.25	...Having plural compressible fluid springs
64.26	...Having telescoping cylinders
64.27	..Having flexible wall
64.28	..Including means for charging or discharging spring
66	.Braces
67	..Yielding
68	..Sliding
69	ELASTIC EXTENSION DEVICES
70	.Compression spring
71	..Single
72	...Drawbars inclosed
73	.Tension spring
74	..Single
75	RECIPROCATING-BED-CUSHIONING DEVICES
113	FLUID
114	.Time delay
115	.Draft gear
116	.Bumper
117	.Cushion for person
118	.Expansible-contractible chamber device
119	..Press cushion
120	..Vehicle; for non-support or accessory support cushioning
121	..Compound
122	..Diaphragm or bellows
123	...For valve or throttle control
124	..Piston
125	...For use in well drilling or operating
126	...System
127	....Trans-piston passage
128	...Rigid-material-spring impelled
129	...Seal
130	PRESS CUSHION
131	SEAT SUPPORT
132	.Velocipede or motorcycle
133	.Flexural
134	FRICTION SNUBBER

	FRICTION SNUBBER
135	.Snubbed coil spring or ring pack
136	RESILIENT SHOCK OR VIBRATION ABSORBER
137	.Tool movement dampening
138	.Draft gear
139	.Bumper
140	..Rubber
140.1	.Including additional energy absorbing means or feature, e.g., friction, fluid, etc.
140.2	.Variably preloaded
140.3	.Having diverse resilient element
140.4	..Metallic and nonmetallic
140.5	.Diverse resistance to vibration along different axes
141	.Nonmetallic, resilient element
141.1	..Plural resilient elements with rigid spacer
141.2	..Confined between coaxial, vibrating annular members
141.3	...Including radial contact surface, e.g., tapered or shouldered member
141.4	....Annular flange or collar embedded in resilient element
141.5	.....Flanged or collared innermost member
141.6	....Collapsible wall
141.7	....Arcuate or tapered contact surface
142	CUSHION FOR HUMAN COMFORT
143	.Compound
144	.Zigzag
145	.Rubber
146	.Fibrous pad
147	COMPRESSED WIRE MESH
148	FIBROUS
149	.Glass fiber
150	CENTERING DEVICE
151	COMPOUND
152	.Rubber
153	RUBBER
154	TORSION
155	.Coil
156	..Volute
157	..Also compressible or expansible
158	BENDABLE ALONG FLAT SURFACE (E.G., LEAF SPRING)
159	.Snap spring
160	.Flexural support
161	.Ring or annular spider
162	..Pair or pack
163	.Including tang or spider
164	.Bow spring or superposed spring elements
165	..Zigzag or plural
166	COIL
166.1	.Conical
167	.Circular
168	.Plural, one within another
169	.Including internal brace
170	.Including end thrust member
171	..Equilibrium or over-center
172	..Including cam
173	..Including lever
174	..For dynamic or work environment
175	...Adjustable
176	...Reset
177	..Adjustable
178	..Support type
179	..Particular end connection
180	.Irregular
181	FORAMINATED
182	MISCELLANEOUS
	******************************
	DIGESTS
	******************************
DIG 1	Constant height
DIG 2	Constant height, self-pumping
DIG 3	Spring buckle

CLASS 269 WORK HOLDERS

DECEMBER 1990

1	HAND MANEUVERED OR WORK SUPPORTED TOOL GUIDES
2	.Relatively movable jaws
3	OPERATOR SUPPORTED
4	.Convertible to bench supported
5	.With opening through handle for work supply
6	.Handle manipulation for jaw actuation
7	SOLIDIFICATION OF WORK CONTACTING MEDIUM
8	MAGNETIC HOLDER
9	PLURAL SELECTIVELY USED HOLDERS
10	.Work stop abutment
11	WITH HOLDER ILLUMINATING MEANS
12	WITH DRY RUN WORK DRIVING MEANS
322	SURGICAL SUPPORT
323	.Tilting
324	..Sectional
325	...With means to tilt sections relatively
326	...Rack and pawl maintain sections in adjusted position
327	.With drain
328	.Body member rest or restrainer
13	WITH PRODUCT DISCHARGE FACILITATOR
14	.Product mover
15	WITH CATCH PAN
16	WITH PART OR TOOL HOLDING RECEPTACLE
17	WITH GROUND TRAVERSING MEANS
19	WITH PLUMB INDICATOR
20	WITH FLUID MEANS
21	.Vacuum-type holding means
22	.With movable diaphragm
23	.With safety means
24	.Plural positioning means sequentially operated
25	.Cylinder-piston means directly moves jaw(s)
26	..With equalized pressure on plural (nonopposed) jaws
27	.Cylinder-piston means in series with additional positioning means
28	..With separate air means in series with liquid means
29	..Including self-contained manual pump means
30	..With common fluid means for holding and releasing
31	...Cylinder-piston unit rotatably and/or pivotally mounted
32	..Mechanical means between fluid means and jaw
33	...Including opposed cylinder-piston means
34	...Single fluid unit moves plural spaced jaws
35	.With guide means
36	FENCE BOARD HOLDER AND GAUGE
37	PLURAL HOLDERS TO HOLD WORKPIECES RELATIVE TO EACH OTHER
38	.Fletching jig (i.e., arrow feathering holder)
40	.Fixed work-contacting portions for each holder
41	.Workpieces normal to each other (e.g., miter clamps)
42	..Means for simultaneous actuation of holders
43	.Workpieces parallel to each other (e.g., box-shook clamp)
44	..Three holders
45	.With means to relatively array or arrange holders
46	SUSPENDED HOLDER
47	HOLDER INSERTED WITHIN WORK APERTURE
48	.With tool couple element
48.1	.Expandable mandrel
48.2	..Plural pin man
48.3	...Having inter
48.4	....And coil spring
49	.Inserted holder movable relative to work backup
50	.Holder mounted for movement
51	..Compound or plural movement
52	.Within concentric opening
53	PIN-TYPE HOLDER
54	.With work-overlying clamp
54.1	.With means to drive pin into work
54.2	..Including opposed coacting pins
54.3	...Three or more pins
54.4	.With work-underlying support
54.5	..Pin perpendicularly extended
55	HOLDER MOUNTED FOR MOVEMENT
56	.Relative to a station
57	..Rotary (e.g., dial type)
58	.Including means to shift holder position
59	..With means to lock shift means
60	..Screw means
61	..Gear means
62	..Treadle means
63	.With indexing steps
64	..Corrugated
65	..Threaded
66	..Cam or eccentric means
67	..Pin-rack
68	..Pawl-rack
69	..Peg-hole
70	...With bias means
71	.With plural means for changing holder positions
72	..Single lock for plural means
73	..Means for dual position only
74	.Means for position lock
75	..For universal joint
76	..Set screw type
77	..Periphery clamp type
78	...Split ring type
79	..Effective on a movable brace
80	..For yoke type
81	..Of holder to table (i.e., reference base or wall)
82	..Plane bearing surfaces clamped together
83	...Radial bearing surface type
84	....Central clamp
85	....Plural clamps
86	RELATIVELY MOVABLE JAWS
87	.With tool couple element
87.1	..With guide means
87.2	...Slot type
87.3	...Hole type
88	.Convertible to other type or form of holder
89	.Jaw actuation locks holder position relative to base
90	.With separate means to lock jaw(s) after actuation
91	.Clamp couple element with fastening means
92	..With plural actuating means
93	..Responsive to element actuating means
94	..Rocking-element type
95	.With means to fasten holder to support (e.g., portable)
96	..Wrench or plier type of work holder
97	..Clamp type fastening means
98	...Unitary fastener-jaw and holder-jaw
99	..Socket type fastening means
100	...Aperture in support
101	..Threaded fastening means
102	..Nail or spur fastening means
103	.For cable about thimble (e.g., rigger's vise)

RELATIVELY MOVABLE JAWS
.Plural jaw pairs, angularly oriented, for common work
105 ..Three jaw couples in three nonparallel planes
106 ...With actuating means for each couple
107 ..Interrelated actuating means
108 ...Constricting loop common to plural jaw pairs
109 ...Four relatively movable corner-angled jaws
110 ..One actuated jaw carries a second actuated jaw
111 ..Quadrilateral frame type
112 ...Diagonally moved jaw
113 ...Plural actuating means for one side
114 ....Plural actuators on each of two sides
115 ...Actuator located at corner
116 ....Actuators at diagonal corners
117 .....Actuator at each corner
118 ...Actuated jaw couples perpendicularly related
119 ....Actuator for each side
120 ...One couple adjusted and one couple actuated
121 ...Adjustment means intermediate ends of side
122 ...Adjustment means including attached wedge means
123 ....Wedge means attached by chain
124 ...Adjustment means at diagonal corners
125 ....Adjustment means at four corners
126 .Including pivoted yoke frame jaw carrier
127 ..With specific latch means
128 ...Latch means includes jaw actuating element(s)
129 ..With jaw actuating means intermediate yoke legs
130 .Including constrictable loop (strand or articulated) jaw
131 ..Flaccid loop
132 ..With means to actuate a coacting jaw
133 .Weight of a vertically disposed panel actuates jaws
134 .With means for "hold-down" component of force
135 ..With rockable work contacting member
136 ..Moved by linearly acting jaw
137 ..Inclined actuator and/or jaw travel
138 ..With wedge or cam means
139 .With means to align coacting jaw faces
140 .With separate positioning means for each of jaw pair
141 ..Adjustable positioning only
142 ..Separate means to actuate each of a jaw pair
143 ...Portable C-clamp type
145 ...Same actuator type for each jaw
146 ..Means to both actuate and adjust the same jaw
147 ..Portable straight beam type
148 ...Plural parallel beams
149 ...Extensible beam
150 ...Pivoted jaw actuator means
151 .With means to orient actuating force on jaws
152 .Plural jaw pairs
153 ..With common actuating means
154 ..One jaw common to plural coacting jaws
155 ..Acting in intersecting planes
156 .Three coacting work grippers
157 .With means to bias jaw(s) toward nonholding position
161 ..Leaf spring between pivoted jaws
162 ..Spring coil around or abutting cam or cam follower
163 ..With articulated attachment or insert for jaws
164 .With means for lateral adjustment of jaw portions
165 .Means for direct manual adjustment of jaw(s)
166 ..With cant type adjustment lock
167 ...Including separate cant member
168 ....Means for skewing plural members to actuate jaw(s)
169 ....Plus additional means to release cant lock
170 .....With means to bias member into locked position
171 ...Including interlocking abutting surfaces
171.5 ...With tooth-like surface engaging a planar surface
172 ..With relative axial shift of screw-nut actuating means
173 ...Split nut type
174 ....With separate means for lateral motion of segments
175 .....Including weight biased lever
176 .....Common to spaced parallel screw means
177 .....Control travels with screw
178 ....With screw mounted means for lateral segment motion
179 ...With longitudinally rockable actuating screw
180 ....Direct hand tilt
181 ...Half nut type
182 ....With separate means for lateral nut-screw motion
183 .....With pedal means
184 ...Interrupted thread type
185 ....Antipodal screw thread sectors
186 ....Rack-like nut thread sector
187 ....With continuous screw thread
188 ..With common means to both lock and actuate jaw(s)
189 ...Screw-nut type
190 ....With wedge means in the lock mechanism
191 .....Roll or ball gripping element
192 .....With pawl-rack immobilization means
193 ......Pivotal or rockable pawl
194 ....Pawl-rack adjustment lock
195 .....To immobilize nut
196 ...Cam or eccentric type
197 ....Plural cams in series
198 ....Cam in series with diverse actuator
199 ....Plural cam surfaces
200 ....Including radial face and/or axial follower feature(s)
201 ...Toggle type
202 ...Rack-pinion sector
203 ..With clamp (or friction) type adjustment-lock
204 ...Pivoted eccentric for applying lock
205 ...Plus additional means to release lock
206 ...Deformable elastic plug gripping element
207 ..With detent type adjustment-lock
208 ...Peg-hole
209 ....For pivoted jaw
210 ...Movable rack
211 ...Pin-rack
212 ...Pawl-rack
213 ....Detent positionable by rocking of screw actuator

	RELATIVELY MOVABLE JAWS
216	.Means to actuate jaw(s) (i.e., apply holding force)
217	..Work camming or wedging action type
218	..With common means for each of coacting jaws
219	...Spaced parallel screw means
220	....With specific means for angular positioning of jaws
221	..Plural means for one jaw
222	...Plural intergeared screw-nut actuating means
223	...Including means to move nut
224	..With yieldable means in actuation train
225	..Gear type
226	...Worm
227	...Rack and pinion
228	..Toggle type
229	..Cam, eccentric or wedge type
230	...With position latch
231	...Cam surface is jaw face
232	...Including radial face and/or axial follower feature
233	...Including cam slot or groove
234	...Slidable wedge
235	...Eccentric cylinder or disc
236	...Cam on end pivoted hand lever
237	..For pivoted jaw(s)
238	...First class lever action type
239	...Third class lever action type
240	..Screw-nut type
241	...Differentially threaded
242	...Right and left threaded
243	...Rotating nut means
244	...Screw held at ends for rotation only
245	...With means for relative rotation of elements
246	...Screw travels with jaw
247	....Screw within traveling box-beam guide
248	....With separable or replaceable nut means
249	....C-clamp type
250	....Means to keep faces parallel and/or translate jaw
251	.....Flange and/or slot
252	.....Traveling means parallel to screw
253	......Plural traveling elements coplanar with screw
254 R	..Bias type (e.g., weight, spring, resilience)
254 DF	....Dental flask
254 D	....Drawing board
254 CS	....Coil spring
254 MW	....Movable weighted member
256	.With paralleling mechanism for jaws
257	.Jaw features
258	..Angularly alignable
259	...Attachments and/or inserts
260	....With hook type fastener means
261	....With socket type fastener means
262	....With threaded type fastener means
263	....With yieldable type fastener means
264	....Loosely positioned between coacting jaws
265	..Plural spaced work contacting portions
266	...Settable elements conformable to work contour
267	...With pressure equalizing means
268	...Angular and/or curved jaw face
269	...Opposed jaw faces diversely shaped
270	....Complementary to work configuration
271	..Attachment(s) and/or insert(s)
272	...Interdigitated
273	...Named material
276	...With magnetic fastening means
277	...Coacting elements loosely positioned between jaws
278	....Elements jointed by a pivot or link
279	...Selective
280	....By substitution
281	.....With yieldable type fastener means
282	.....With threaded type fastener means
283	.....With socket type fastener means
284	.....With detent type fastener means
285	.Specific means for wear, strain, protection, assembly
286	.Specific material(s) used for holder
287	HOLDER ENCLOSES WORK
288	.With tool couple element
289 R	WORK-UNDERLYING SUPPORT
289 MR	..Movable roller
290	.With tool couple element
291	..With work-stop abutment
292	..Element projectable through support
293	..In support surface
294	...Cylindrical element
295	...Guiding slot for horizontally moving tool
296	.Gapped support
297	..With movable work-stop abutment
298	...Abutment movable in gap
299	....Plural separately mounted slidable abutments
300	....With abutment position indicator
301	....With abutment lock
302	..Enclosed gap
302.1	.Mixing or kneading board
303	.With work-stop abutment
304	..Attached to movable support portion
305	..Multiple direction restrainer
306	..Suspended abutment
307	.With sight gage
308	.With work supply supporting means
309	.Support mounting means
310	..Support resiliently urged upwardly
311	..Means to hold plural support blocks
312	...By through rod
313	....Blocks enclosed by holder
314	...Blocks enclosed by holder
315	WORK-STOP ABUTMENT
316	.Vertically compressible abutment
317	.Resiliently urged abutment
318	.Abutment mounted between spaced parallel arms
319	.Plural spaced abutment surfaces
320	.With motor drive abutment moving means
329	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	SUPPORTING STRUCTURE HAVING WORK HOLDER RECEIVING APERTURES OR PROJECTIONS
901	COLLAPSIBLE OR FOLDABLE WORK HOLDER SUPPORTING STRUCTURE
902	WORK HOLDER MEMBER WITH V-SHAPED NOTCH OR GROOVE
903	WORK HOLDER FOR ELECTRICAL CIRCUIT ASSEMBLAGES OR WIRING SYSTEMS
904	WORK HOLDER FOR POSITIONING ELEMENTS OF BUILDING IN INSTALLED LOCATION
905	WORK HOLDER FOR DOORS AND DOOR FRAMES
906	WORK HOLDER FOR SKIS
907	WORK HOLDER FOR FISHING FLIES
908	WORK HOLDER FOR CATHODE-RAY TUBES
909	WORK HOLDER FOR SPECIFIC WORK
910	WORK HOLDER FOR PREFABRICATED ROOF TRUSS OR WALL FRAME

CLASS 270 SHEET-MATERIAL ASSOCIATING

1.1	WITH PRINTING
4	.Associating and folding, with rotary printer
5	..Longitudinal web folding
6	...Cylinder collecting, with sheet folding
7	....Additional-sheet associating
8	...Sheet folding
9	....Additional-sheet associating
10	..Web association with cylinder collecting
11	...Additional-sheet associating
12	..Sheet associating
13	...Cylinder collecting
14	....Additional-sheet associating
15	...Additional-sheet associating
16	..Longitudinal sheet folding
17	..Additional-sheet associating
18	.Associating, with rotary printer
19	..Cylinder collecting
20.1	.Folding, with rotary printer
21.1	..Cutting
22.1	.Bed and travelling cylinder, web, perfecting
30	RECIPROCATING-CARRIAGE PILERS
31	.Traveling supply
32	ASSOCIATING AND FOLDING
37	.Stapling or stitching
38	..Cylinder collecting
39	.Zigzag package
40	..Longitudinal web folding
41	.Longitudinal web folding
42	..Cylinder collecting, with sheet folding
43	.Web associating, with cylinder collecting
44	..Additional-sheet associating
45	.Sheet associating
46	..Stop sheet
47	..Cylinder collecting
48	...Additional-sheet associating
49	....Revolving pivotal folding blade
50	...Revolving pivotal folding blade
51	..Additional-sheet associating
52	ASSOCIATING OR DISASSOCIATING
52.5	.Web disassociating
53	.Stapling or stitching
54	.Signature gatherers
55	..Insetting
56	..Interrupter
57	.Insetting
58	.Sheet associating
59	..Stop sheet
60	..Cylinder collecting
95	..Placing sheets in column and inserting marker sheets to indicate number of sheets in column

CLASS 271 SHEET FEEDING OR DELIVERING

DECEMBER 1990

1 SPECIAL ARTICLES
2 .Envelope
3 FEEDING AND DELIVERING
3.1 .Delivering to stack and feeding therefrom
4 .Separators and conveyors
5 ..Pneumatic separator
6 ..Continuous endless conveyor
7 .Continuous endless conveyors
8.1 FEEDING
9 .Multiple supply
10 .Separators and conveyors
11 ..Pneumatic separator
12 ...Endless conveyor
13 ....Side aligner
14 ...Reciprocating conveyor
15 ...Side aligner
16 ..Buckling separator and endless conveyor
17 ...Side aligner
18 .Separators
18.1 ..Magnetic or electrostatic
18.2 ...Cyclicly moving
18.3 ..Surface-piercing element(s)
19 ..Buckling
20 ...Pneumatic
21 ...Rotary
22 ....Pack advancer
23 ....Bottom feed
24 ...Pack advancer
25 ....Feeler control
90 ..Pneumatic
91 ...Plural, relatively-moving suction members
92 ....Laterally receding members (e.g., for tautening sheet laterally)
93 ....Including members for separating and members for forwarding sheet
94 ...Unidirectionally-moving suction member or surface
95 ....Having additional movement
96 ....With means to adjust suction
97 ...Sheet removal by pressurized gas
98 ....And suction means
99 ...Suction member acting on bottom of pack
100 ....Oscillating member bending margin of bottom sheet
101 .....With moving segments supporting remainder of pack
102 ....Suction member reciprocating perpendicularly to sheet
103 ...Sheet-moving action of suction member results from engagement with sheet
104 ...With means to restrain feed of next sheet
105 ...Means effecting preliminary operation on sheets in pack
106 ....Suction member flexing sheet or portion
107 ...Oscillating suction member
108 ...Controlled by valve means
30.1 ...Pack advancer
31 ....Feeler control
31.1 ....Stack on edge
33 ..Adhesive
34 ..Endless belt
35 ...Bottom feed
109 ..Rotary
37 ...Preliminary protrusion
38 ....Feeler control
110 ...Control of separator responsive to sensing of sheet
111 ....Including plural separators or plural sensors
112 ...Suction assisted
113 ...Separator rotating in plane of foremost sheet
114 ...Variably or intermittently driven
115 ....In oscillatory movement
116 ....By over-running one-way drive
117 ...Separator adjustable or retractable relative to pack
118 ....Feed by successive approach and retraction
119 ...Separator having non-uniform periphery
120 ....Including relatively movable elements
121 ...With means to restrain feed of next sheet
122 ....By restrainer having rearwardly moving surface
123 ....By restrainer acting on rear end of sheet
124 ....By adjustable restrainer
125 .....Including restraining roller
126 ...With means to urge pack toward separator
127 ....Including pivoted pack holder
42 ..Reciprocating
128 ...With pack advancer
129 ....With sheet on edge
130 ....And feeler control for advancer
131 ...Bottom feed
132 ....Suction assisted
133 ....With means to prepare pack or bottom sheet for feeding
134 .....By relief of pack weight
135 .....By partial planar movement of bottom sheet
136 ....With means to skip or stop feed
137 ....With means to restrain feed of next sheet
138 .....By adjustable exit or throat
139 ....By pusher reciprocating variably or non-rectilinearly
140 .....Orbital (e.g., four-way) motion of pusher
141 ....By pin (e.g., pointed) pusher
142 ....By adjustable (e.g., for sheet thickness) pusher
143 ....By self-aligning (e.g., yieldable) pushers
144 ....Holder adjustable to size of sheet
225 .By means to change direction of sheet travel
226 .With means to align sheet
227 ..Responsive to sheet-sensor
228 ...To control gripper-couple moving sheet to alignment
229 ..With means to retard sheet before alignment
230 ...By member moved with sheet
231 ....Including suction retarder
232 ..Against aligner entering hole in sheet
233 ..Against rear-edge aligner
234 ..Against plural aligning assemblages
235 ...For incremental travel against successive front-edge aligners
236 ...For front and side alignment of sheet
237 ....Alignment of imbricated sheets
238 ....Including oppositely-disposed side-edge aligners
239 ...Plural aligners selectively used
240 ...Oppositely-disposed side-edge aligners
241 ..By aligning a sheet-holder and its sheets
242 ..Against temporarily-stopped conveyer
243 ..Against front-edge aligner moved in direction of sheet travel
244 ...By retro-moving front-edge aligner
245 ..Against front-edge aligner interposed into sheet path

	FEEDING
	.With means to align sheet
	..Against front-edge aligner interposed into sheet path
246	...Synchronized with intermittently-active conveyor-couple
247	....Including sheet-margin gripper
248	..Against aligner adjacent side edge of sheet
249	...By shifting aligner and gripper-couple laterally of sheet travel
250	...By means to shift sheet laterally against aligner
251	....By oblique conveyor
252	....By gripper-couple pulling sheet laterally
253	..With means to adjust position of aligner
254	...During operation of feeder
255	...With indicator of aligner position
256	.With means to interrupt feeding
257	..Manually controlled (e.g., for alternate-cycle feed)
258	..Responsive to sheet-sensor
259	...Plural sensors
260	....Pneumatic sensors (e.g., to sense superposed sheets)
261	....Laterally spaced sensors (e.g., to sense misalignment)
262	...Excess-thickness sensor
263	....To activate an electric circuit
264	.By means to convey sheet (e.g., from pack to operation)
265	..Responsive to sheet-sensor
266	..With intermittent movement of the sheet
267	..On oscillating or reciprocating conveyor
268	...Including gripper-couple
269	...Including rear-edge pusher
270	..With means to vary speed of conveyor sheet
271	..By rear-edge pusher
272	..Between superposed conveyor couple
273	...Having means to permit separation of couple
274	....Including couple-elements resiliently urged together
275	..On peripheral face of drum or belt
276	...Including pneumatic means
277	...Including gripper-couple
145	.Pack holders
146	..With means to vibrate pack
147	..Advancer
148	...With means to move portions of advancer unequally (e.g., for unequal-thickness sheets)
149	...For on-edge or imbricated sheets
150	....Supported by moving conveyor belt
151	.....For imbricated sheets
152	...Control of advancer responsive to sensing of foremost sheet
153	....Sensor included in feed mechanism
154	....Sensor activates electric or fluidic circuit
155	.....Controlled electric or fluidic motor actuates advancer
156	....Controlled pawl and ratchet actuates advancer
157	...With means to replenish pack or retract advancer platform
158	....Using plural platforms during continuous operation of feeder
159	.....And plural drives for plural platforms
160	...Urged by spring or weight
161	..With means to bow sheets
162	..Holder movable relative to feed position
163	...Holder convertible from feed to delivery
164	...Holder moved parallel to plane of sheets
165	..For feed from bottom of pack
166	...With means to relieve weight of pack
167	..With means to restrain feed of next sheet
168	...By sheet-impaling restrainer
169	...By lateral margin or side-edge restrainer
170	....Corner snubber
171	..Holder adjustable to size of sheet
278	DELIVERING
279	.Multiple discharge
280	..For separating sheet from moving assemblage of sheets
281	...By separating member moving in direction opposite of assemblage
282	...By sheet attracting means
283	....Pneumatic attracting means
284	.....Opposed pneumatic attracting means
285	...With leading edges of sheets offset
286	....With means to cause offset
287	..Of successive sheets to plural receivers in succession
288	...With control means to vary mode of operation
289	....To bypass array of receivers
290	.....To route sheets to subsequent array of receivers
291	...With selective actuation of means for inverting duplex sheets
292	...With movable receivers or receiver portions
293	....With means to increase spacing between receiver defining portions
294	....Receivers moving into registry with delivery zone
295	.....Receivers arranged in rotary array
296	...By diverter or conveyor moving past receivers
297	...By individual diverter for each receiver
298	..With means to program discharge destination
299	..To laterally spaced receivers
300	..By release from conveyor at plural locations
301	..Selectively to recirculating path or exit
302	..By conveyor section movable to direct sheets along alternate paths
303	..With movable diverter
304	...Bidirectionally rotating diverter roller
305	...Individual diverter for each receiver
65	.Optional face or back
66	..Endless conveyors to flies
67	.Endless conveyors to curtains
69	.Endless conveyors to other conveyors
70	..To flies
72	.Rotary conveyors to flies
73	.Curtains
306	.With transfer means between conveyor and receiver
307	..Means to strip sheets from engagement with moving conveyor
308	...Stripper cyclically movable between stripping and nonstripping position
309	...By air blast
310	...By means to attract sheet from conveyor
311	...Stripper normally in contact with conveyor surface

DELIVERING
.With transfer means between conveyor and receiver
..Means to strip sheets from engagement with moving conveyor
312 ...Stripper normally in spaced relation to conveyor surface
313 ....With means to maintain constant spacing of movable stripper
175 ..Means to drape sheets over horizontal bar
176 ..Responsive to delivered sheet
177 ..Means to push sheets out of edgewise into broadside movement (e.g., packer)
178 ...Rotating packer
179 ....Screw or helix
180 ...By reciprocating or oscillating packer
181 ....Packing sheets on-edge into receiver
182 ..Means to retard sheets
183 ...By suction retarder
184 ..Means to change orientation or direction of sheets during delivery
185 ...Orientation-changing means
186 ....Sheet inverting means
187 ....By rotating circumferential-pocket members
188 ..Means to bow sheets during delivery
189 ..Means temporarily interposed between conveyor and receiver
190 ...Transversely-disposed, gapped sheet-supports on endless carrier
191 ...Endless belt on reciprocating carrier
192 ...Counter-rotating supports for lateral margins
193 .By electrostatic or magnetic conveyor
194 .By pneumatic conveyor
195 ..Using pressaurized gas
196 ..Unidirectionally-moving suction member or surface
197 ...Including endless-belt conveyor and suction chamber
198 .By endless conveyor
199 ..Operation controlled by delivered sheet
200 ..With delivery end movably relative to pack receiver
201 ...Moving away from increasing delivered pack
202 ..With means to vary speed of sheets on conveyor(s)
203 ...By cyclicly varying conveyor speed
204 ..Suspension gripper
205 ...For lateral margins of conveyed sheet
206 ...With means to adjust gripper
314 .Rotary conveyor
315 ..With circumferential pocket members
81 ..Traveling
82 ..Suspension gripper
83 ..Flies
84 .Reciprocating conveyors
85 ..Suspension gripper
207 .To receiver for pack of sheets
208 ..With means to discharge static electricity
209 ..With means to bow sheets
210 ..With means to vibrate receiver
211 ..With air cushion between sheet and pack
212 ..For receiving sheets from below the pack
213 ..With movable sheet-surface support
214 ...Receding from delivery zone (e.g., retractor)
215 ....Responsive to increase
216 ....Conveyor-receiver for imbricated sheets
217 ....Lowering as pack-height increases
218 .....With auxiliary support for part of pile
219 .....Spring-loaded support
220 ..With movable pack-limiting member(s) (e.g., hold-down)
221 ...And means to move members cyclicly against sheet edges (e.g., jogger)
222 ....And yieldable connection in moving means
223 ...Members adjustable to sheet size
224 ....Sheet-impact bumper member

****

CROSS-REFERENCE ART COLLECTIONS

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900 STRIPPER
901 MAGNETIC OPERATION
902 REVERSE DIRECTION OF SHEET MOVEMENT
903 TRAVELING WICKET (FOR SHEETS ON EDGE)

☆ U.S. GOVERNMENT PRINTING OFFICE: 1991-288-359/21407

CLASS 272 AMUSEMENT AND EXERCISING DEVICES

1 R	AMUSEMENT
1 A	..Sand boxes
1 B	..Water sports
1 C	..Aircraft simulation
1 D	..Stick horses and body supported devices
1 E	..Birling devices
2	.Houses
3	.Arenas
4	..Racing
5	...Horse
6	.Elevating devices
7	..Combined roundabouts
8 R	.Illusions
8 M	...Mirrors
8 N	...Novelties
8 F	...Fire
8 D	...Display
8 P	...Projected light
8.5	..By transparent reflector
9	..Stage
10	...Special projected picture or light effects
11	...Settings
12	....Rapid movement
13	...Mirror
14	...Sound imitation
15	...Rain, snow and fire
16	..Trip simulation
17	...In passenger-carrying devices
18	....With projected picture scenery
19	..Maze or labyrinth
20	..Pyrotechnic display
21	.Stage appliances
22	..Shifting scenery
23	...Guides, braces and clips
24	..Aerial suspension devices
25	..Properties
26	...Stage tanks
27 R	.Initiating devices
27 B	...Blowing and cards
27 W	...Pins and water jets
27 N	...Novelties
28 R	.Roundabouts
28 S	...Vertical shaft mounting
29	..Combined with transporting vehicle
30	..Combined seesaw
31 R	..Toy
31 A	....Aircraft
31 B	....Helicopter
31 P	....Phonograph driven
32	..Marine
33 R	..Occupant propelled
33 A	....Bowl shape
33 B	....Bicycle type
34	..Auto-propelled carriages
35	..Free carriage
36	..Vertical and horizontal axes
37	..Plural vertical axes
38	..Plural horizontal axes
39	..Vertical axis only
40	...Suspended vehicle or rider support
41	....Circular swings
42	....With rotating platform
43	...Rotating vehicle or rider support and stationary track or platform
44	....Vertically undulating track or platform
45	....Horizontally undulating track or platform
46	...Rotating disk, ring or bowl
47	....Concentric rings or disks
48	....With vehicle or rider supports
49	..Horizontal axis only
50	..Gyrating axis
51	..Inclined axis
52	.Hobby horses
52.5	..Combined or convertible
53.1	..With actuating means
53.2	..With movable elements
54	.Seesaws
55	..One person
56	..Rocking support
56.5 R	.Slides
56.5 SS	...Ski slopes
85	.Swings
86	..Motor operated
87	..Hand and foot operator
88	..Hand operator
89	...Horizontally reciprocating
90	...Cable grasp
91	....Pulley mounted
92	..Foot operator with separate suspender
93	EXERCISING EQUIPMENT
94	.For head (e.g., jaws, neck, etc.) or foot
95	..Face (e.g., jaws, lips, etc.)
96	..Foot
97	.For simulating skiing
98	.For thrusting a simulated weapon (e.g., fencing foil, etc.)
99	.For improving user's respiratory function
100	.For track or field sports
101	..For jumping, vaulting or hurdling
102	...Cross-bar or support therefor (e.g., hurdle, etc.)
103	....Means to facilitate adjustment of cross-bar height
104	...Vaulting pole or stop therefor
105	..Starting block for track runner
106	..For throwing (e.g., javelin, hammer, etc.)
107	...Discus
108	...Shot put
109	.Gymnastic
61	..Trapezes and rings
62	..Horizontal bars
63	...Parallel bars
64	..Vaulting horses
65	..Projectors
66	...Spring boards
110	..Swinging tower or pole
111	..Balancing bar or rope
112	..For hanging or climbing by the arms
113	..Playground climber (e.g., for use by children)
67	.Hand and wrist
68	..Grips
69	.Tread mill
70	.Walking or skating
70.1	..Stilts
70.2	...Steps
70.3	..Occupant propelled frame
70.4	...Armpit engaging
71	.Swimming
72	.Rowing
73	.Bicycle
74	.Skipping
75	..Ropes
76	.Striking
77	..Striking bags
78	...Supports
114	.For user locomotion (e.g., pogo stick, etc.)
115	..Translatable with user inside
116	.User-manipulated force-resisting mechanism or element
117	..User-manipulated weight
118	...Including guide for vertical array of weights
119	...Worn on user's body
120	...Utilizing user's body weight
121	...Part of user's body
122	...Dumbbell or barbell
123	....Barbell

EXERCISING EQUIPMENT
.User-manipulated force-resisting mechanism or element
..User-manipulated weight
124 ...Club
125 ..Isometric or isokinetic
126 ..Self-force resister
127 ...Rolled by or against user
128 ..Utilizing inertial force-resister
129 ..Utilizing electromagnetic force-resister or electrical control
130 ..Utilizing hydraulic or pneumatic force-resister
131 ..Utilizing frictional force-resister
132 ...Including rotating or arcuately-oscillating element
133 ...Including rope moving relative to surface of element
134 ..With common support frame for user's body and for force-resister
135 ..Utilizing resilient force-resister
136 ...Attached to static foundation
137 ...And user-supplied counter force
138 ....Against user-occupied platform
139 ....Attached to user
140 ...Torsion element
141 ...Linearly-compressed element
142 ...Extension element
143 ..User-interface element (e.g., handle, belt, etc.)
144 .Support for user's body (e.g., bench, slant-board, etc.)
145 ..And hold-down for user's feet
146 ..Swivelled foot-platform

CROSS-REFERENCE ART COLLECTIONS

900 REMOVABLY ATTACHED TO BED, CHAIR OR DOOR
901 ARM WRESTLING APPARATUS
902 APPARATUS UTILIZING OPPONENT-SUPPLIED RESISTANCE
903 STRETCHING

DIGESTS

DIG 1 Valves
DIG 2 Rigid chain
DIG 4 Adjustable
DIG 5 Indicator
DIG 6 Ergometer with feedback to load or with feedback comparison
DIG 9 .Jogging Apparatus

CLASS 273 AMUSEMENT DEVICES, GAMES

DECEMBER 1990

1 R	MISCELLANEOUS
1 A	..Hopscotch
1 B	..Hockey
1 C	..Cricket
1 F	..Fencing
1 L	..Liquid medium
1 G	..Physical ability
1 GA	...Path following
1 GB	....Magnetic
1 GC	...Electric
1 GD	...Magnetic
1 GE	...Reaction or timing
1 GF	...Balance or add on
1 GG	...Take away
1 GH	...Push pull
1 GI	....Arm or finger
1 E	..Electric
1 ES	...Electric scoreboard, per se exclusive
1 M	..Magnetic
1.5 R	BASKETBALL
1.5 A	..Basketball training devices
2	BILLIARDS AND POOL
3 R	.Tables
3 A	...Playing surface design
3 B	...Rotatable top
3 C	...Frame and leg
4 R	..Convertible billiard and pool
4 A	....Pocket plug
4 B	....Interchangeable rails
4 C	....Invertible
5 R	..Convertible furniture
5 A	....Rails independent of surface
5 B	....Elevatable table top
5 C	....Bed movable relative to rail
6	..Beds
7	...Cloth securing devices
8	..Rails
9	...Cushions
10	..Table attached ball racks
11 R	...With pocket connected conveying chutes
11 C	.....Coin control
12	..Pockets
13	..Dust covers
14	..Special game attachments and accessories
17	.Cue chalkers
18	..Holders
19	...Automatic
20	...Tethered
21	...Fixed
22	.Ball spotting racks
23	.Cue rests
24	..Hand attached
25	BASEBALL
26 R	.Practice devices
26 A	...Target or backstop
26 B	...Bats
26 C	...Player worn
26 D	...Ball pitching devices
26 E	...Tethered
26 EA	...Tethered balls slidable along a line
27	.Field covers
28	.Ball curvers
29 R	TENNIS
29 A	..Practice
29 B	..Nets
29 BA	...Net center stay
29 BB	...Net post
29 BC	....Net tigntening
29 BD	.....Reel
29 BE	.....Lever
29 BF	.....Screw
29 BG	.....Rotating post
30	.Table
31	.Court marking strips
32 R	GULF
32 A	..Ball position markers
32 B	..Golfer's tools
32 C	..Stance blocks
32 D	..Ball and/or tee carriers
32 E	..Club carriers
32 F	..Ball retriever clubs
32 G	..Water plus sand tees
32 H	..Golfing parameters selecting aids
176 R	.Condensed, miniature or restricted courses
176 A	...Earth forms part of fairway
176 AA	....Wicket golf
176 AB	....Shrunk course
176 B	...Targets and/or obstacles
176 D	...Design
176 E	...Non-earth irregular
176 F	...Non-earth single fairway
176 Fa	....Electrical
176 FB	....Extensible
176 G	...Non-earth radial fairways
176 H	...Distortable playing surfaces
176 J	...Materials
176 K	...Ball conveyor included
176 L	...Golf course chart or map, etc.
34 R	.Putting holes and hole markers
34 A	...Cups including ball removal means
34 B	...Filler plugs
177 R	..Simulated receivers
177 A	....Targets with impact pivotal element
177 B	....Impact resilient
178 R	...Holes and depressions
178 A	.....Movable by ball impact
178 B	.....Putting greens
179 R	....With ball return
179 A	......Solenoic included
179 B	......Mechanically operated impeller
179 C	......Gravity, per se
179 D	......Compressed air
179 E	......Curved surface return
180	....Plural pockets
181 R	.Targets
181 A	...Goal opening included
181 B	...Impaled action or glue-like adhering
181 C	...Acoustic
181 D	...Funnel and raceway
181 E	...Displaceable wire, electrical
181 F	...Netting
181 G	...Vibration detecting
181 H	...Photo-cell
181 J	...Target displaced by ball impact
181 K	...Target deflects ball away
182 R	..With ball return
182 A	....Tunnels
35 R	.Practice devices
35 A	...Including mirror reflector
35 B	...Driving ranges
183 R	..With indicator, alarm, recorder or register
183 A	....Mats and/or tees with indicators
183 B	....In physical contact with golfer's body
183 C	....Balls with indicators
183 D	....Clubs with indicators
183 E	....Sighting devices requiring golfer to look at a point
184 R	...Struck-projectile responsive
184 A	.....Rolling ball actuable
184 B	.....Tethered projectile
185 R	....Projectile direction
185 A	......Simulated ball image viewable by golfer
185 B	......Scene changing
185 C	......Tethered; flexible cord
185 D	......Tethered; non-flexible cord
186 R	...Club-swing responsive
186 A	.....Part of club
186 B	.....On or closely allied to ball
186 C	.....Indication is visual, per se or by contact, per se

GOLF
.Practice devices
..With indicator, alarm, recorder or register
...Club-swing responsive
186 D .....Indication is a mark or tracing
186 E .....Ball adheres to club
187 R ...Stance
187 A .....Non-adjustable indicia containing
187 B .....Foot elevating blocks
188 R ..Body guides or restraints
188 A ....Foot
189 R ...Arm
189 A .....Splints
190 R ...Head
190 A .....Head carried
190 B .....Flexible cord secured to head or mouth
190 C .....Chin engaged
191 R ..Club guides
191 A ....Closed loop type of guide track
191 B ....Flexible cord restrains club
192 ...Putting
193 R ..Club
193 A ....Exercising
193 B ....Pivotable sections
194 R ...Modified standard type or accessories
194 A .....Club head mounted
194 B .....Weighting attachments
195 R ..Mats and tees
195 A ....Bristles
195 B ....Tiltable platform
196 ...Tethered projectile
197 R ....Rotatable
197 A ......About horizontal axis
198 ....By flexible filament
199 R ..Projectile
199 A ....Flight restraining and guiding element included (e.g., parachutes, stabilizing fins, etc.)
200 R ...Tethered
200 A .....Slidable along a guide line
200 B .....No flexible cord
32.5 .Tee setting devices
33 .Tees
201 ..With ball feeding means
202 ..Adjustable height
203 ...Plural interchangeable or rearrangeable
204 ..Horizontally swingable
205 ..Of ribbon-like sheet material
206 ..Of wire
207 ..Tilt top
208 ..Tethered
209 ..Restrained by weight
210 ..Foldable blanks or assembled from blanks
211 ..Plural points in ball engaging surface
212 ..Diverse material head and shank
37 BOWLING
38 .Mechanically projected ball
39 .Changed or curved ball path
40 .Tethered bowling ball
41 .Special targets
42 R .Mechanical pin setters
42 A ...With pin lifter
43 R ..With mechanical pin gatherers
43 A ....With pin lifter
43 D ....Distributor
43 E ....Elevator
44 ..Tethered pin
45 ...Tethered to bed
46 .Pin spotters
47 .Ball return
48 ..Automatic
49 ..Mechanically operated
50 .Foul indicators
51 .Beds and gutters
52 ..Pin spots
53 ..Back stops
54 R .Accessories
54 A ...Pin sweeps
54 B ...Bowler worn or carried
54 C ...Computers and scorekeeping accessories
54 D ...Non-carried practice devices
54 E ...Pin detectors
55 R FOOTBALL
55 A ..Tackling dummies
55 B ..Kicking tees and kicking trainers
55 C ..Flag belts
55 D ..Goal post structure
56 CROQUET
57 .Tables and boards
58 R BALLS
58 A ..Solid and covered
58 B ..Hollow: single layer
58 BA ...Plural layer
58 C ..Tethered
58 D ..Skeleton
58 E ..Sounding
58 F ..Loose internal elements
58 G ..Including electrical components
58 H ..Liquid containing
58 J ..Rubber formulations
58 K ..Surface projections
59 R .Billiard and pool
59 A ...Materials
59 B ...Weights and indicators
60 R .Baseball
60 A ...Covers
60 B ...No windings
61 R .Tennis
61 A ...Ping-pong balls
61 B ...Fabrics, per se
61 C ...Rubber formulations
61 D ...Methods of pressurizing
62 .Golf
213 ..With alarm, location or indicator means
214 ..Center expanded or under compression
215 ...Injected expanded fluent material
216 ...Tensioned elastic windings
217 ..Mechanical bond between encompassing points
218 ..Unitary structure
219 ..Buoyant
220 ..Center
221 ...With air pockets
222 ...Wound
223 ....Spider or skeleton core
224 ....Exclusively
225 ....With diverse type layer
226 ....Plural windings
227 ....Rubber
228 ...Plural layer
229 ....Fibrous
230 ...Core
231 ....Liquid
232 ..Surface configurations
233 ..Cover
234 ...Reinforced
235 R ...Materials
235 A .....Paint
235 B .....Irradiated
63 R .Bowling
63 A ...Improved finger hole grips
63 B ...Means for changing finger hole location or size
63 C ...Indicia
63 D ...Tracking
63 E ...Weights
63 F ...Movable release element
63 G ...Polyester
64 ..Hand grips

	BALLS
65 R	.Football and basketball
65 A	...Closures
65 B	...Bladders
65 C	...Valves: composite
65 D	...Valves: rubber
65 E	...Casings
65 EA	....Non-ball art
65 EB	....Windings
65 EC	....Weighted
65 ED	....Ball making methods
65 EE	....One-piece construction
65 EF	....Spiraling and electrical
65 EG	....Gripping structure
65 F	...Closure means
67 R	BATS, MALLETS, RACQUETES, CUES, PINS, AND BILLIES
67 A	..Hockey sticks
67 B	..Hand or foot attached
67 C	..Polo mallet
67 D	..Cricket bat
67 DA	...Handle structure
67 DB	...Grips, guards, and weights
67 DC	...Blade facings
68	.Billiard cues
69	..Mechanically operated
70	..Tips and tip fasteners
71	...Clamps and presses
72 R	.Baseball
72 A	...Metal shell
73 R	.Tennis
73 A	...Stringing devices
73 B	...Stretching devices
73 C	...Bow structure
73 D	...String fastener or guides
73 E	...Adjustable tension
73 F	...Laminated non-metallic
73 G	...Throat structure
73 H	...Metal
73 J	...Handle structure, per se
73 K	...Metal reinforced
73 L	...Replaceable string frame
74	..Presses and cases
75	..Handle grips
76	..Table
77 R	.Golf
77 A	...Club sets
162 R	..Combined
162 A	....Scorekeeping
162 B	....Leveling devices
162 C	....Tees
162 D	....Ball position markers
162 E	....Retriever clubs
162 F	....Other tool
163 R	...Ball and club alignment means
163 A	.....Alignment means on shaft
164	....Integral with club
81 R	..Handles and hand grips
81 A	....Weighted handle
81 B	....Longitudinal lines, flats, recesses, projections, etc.
81 C	....Rotatable
81 D	....Gripping attachment
165	...Removable grip positioner
166	...Player worn gripper
81.2	...Quick detachable or longitudinally adjustable
81.3	...Angularly related handle and club shaft axes
81.4	...Finger-conforming configurations
81.5	...Spiral windings
81.6	....With spiral grooves and/or elevations
79	..Adjustable ball engaging face
80 R	..Shafts and shaft fastenings
80 A	....Center of gravity
80 B	....Shaft flexibility
80 C	....Relation between shaft axis and head
80 D	....Telescopic
80.1	...Quick detachable or angularly adjustable head and shaft
80.2	...Head and shaft joints
80.3	....With common covering
80.4	....Cushioned interspace
80.5	....Shaft surrounding and hosel end abutting sleeve
80.6	....Deformed shaft wall
80.7	....Threaded shaft
80.8	....With core or plug
80.9	...Longitudinally seamed or sectioned shafts
167 R	..Heads
167 A	....Sole features
167 B	....Overspin
167 C	....Cylindrical or spherical
167 D	....Design and publications
167 E	....Reduced air resistance
167 F	....Weighing and balancing the head
167 G	....Relation between shaft axis and head
167 H	....Hollow
167 J	....Striking face
167 K	....Hosel-less
168	...Plural ball contacting faces
78	...Resilient faces
169	...With particular weight means
170	....Shifting weight during swing
171	....Adjustable by addition, subtraction or interchange
172	....By modification of sole plates
173	...Plates and inserts
174	....Ground engaging
175	...Non-planar ball contacting faces
82 R	.Bowling pins
82 A	...Metal core
82 B	...Base structure, per se
83	.Croquet
84 R	.Police clubs
84 ES	...Electric shock
85 R	SIMULATED GAMES
85 A	..Rotatable about vertical axis only
85 B	..Rotatable about vertical axis and translatable
85 C	..Rotatable about horizontal axis only
85 D	..Rotatable about horizontal axis and translatable
85 E	..Fixed to game board with movable element
85 F	..Translatable only or translatable with movable element
85 CP	..Simulated card playing
85 G	..Electronic
85 H	..Fluid pressure
86 R	.Racing or time determinative contests
86 A	...Dice, card, or spinner controlled
86 B	...Electric or magnetic
86 C	...Gravity
86 D	...Impact
86 E	...Reciprocating or vibrating
86 F	...Endless driving connection
86 G	...Drum winding
86 H	...Rotating arm or disc
87 R	.Golf
87 A	...Non-golf
87 B	...Billiard golf
87 C	...Full scale club
87 D	...Design
87 E	...Tiltable course
87 F	...Playing card
87 G	...Spinner
87 H	...Disc projectile
87.2	..Projector
87.4	...Manikin type
88	.Baseball
89	..Mechanically pitched and batted ball
90	..Manually batted ball
91	..Moving surface

SIMULATED GAMES
.Baseball
93 R ..With chance element
93 C ....With cards
94 .Football
310 LIGHT RAY PROJECTILE GAME
311 .Shoot-out or duel
312 .Moving target
313 SIMULATED PROJECTILE GAME OR ACCESSORY THEREFOR
314 .Having target or subtarget marker
315 .Having target deflector
316 .Having electrical contact coincidence detection of target position and projector aim position
317 AERIAL PROJECTILE, TARGET THEREFOR, OR ACCESSORY
318 .Combined projector and catcher
319 ..Tethered projectile
320 ...Pocketed catcher
321 ....Elastic tether
322 ..Separate entrance and exit (e.g., continuous orbit, etc.)
323 ..Pocketed projector and catcher
324 ...Mechanical projection
325 ...Pocket-to-pocket
326 ...Transversely extending pocket (e.g., lacrosse stick)
327 ..Impaling, hooking, or ensnaring type catcher
328 ..Pocketed catcher-separate projector
329 .Projectile tethered to hand-held, apertured manipulator
330 .Projectile flexibly tethered to hand-held manipulator
331 .Target and tethered projectile
332 ..Tethered ring
333 ..Having indicator or indication by movement of target
334 ...Elastic tether
335 ..Elastic tether
336 .Peg and ring game or pegged target therefor
337 ..With mechanical projector
338 ..Having plural pegs
339 ...Structurally different or nonparallel longitudinal axes
340 .Playing surface or projectile struck from below to project projectile
341 .Tipcat game, projectile therefor, or accessory
342 .Upwardly facing projectile-bounce surface
343 .Hooking or draping projectile and target therefor
344 .Projectile or target having suction cup
345 .Projectile or target having magnetized material for adherence therebetween
346 .Projectile or target having complementary bristled, micro-hooked, or looped material for adherence therebetween (e.g., VELCRO material, etc.)
347 .Projectile or target having complementary means for nonpenetrating adherence therebetween (e.g., tacky surface, etc.)
348 .Target
348.1 ..Including heating means (i.e., thermal target)
349 ..With liquid projector (e.g., water pistol)
350 ..Liquid buoyant
351 ..Game simulating aerial bombing of targets
352 ..SKEE-BALL game
353 ..Tiddlywink game
354 ..Having means to vary size of projectile-receiving target aperture or target opening
355 ..With support having both target and movable mechanical projector attached thereto
356 ...Projector universally pivots
357 ..With plural mechanical projectors
358 ..Projected picture
359 ..Moving
360 ...Airplane towed
361 ....Having target exchange, carrier, or storage means
362 ...Flying or moving freely through the air
363 ....Material dispensing or burning upon projectile impact
364 ....Having projector-engaging protrusion, notch, or recess means for enhancing projection of target
365 ....Reusable in whole or part
366 ...Along endless path
367 ....Target has additional motion while moving along path
368 ....Path is circular
369 ...Oscillating (e.g., pendulum motion) or reciprocating
370 ....Target has additional motion while oscillating or reciprocating
371 ..With electrically actuated or operated indicator
372 ...Indicator responsive to projectile produced sonic or shock wave
373 ...Penetrating projectile alters circuit condition of target formed of stacked, penetrable sheetlike conductors
374 ...Element moved by projectile impact to actuate circuitry
375 ....Element is pivoted
376 ....Coplanar elements
377 ...Spaced conductors bridged by nonpentrating projectile
378 ..Indication by movement of target or target having indicating means
379 ...Plural indicators sequentially released
380 ...Frangible or formed from a plurality of separable interconnected elements (e.g., explosion simulating)
381 ...Audible indication
382 ....Projectile passes through aperture to operate indicator
383 ...Having projectile-actuated means to free indicator for movement
384 ....Indicator is dumped or is projected into the air (e.g., return fire)
385 ....Gravity operated indicator
386 ...Target is moved or indicator is moved
387 ....Indicator is moved
388 .....Indicator is alternate target
389 .....Target is opening through which projectile passes to actuate indicator
390 ....Target pivots
391 .....Having restoring means
392 ......Automatic restoring
393 ....Target separates from support
394 ..Having means to deliver spent projectile to easily accessible location
395 ...Movable conveyor or reprojecting target
396 ...Projectile returned toward the projecting point
397 ....Runway extending between target area and projecting point

	AERIAL PROJECTILE, TARGET THEREFOR, OR ACCESSORY
	.Target
398	..Pocketed or apertured
399	...With mechanical projector
400	...Closed-back or closed-bottom pocket
401	....Entrance opening is formed in laterally extending surface
402	...Target is aperture dimensioned to allow projectile to pass entirely therethrough
403	..Penetrable target with replaceable element
404	..Penetrable target with projectile backstop
405	..With mechanical projector
406	..Handling or manipulation (e.g., target positioning means)
407	..Target support structure
408	..Target penetrated by projectile
409	..Printed matter
410	.Projectile backstop
411	.Playing field or court game; or accessory therefor (e.g., volleyball, soccer, etc.)
412	.User manipulated means for catching projectile moving through the air
413	.Tethered projectile
414	..Tethered to means engageable with human body part (e.g., hand-held means or means attachable to human body part)
415	.Scattershot projectile or beanbag projectile
416	.Arrow, dart, shuttlecock, or element thereof
417	..Shuttlecock
418	..Material dispensing upon impact or having fluid conducting means
419	..Head structure
420	...And vane structure (i.e., flight guiding or stabilizing means)
421	...Broadhead
422	....Interchangeable blade
423	..Vane structure (i.e., flight guiding or stabilizing means)
424	.Disc or ring projectile
425	..Ring
426	.Boomerang projectile
427	.Horseshoe projectile
428	.Nonspherical projectile
108	SURFACE PROJECTILE
109	.Moving surface
110	..Pivoted
111	..Pivoted gate
112	..Spiral surface
113	..Pocketed
114	...Mercury globule
115	...Surface pockets
116	....Hazard pockets
117	...Moving pockets
118 R	.Ball games
118 A	...Magnetic or electric
118 D	...Ball actuated element
119 R	..Combined with projector
119 A	....Electric or magnetic
119 B	....Fluid projector
120 R	...Gravity projectors
120 A	.....Electric or magnetic
121 R	...Return course
121 A	.....Electric or magnetic
121 B	.....Pachinko, i.e., nearly vertical playing surface
121 D	.....Ball supply means
121 E	.....Ball elevator
122 R	...Ball return
122 A	.....Electric or magnetic
123 R	..Pocketed
123 A	....Electric or magnetic
124 R	...Return course
124 A	.....Electric or magnetic
125 R	...Ball return
125 A	.....Electric or magnetic
126 R	.Disk or ring games
126 A	...Electric or magnetic
127 R	.Targets
127 A	...Fall apart targets
127 B	...Static, no ball return
127 C	...Ball return
127 D	...Target pivots about horizontal axis
128 R	.Projectiles
128 CS	...Curling stones
128 A	...Rollable
129 R	.Projectors
129 K	...Swung, carried by user
129 L	...Slid, carried by user
129 M	...Wheeled, carried by user
129 P	...Pinched or strand engaged
129 Q	...Gravity propelled
129 AP	...Air propelled
129 S	...Plunger, Mechanically or Electrically driven
129 T	...Plunger, Manual
129 V	...Pivoted, Mechanically or Electrically driven
129 W	...Pivoted, Manual
236	BOARD GAMES, PIECES OR BOARDS THEREFOR
237	.Electrical
238	..Removable and discrete game piece changes status of circuit
239	.Magnetic
240	.Markable or erasable game board or piece (e.g., magic slate)
241	.Having three-dimensional pattern
242	.Piece moves over board having pattern
243	..Chance device controls amount or directionof movement of piece
244	...Sports or outdoor recreational activities
245	....Golf
246	....Racing
247	....Football or soccer
248	...Race to a finish (e.g., backgammon)
249	....With common finish (e.g., parchisi)
250	.....Outer space or astronomy
251	.....Travel or exploration
252	....Travel or exploration
253	...Outer space or astronomy
254	...Travel or exploration (e.g., touring, treasure hunt, archeology)
255	...Military or naval engagement
256	...Property or commodity transactions
257	...Judicial, legislative, or election process
258	..Strategic race to a finish (e.g., Chinese checkers)
259	..Sports or outdoor recreational activities
260	..Chess or checker type
261	...Nonrectangular or extended pattern
262	..Military or naval engagement
263	..Chase type (e.g., fox and geese)
264	..Alignment games (e.g., morris, mill)
265	.Salvo type
266	.Nim type (i.e., game of take away)
267	.Completing square type
268	.Dice board and number plate type
269	.Lotto or bingo type
270	..With attached pieces
271	.Alignment games (e.g., tic-tac-toe, go-moko)
272	.Word, sentence, or equation forming (e.g.,SCRABBLE, hangman)
273	.Memory or matching games (e.g., concentrat

	BOARD GAMES, PIECES OR BOARDS THEREFOR
274	.Betting or wagering board (e.g., casino)
275	.Path forming
276	.Construction or assembly games
277	.Sports or outdoor recreational activities
278	.Property or commodity transaction (e.g., stock market)
279	.Judicial, legislative, or election process
280	.Rotatably mounted board
281	.Game board having movably attached piece
282	.Removably interfitting or detachably adhesive board and piece
283	.Game board having pattern separable into sections
284	.Game board having interchangeable, variable, or plural distinct playing patterns
285	.Collapsible board (e.g., folding)
286	..Flexible sheet type
287	.Game board structure
288	.Game piece
289	..With movably attached part
290	..Stackable or nestable feature
291	..Weighted or reversible (e.g., for different game)
138 R	CHANCE DEVICES
138 A	..Electric or magnetic
139	.Chance selection
140	..Fish ponds
141 R	.Rotating pointer
141 A	...Electric or magnetic
142 R	.Rotating disk
142 A	...Indicator: projected
142 B	...Indicator: electrical
142 C	...Indicator: optional
142 D	...Indicator: free element
142 E	...Ball indicator-pocketed disc
142 F	...Ball indicator-notched disc
142 G	...Ball indicator-stationary pocket
142 H	...Plural disc
142 HA	....Concentric
142 J	...Indexing
142 JA	....Pin and reed
142 JB	....Magnetic
142 JC	....Leaf spring and cog
142 JD	....Pivoted pawl
142 K	...Phonograph mounted
143 R	..Edge indication
143 A	....Rolling
143 B	....Movable web
143 C	....Indexing: magnetic
143 D	....Indexing: leaf spring
143 E	....Indexing: loose weight
144 R	.Lot mixers and dispensers
144 A	...Lot dispenser: mixing and dispensing
144 B	...Lot dispenser: mixing and showing
145 R	..Dice agitators
145 A	....Cup
145 B	....Chute
145 C	....Closed container
145 CA	.....Internal agitator
145 D	....Reciprocating floor
145 E	....Rotating table
146	.Dice
147	.Tops
292	CARD OR TILE GAMES, CARDS OR TILES THEREFOR
293	.Card or tile structure
294	..Playing surface having nonrectangular perimeter
295	..Material
296	.With functional back indicia
297	.Property or commodity transaction representation
298	.Sports or outdoor recreational activities
299	.Word, sentence, or equation forming
300	.With quotation thereon
301	.With musical indicia
302	.With educational data
303	.Suits
304	..With supplementary indicia
305	..Indexing
306	..With auxiliary or accessory card or tile
307	.Rearranged basic indicia
308	.With representations of persons or objects and names associated therewith
148 R	GAMES ACCESSORIES
148 A	..With card holders
148 B	..All video game accessories
309	.Game supporting tables or surfaces
149 R	.Card shufflers and dealers
149 P	...Devices for dealing predetermined hands
150	.Hand holders
151	..Duplicate games
153 R	PUZZLES
153 P	..Pyramid building
153 S	..Shifting movement
153 J	..Jumping movement
154	.Balancing ovoids
155	.Folding and relatively movable strips and disks
156	.Take-aparts and put-togethers
157 R	..Geometrical figures, pictures, and maps
157 A	....Transparent overlay
158	..Bent wire
159	..Flexible cord or strip
160	..Mortised blocks
161	FORTUNE-TELLING DEVICES
	******************************
	DIGESTS
	******************************
DIG 1	Carbonate
DIG 2	Styrene
DIG 3	Epoxy
DIG 4	Ethylene
DIG 5	Vinyl
DIG 6	Nylon
DIG 7	Glass fiber
DIG 8	Urethane
DIG 9	Ester
DIG 10	Butadiene
DIG 11	Acetal
DIG 12	Propylene
DIG 13	Artificial grass
DIG 14	Transparent
DIG 15	Cork
DIG 16	Acrylic
DIG 17	Head mounted
DIG 18	Shoe mounted
DIG 19	Waist mounted
DIG 20	Weighted balls
DIG 21	Reel
DIG 22	Ionomer
DIG 23	High modulus filaments
DIG 24	Luminescent, phosphorescent
DIG 25	Suction cups involved
DIG 26	Point counters and score indicators
DIG 27	Blind and color blind
DIG 28	Cathode ray tube
DIG 29	Silicone
DIG 30	Hooked pile fabric fastener, e.g., VELCRO
DIG 31	Undulated surface

CLASS 276 TYPE SETTING

1	MISCELLANEOUS
2	SETTING AND DISTRIBUTING MACHINES
3	.Registerable magazine and composing channels
4	..Magazine and printing member
5	.Circulating feeler and type-holder distributors
6	.Ward distributors
7	.Keyboard distributors
8	SETTING AND JUSTIFYING MACHINES
9	.Measure-controlled justifier
10	.Compressing justifier
11	.Indicating justifier
12	SETTING MACHINES
13	.Pattern control
14	.Hand supply
15	.Registerable magazine and composing channels
16	.Conveyor
17	..Endless
18	...Power ejector
19	..Power ejector
20	.Converging chutes
21	..Power ejector
22	DISTRIBUTING MACHINES
23	.Feeler
24	..Circulating type holder
25	...Circulating feeler
26	.Ward
27	.Keyboard
28	JUSTIFYING MACHINES
29	.Measurer-controlled
30	..Space-making
31	...Casting
32	.Wedge
33	.Galleys
34	LEAD HANDLERS
35	TYPE-LINE SEPARATORS
36	TYPE ARRANGERS
37	HAND TYPE CHANNELS
38	COMPOSING STICKS
39	.Positive knee lock
40	GALLEYS
41	.Side and end locking means
42	.Side locking means
43	.End locking means
44	TYPE CASES
45	.Feeding

CLASS 277 JOINT PACKING

DECEMBER 1990

1	PROCESSES
2	WITH INDICATOR, SAMPLERS, OR INSPECTION MEANS
3	WITH MEANS FOR ESTABLISHING PRESSURE CONDITION WITHIN ASSEMBLY
4	PIPE OR PLATE ATTACHED PACKING BOX
5	WITH DISPARATE JOINT
6	.Interacting with packing
7	.Alternatively fixed or movable coaxial rods
8	.Antirotation coupling
9	WITH REPAIR OR ASSEMBLY MEANS
9.5	.Holding means functioning only during assembly or disassembly
10	.Handle
11	.Position or guide
12	STRUCTURAL INSTALLATION
13	CENTRIFUGAL LIQUID BARRIER
14 R	.Centrifugal cup or chamber
14 V	...Vertical shaft
15	WITH FLUID CIRCUIT
16	WITH ISOLATED FLOW PATH
17	WITH EXTERNAL FLUID RECEIVER
18	.With related receiver or director
19	.Surrounding rod
20	..Carried by removable end member
21	.Separably mounted on peripheral wall
22	WITH HEATER, HEAT EXCHANGER, OR HEAT TRANSMITTER
23	WITH FLUID SEPARATOR OR FORAMINOUS GUARD
24	WITH DEPOSIT REMOVAL
25	WITH CENTRIFUGAL FEATURE
26	TEMPERATURE RESPONSIVE
27	WITH PRESSURE RESPONSIVE LOADING MEANS
28	AUTOMATIC CONTROL
29	.Vent
30	GYRATORILY OR SLIDABLY MOUNTED PACKING ASSEMBLY
31	ROTATABLE PACKING FOR AXIALLY MOVABLE ROD
32	COMBINED OR CONVERTIBLE
33	AXIALLY BIASED ROD
34	INFLATABLE PACKING OR BIAS
34.3	.Toroid
34.6	.With internal fluid distributor
35	CARTRIDGE-TYPE SEALING UNIT
36	.Axially extensible housing
37	.With external seal
38	.Relatively rotatable radially contacting sealing members
39	..Within unit housing
40	...Axially biased translatable member
41	....Rotatable
42	..With connecting diaphragm
43	...Biased against housing
44	.Segmental packing
45	..With radial bias means between housing and packing
46	...Acting along intersecting radial lines
47	.Packing held between radial housing flange and separate retainer
48	..Resiliently biased against flange
49	...Rigidly secured bias means
50	.Packing held by recess in housing member
51	.Spaced packing retainers
52	.Packing reenforced at housing juncture
53	LABYRINTH
54	.Adjustable concentric member
55	.Plural opposed projections
56	..Interfitting or overlapping
57	...With axially directed projections or grooves
58	PLURAL DISTINCT PACKING ASSEMBLIES
59	.With interposed fluid receiver
60	.Packing chamber within follower
61	.Oppositely biased coaxial
62	..Interposed bias
63	.Asymmetrical mirror images
64	.Including manually adjustable packing box
65	.Including relatively rotatable, radially contacting sealing members
66	AXIALLY SEPARABLE PACKING BOX
67	IMPELLER WITH FLUID RECEIVER OR DIRECTOR
68	WITH FLUID DIRECTOR
69	.Nested with packing
70	WITH FLUID PORT
71	.Through seat or chamber wall
72 R	..With fluid line or connection
72 FM	....Fluent packing material
73	..With fluid piston
74	..Communicating with relatively movable sealing surfaces
75	..Connected port in packing member
76	...And bias member
77	..Extending through a follower
78	..In corner
79	..In peripheral wall
80	MAGNETIC
81 R	RELATIVELY ROTATABLE RADIALLY CONTACTING SEALING MEMBERS
81 P	..Rotary piston
81 S	..Segmental
82	.With diverse relatively movable sealing part
83	.Floating ring
84	.Radially acting bias
85	.With secondary packing and bias
86	..Member and secondary packing biased oppositely by common spring
87	..Member and radially contained secondary packing biased by common spring
88	.Flexible diaphragm between member and axially movable part
89	..Shaft attached
90	..Attached at radially spaced points
91	.Telescoping member and fixed shaft abutment
92	.Elastomeric backing far member
93 R	.Axially translatable member rotatable with shaft
93 SD	...Spring driven
94	.Radial groove or rabbet
95	.Flexible packing member
96	.Particular interface material and configuration
96.1	..Interface configuration
96.2	..Interface material
97	VIBRATING MOUNT OR PACKING MEMBERS
98	.Axially spring pressed
99	..Coaxial spring
100	.Arcuate bearing face
101	EXTERNALLY CLAMPED
102	RADIALLY CONTAINED PACKING WITH AXIALLY ACTING FOLLOWER
103	.Piston
104	.Sectional follower
105	.Bolted flange
106	..Spring biased flange
107	.With operating handle
108	.With tool engaging means
109	.Weight actuated
110	.Screw thimble
111	..With locking means
112	.Screw
113	.With operating mechanism
114	.Unidirectional movement
115	.Tapered follower or box
116	..Arcuate
116.2	.Axially related backup member radially actuated by movement of follower
116.4	.Telescoping actuator
116.6	..With inserted sleeve expander

RADIALLY CONTAINED PACKING WITH AXIALLY ACTING FOLLOWER
.Telescoping actuator
116.8 ..Deflected packing
117 .Wedging surfaces
118 ..Internal shell
119 ..Split or segmental packing
120 ...Expanding and contracting
121 ....Elastomeric
122 ...Contracting
123 .Plural packing elements
124 ..Nested
125 ..Diverse
126 EXTERNALLY OPERATED ADJUSTMENT
127 .Fluid motor
128 .Circumferential band
129 .Acting along radius
130 LATERAL ACCESS TO PACKING BOX
131 .With distinct closure
132 ..Packing attached
133 IMPELLER TYPE
134 .Axially acting
135 LIQUID BARRIER
136 WITH ANTIROTATION KEY OR ANCHOR
137 .Radial wall
138 WITH DISTINCT RADIALLY ACTING BIAS
139 .Unitary packing spacer and bias means
140 ..U-section
141 .Common bias for axially spaced packings
142 .With axially acting bias means
143 .With axial component
144 ..Complementary inclined surfaces
145 ...Transversely symmetrical
146 .With bias restrainer
147 .With adjustable loading means
148 .Individually biased segments
149 .Circumferentially spaced radially acting springs
150 ..With radial pin or socket
151 .Circumferential thrust
152 .Axial lip or boss
153 ..Exposed coil spring
154 .Interfitted segments
155 .With bridging segments
156 .Break joint
157 .Periphery engaging spring
158 ..Incompatible shapes
159 ...Radially extending tongues
160 ...Wave or undulate
161 ...Polygonal
162 ..Open-end
163 ..Spiral
164 .Embedded or enclosed spring
165 .Nonmetallic
166 ANCHOR EXTENDING THROUGH OR INTERFITTED WITH PACKING
167 HELICAL SEAT
167.3 SERIALLY ARRANGED, SEPARATELY SEATED OR ANCHORED PACKING MEMBERS
167.5 SINGLE SEAT FORMED BY OPPOSED RECESSES IN PLURAL MEMBERS
168 LATITUDINALLY STEPPED OR TAPERED SEAT
169 .Arcuate wall
170 .Oblique wall
171 ..Plural
172 ...Parallel
173 FLOATING PACKING MEMBER
174 .Radially translatable
175 ..Axially spring pressed
176 .Additional member
177 .Elastomeric
178 INTERFITTING WITH RADIALLY PROJECTING FLANGE
179 EMBEDDED REENFORCEMENT OPPOSING TAPERED MOUNTING SURFACE
180 WITH COMPRESSION STOP
181 PACKING ATTACHED RETAINER
182 .Peripheral shell
183 ..With radial mounting flange
184 ..Channel-shaped
185 .Plural at axially opposed ends
186 .Resilient
187 PACKING CHAMBER OR SEAT WITH SEPARABLE END WALL
188 R WITH AXIALLY RELATED BACKING OR RETAINING MEMBER
188 A ..With anti-extrusion rings
189 WITH ANCHOR OR RETAINER
189.5 COMPOSITE SEAT
190 WEDGING PORTIONS
191 .Enclosed
192 SEGMENTAL
193 .Axially related segments
194 ..L-shaped
195 ..With radially related segment
196 ..Coiled or corrugated segment
197 ..Diametrically opposed splits
198 .Concentric segments
199 .Interfitting segments
200 AXIALLY SPACED FLANGES WITH CORRUGATED CONNECTING WEB
201 ANNULUS WITH DUCT OR PASSAGEWAY
202 .Elongated
203 HELICAL
204 VOLUTE
205 FLEXIBLE U- OR V-CUP
206 R .Radially facing
206 A ...X-shape
207 R RIBBED CONTACT SURFACE
207 A ..Pipe joints or connections
208 .Axially spaced
209 ..Opposite surfaces
210 ...Line contact
211 .Opposite surfaces
212 R FLEXIBLE CUP OR FLANGE TYPE
212 C ..Flexible cup type
212 F ..Flange
212 FB ..Flexible boot
213 CORRUGATED CONTACT SURFACE
214 CIRCUMFERENTIAL GROOVE IN PERIPHERAL SURFACE
215 WITH SPACED POCKETS, GROOVES, OR RECESSES
216 SPLIT ANNULUS
217 .Variable radius
218 .With separate gap or bridging piece
219 ..End secured
220 .With joining structure
221 ..End-to-end tongue and slot
222 ..Beveled or arcuate mating surfaces
223 .With insert
224 ..Hard material
225 WITH INTERMEDIATE RADIAL PERIPHERAL FLANGE
226 FLUENT OR VACUUM CORE
227 COMPOSITE
228 .Elastomeric core
229 .Distinct sheath
230 ..Woven or braided strands
231 .Reentrant contact surface
232 ..Enclosing plural plies
233 .Plural planar or conical plies
234 ..Metal faced
235 R .Including metal
235 A ...Planar coating
235 B ...Engine gasket
236 METALLIC
237 R MISCELLANEOUS
237 A ..Dust guard
****
CROSS-REFERENCE ART COLLECTION
****
901 WITH ELECTRICAL FEATURE

CLASS 277 JOINT PACKING

****

DIGESTS

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DIG 1	Fluid jet
DIG 2	Bell and spigot type
DIG 3	Plural packings
DIG 4	Dust guards
DIG 5	Air bearing
DIG 6	Material
DIG 7	Roller type
DIG 8	Shaft passage
DIG 9	Vibration damping
DIG 10	Frangible

CLASS 278 LAND VEHICLES, ANIMAL DRAFT APPLIANCES

1 MISCELLANEOUS
2 LOAD STARTERS
2.1 STREET CAR
DRAFT EQUALIZERS
3 .Horse longitudinally aligned
4 ..Two abreast
5 .Horses abreast
6 ..Five-horse type
7 ...With pole or poles
8 ..Four-horse type
9 ...With pole or poles
10 ....Offset pole
11 .....Three-against-one pull
12 .....Two-against-two pull
13 ......Lateral evener connection
14 ..Three-horse type
15 ...With pole or poles
16 ....With intermediate evener
17 .....Offset
18 .Two-horse type
19 ..Leverage adjustment
20 ...Automatic
21 HORSE DETACHERS
22 .Automatic
23 .Combined brake
24 .Traces from singletree
25 ..Traces positively moved
26 ..Movable trace-eye-engaging element
27 ...Pivoted
28 ...Sliding pin or rod
29 .Thills or poles from vehicle
30 ..Retracting axle-clip bolts
31 .Doubletree from pole
32 .Singletree from thill or evener
33 POLES AND THILLS
34 .Plural
35 .Special-purpose attachments
36 .Poles
37 ..Agricultural-implement type
38 ..The pole body
39 ..Selective positioned
40 ..Slip tongue
41 ..Axle attached
42 ...Width adjustment
43 ..Axle hounds attached
44 .Thills
45 ..Two-wheeled vehicles
46 ..Offset draft
47 ...Selective direct
48 ..Sectional
49 ..Joints and braces
50 .Tips
51 ..Safety neck-yoke retainers
52 THILL COUPLINGS
53 .Resilient
54 .Safety attachments
55 .Plural
56 .Special-position release
57 ..L-head type
58 ..T-head type
59 ..D-head type
60 .Removable transverse pin or bolt
61 ..Antirattling
62 ...With special pin retainers
63 ...Resilient
64 ....Adjustable
65 ..Special pin retainers
66 .Opposed lug engaging or carrying jaws
67 .L-head type
68 .T-head type
69 ..Cooperating hooks
70 ...Retainers
71 ....Spring
72 .D-head type
73 ..Cooperating hook
74 ...Retainers
75 ....Pivoted
76 ....Spring
77 ..Plural-part eye
78 ...Pivoted jaws
79 ....Grapple type
80 .Ball and socket
81 THILL-SUPPORTS
82 .Plural position
83 .Spring latches
84 .Spring
85 .Separate props
86 POLE SUPPORTS
87 .Ground-engaging props
88 .Spring
89 ..Coil
90 WHIFFLETREES
91 .Resilient
92 .Metallic
93 ..Trussed
94 .Trussed
95 .Connections
96 ..Link or clevis
96.1 ...Resilient
96.2 ...Adjustable draft line
96.3 ....Horizontally
97 ..Resilient
98 ...To pole or thills
99 ..To pole or thills
100 ...Pivot bolt
101 ....Offset pivot
102 .Trace and whiffletree connections
103 ..Resilient
104 ..Clamp
105 ..Trace-eye-engaging head or end
106 ...Loop retainers
107 ...Hook retainers
108 ...Spring-detent retainers
109 ...Pivoted button or lug retainers
110 ...Rotatable-button retainers
111 ..Hooks
112 ...Trace retaining
113 ....Movable keeper
114 .....Snap-hook type
115 ....Special-position release
116 .....Opposed lapping hooks
117 ...Whiffletree fastenings
118 TRACE AND THILL OR POLE CONNECTIONS
119 NECK YOKES
120 .End construction
121 .Pole couplings
122 ..Modified pole and yoke (center)
123 ...Permanently attached
124 ..With safety devices
125 ..Leather eye or ring
126 HOLDBACKS
127 .Harness attached
128 ..Breech strap
129 ...Adjustable
130 ...Automatic release

CLASS 279 CHUCKS OR SOCKETS

DECEMBER 1990

1 R	MISCELLANEOUS
1 A	..Adapters
1 B	..Quick
1 C	..Centrifugal type
1 D	..Diaphragm type
1 DC	..Dual chucks
1 E	..Ejectors
1 F	..Sliding cam type
1 G	..Gear holding
1 H	..Independent motor type
1 J	..Compensating for eccentricity
1 K	..Chuck key cooperating structure
1 L	..Centering
1 M	..Magnetic type
1 ME	..Mechanical expedients
1 N	..Non-split collet
1 P	..Overhang
1 Q	..Rubber
1 DA	..Double acting
1 S	..Stops
1 SG	..Self-grasping
1 SJ	..Soft jaws
1 T	..Twist
1 TE	..Transverse eccentric actuating means
1 TS	..Tool select
1 W	..Washer type jaw or actuator
2 R	EXPANDING
2 A	..Fluid actuated
3	VACUUM
4	WITH FLUID-PRESSURE ACTUATOR
5	ANGULARLY ADJUSTABLE OR INDEXING
6	ECCENTRIC
7	THREADED GRIP
8	LONGITUDINAL SCREW CLAMP
9 R	SOCKET TYPE
9 A	..Adjustable spindle
14	.Multiple alternative
16	.Self-centering of floating
17	..Radially reciprocating jaws
18	..Transverse holder and setscrew
19	.Lost motion
19.1	..Swinging external yoke or detent
19.2	...Rotary socket
19.3	..Rotary socket
19.4	..Spreading elements
19.5	..Key retainer
19.6	..Sleeve type retainer
19.7	...Sleeve in socket
20	.Fluid-conduit drill holding
	.Self-grasping
	..Yielding grasping jaws
22	...Ball or roller
23 R	...Spring jaws
23 A	.....Feed type
24	..Yielding detent
	..One-way-clutch type
28	...Wedge
29	...Side detent
30	....Ball or roller
32	.Conical clamp threaded in socket
33	.Transversely oscillating jaws
34	..Screw actuated
35	.Pivoted jaws
	..Moving-cam actuator
36	...Threaded cam sleeve
37	...Reciprocating cam sleeve
38	..Fixed cam and moving jaws
39	...Axial screw actuator
40	...Threaded-sleeve actuator
	.Split socket
41 R	..Resilient
41 A	....Feed type
42	...Threaded cam sleeve
43	...Reciprocating cam sleeve
44	..One movable side
45	...Sleeved
46 R	.Spring jaws
46 A	...Feed type
	..Moving-cam actuator
47	...Threaded sleeve and wedge
48	...Threaded cam sleeve
49	....Loose jaws
50	...Reciprocating cam sleeve
51	..Fixed cam and moving jaws
52	...Threaded-sleeve actuator
53	...Axial screw actuator
54	..Loose jaws
55	.Loose jaws
	..Moving-cam actuator
56	...Threaded cam sleeve
57	...Reciprocating cam sleeve
58	..Fixed cam and moving jaws
59	...Threaded sleeve and body
60	.Obliquely guided reciprocating jaws
61	..Threaded sleeve and jaw
62	...Conical sleeve
63	..Threaded central cone and jaw
64	..Threaded sleeve and body
65	..Reciprocating jaw advancing sleeve
66	.Radially reciprocating jaws
67	..Transverse-screw actuated
68	...Interlaced jaws
	..Moving-cam actuator
69	...Threaded cam sleeve
70	...Threaded sleeve and wedge
71	...Rotary eccentric-cam sleeve
72	....Roller and rocking jaw
73	....Worm actuated
74	...Reciprocating cam sleeve
75	....Ball or roller jaws
76	.Side detent
77	..Pivoted or rotary
78	...Sleeved
79	..Spring
80	...Sleeved
81	..Rotary cam sleeve
82	..Reciprocating sleeve
83	..Set screw
84	..U-clamp
85	..Plural bolt
86	..Single transverse bolt
87	..Longitudinal clamping wedge
89	.Shouldered-tang holding
90	..Cap
91	...Screw
93	.Tang offset within socket
94	.Tang offset without socket
95	.Bottomless
96	..Friction grip
97	.Transverse pin
99	.Screw threaded
100	..Nut lock
101	...Threaded sleeve
102	.Friction grip
103	..Drill type
104	.Barbed or pronged tang
105	.Molded or cast-in tang
106	PIVOTED JAW
107	.Cam-sleeve actuated
108	.Internal-cone actuated
109	.Toggle actuated
110	RADIALLY RECIPROCATING JAWS
111	.With indicator
112	.Transverse-screw actuated
113	..Annular rack
114	.Spiral cam or scroll actuated
115	..Worm
116	..Bevel pinion
117	.Rack-and-pinion actuated
118	.Toggle actuated
119	.Lever actuated
120	..Internal cone
121	.Wedge actuated
122	.External-cone actuated
123	.Jaws

CLASS 280 LAND VEHICLES

1	MISCELLANEOUS
827	SIMULATIONS OF THE VELOCIPEDE TYPE
828	.Occupant propelled
829	..Boat
1.12	..Aircraft
1.13	..Figure
1.14	...Noise makers
1.16	...Figure and carriage
1.165	....With moving figure or figure parts
1.167	.....Relatively movable legs
1.173	...Plural
1.175	...Progressing rocker type
1.177	....Plural relatively moving rockers
1.181	...With alternately advanced ground engaging means
1.182	....Galloping progression
1.183	.....Foot or saddle actuated
1.184	.....With additional ground engaging means
1.186	...Occupant not astride
1.188	...Convertible, interchangeable or adjustable
1.189	...Combined
1.191	...With rider body motion
1.192	....With figure motion
1.193	.....Platform rocker type
1.194	.....Additional relatively movable drive
1.195	.....Rigid or rigid link steering
1.196	.....Body centrally pivoted
1.201	...Movably mounted figure or figure parts
1.202	....Steering movement
1.203	.....Body hinged in vertical plane
1.204	....Movable legs
1.206	...Rein steered or driven
1.207	...Stirrup steered or driven
1.208	...Hollow body
1.21	.Aircraft
1.22	.Figure
1.23	..Attendant propelled
1.5	WITH MEANS FOR ENGAGING BODY OF WALKING ATTENDANT
3	WHEELED PROPELLED
4	HOSE AND LADDER
830	TANK OR BOILER
7	.With tank leveling device
831	.Tank forms load support
832	.Insulated tank walls
833	.Saddle type; vehicle frame straddling
834	.Service tank
835	..Cycle type
836	.Ground engaging or rolling wheel type
837	.Semitrailer tank vehicle
838	.Tank truck
839	.Trailer tank vehicle
5.2	STEP OR ABUTMENT ASCENDING TYPE VEHICLE
5.22	.With endless track
5.24	.With skid or rollerway
5.26	.With spider-type engaging means
5.28	.Relatively movable running gear portions
5.3	.Jack-type attachment, i.e., elevating
5.32	.Fulcrum attachment
840	BODY-LEVELING DEVICES
6.1	.With ground engaging means moved vertically responsive to body level sensing means
6.11	.With ground engaging means interconnected for opposite vertical adjustment
6.12	.Using hydraulic motor
7.1	CONVERTIBLE, I.E., VELOCIPEDE TYPE
7.11	.To drop frame
7.12	.Wheel to or from runner
7.13	..Skates
7.14	..Substituted
7.15	.Occupant propelled
7.16	..To or from plural occupant
7.17	..To non-propelled
8	WHEELED AND RUNNER
9	.Retracting wheel or runner
10	..Wheel-runner type
11	..Pivoted lateral axis
841	SKATES
11.115	.With propulsion means driven by occupant
11.12	.Runner type
600	..Snow skates
601	..Skis
602	...With camber or flexibility control
603	...Knockdown, folding or collapsible
604	...With climbing or braking means
605	....Pivotally mounted brake member
606	...Steerable or with handle
607	...With foot supporting plate or portion
608	...With edge or guide strip
609	...With special shape, contour or groove
610	...Laminated or synthetic material
11.14	..With resiliently mounted foot supports
11.15	..Jointed runner and foot supports
11.16	..Extensible
11.17	..Tubular foot posts
11.18	..Runners
842	.Ski simulators
843	.Ball type roller skates
844	.Endless tread skates
11.19	.Wheeled skate
11.2	..With brake
11.21	..With retrogression preventers
11.22	..Tandem wheels
11.23	...Two-wheeled
11.24	..One-wheel
11.25	..Two-wheeled
11.26	..Extensible
11.27	..Trucks and mountings
11.28	...Resiliently yieldable
11.3	.Shoe attaching means
11.31	..Toe and/or heel clamps
11.32	...Screw actuated
11.33	...Lever actuated
11.34	....With screw adjustment
611	..Ski fasteners
612	...Magnetic
613	...Operating mechanism located in or under boot
614	...Cross-country to or from downhill
615	...Cross-country only
616	...Toe and heel fasteners interconnected for simultaneous operation
617	...Toe and heel fasteners mounted on common support plate or element
618	....Plate is movable or releasable from ski
619	...Heel cable and/or ankle strap type
620	....Attached to movable or releasable plate
621	....Cable tightening mechanism mounted on ski
622	....With means to separate cable or pull cable from boot
623	...Hold-downs or clamps
624	....Side or rear hold-down only, e.g., "Spademan" bindings
625	....Clamp comprises plural sole engaging members
626	....Pivotal about horizontal and/or vertical axis
627	.....With non-pivotal hold-down or clamp
628	.....Pivotable about both horizontal and vertical axis
629	.....Pivotable about vertical axis or axes
630	......Single fixed axes
631	.....Single, fixed, transverse horizontal axis
632	......With latch or catch means

	SKATES
	.Shoe attaching means
	..Ski fasteners
	...Hold-downs or clamps
633	....With adjustable or detachable support
634	....With specific detent, adjustment or tension structure
635	....Toe irons, i.e., side cheeks
636	...Sole supports and antifriction devices
637	...With runaway strap
11.36	..Ankle braces
809	SKI OR SKATE APPLIANCE OR ATTACHMENT
810	.Wind sail for propelling or braking skier or skater
811	.Ice or roller skate boot attachment (e.g., cover, protector, etc.)
812	.Seat supported by ski pole
813	.Ski or pole having means to scrape snow or ice from ski or boot
814	.Clamp, tie, or case for carrying or storage of skis
815	..Prevents warp, maintains camber, or conforms to ski shape
816	.Combined
817	.Anti-crossover for skis
818	.Having means interconnecting skis for training
819	.Ski pole
820	..Having means to interconnect with another pole
821	..Hand grip
822	...Having quick release means
823	..Adjustable length (e.g., retractable tip)
824	..Ring or basket
825	.Scabbards for ice or roller skates
826	.Riding stick
845	RUNNER VEHICLE
12.1	.With occupant propelled means
12.11	..Intermittent ground engaging
12.12	...Foot actuated
12.13	..Traction wheel drive
12.14	...Foot actuated
13	.Wheel runner
14	.Hub runner
14.1	.Skis converted to sled
14.2	.Standing occupant
14.3	..With steering handle
15	.Multiple sled
16	..Occupant steered
17	..Swivel and rocking
18	.Toboggan
18.1	..Bowl or saucer type
19	..Drag
19.1	.Shelter sled
20	.Folding
21.1	.Occupant steered
22	..Flexible runner
22.1	..Tiltable runner type
23.1	.Push
24	.With draft attachment
25	.Spring
26	.Rocker runner
27	.Knees
28	.Runner bases
28.11	.With brake
28.12	.Container type
28.13	.Logging type sled
28.14	.Central runner
28.15	..With auxiliary outrigger runner
28.16	.Auxiliary top, bottom or side runners
28.17	.Machinery sled
28.18	..Tank or vacuum cleaner
28.5	WHEEL SUBSTITUTE
29	WHEELED
200	.Occupant propelled type

201	..Combined with pump
202	..With carrier
203	...Sidecar type
204	...Trailing vehicle
205	..Single axis or wheel
206	...Occupant within wheel
207	....Epicyclic or squirrel cage type
208	....Dicycles
209	..Parallel connected cycles
210	..With propulsion means
211	...Steering by driving
212	...Added or stored energy device
213	....Sail attachments
214	....With occupant propulsion means
215	.....Interposed power storing device
216	......Fluid system
217	......Flywheel or weight
218	...Inching or step-by-step
219	...Intermittent ground engaging drive
220	...Movable occupant support
221	....Interconnected with propulsion means
222	.....Plural occupant propelled
223	.....With added power application
224	......Hand and foot
225	......Hand
226.1	.....Moveable seat
227	......And crank hanger
228	.....Treadmill type
229	....Eccentrically mounted wheels
230	...Plural power application
231	....Plural occupant propelled
232	.....Hand and foot
233	....Hand and foot
234	.....Interconnected steering means
235	.....Seat or body steered
236	...Reversing and power ratio change
237	....Reversing
238	....Shiftable clutch or gearing
239	...Three tandem wheels
240	...Interconnected steering means
241	...Intermittent gripped belt or chain
242.1	...Hand propelled
243	....Strap, drum and ratchet
244	....Oscillating lever
245	.....Rack and pinion
246	.....Linkage and ratchet
247	.....Linkage and crank
248	......With gearing
249	....Hand wheel or crack and gearing
250	.....Belt or chain
250.1	....Wheelchair type
251	...Strap, drum and ratchet
252	...Reciprocating power application
253	...Oscillating lever
254	....Rack and pinion
255	....Linkage and ratchet
256	....Linkage and crank
257	.....With gearing
258	....Ratchet and gearing
259	...Rotary crank power
260	....With gearing
261	.....Belt or chain
262	....With pitman
263	..With steering
264	...Combined with brake
265	...Foot steered
266	...Seat or body steered
267	...Two-wheel controlled
268	....Centering
269	....Stub axle
270	...One-wheel controlled
271	....Centering
272	....Checked
273	....Plural occupant
274	....Frames and running gear
275	.....Yielding
276	......Front forks and heads
277	.......Independent wheel mounting

	WHEELED
	.Occupant propelled type
	..With steering
	...One-wheel controlled
	....Frames and running gear
278	.....Extensible and knockdown
279	.....Front forks and heads
280	......Crowns
281.1	..Frames and running gear
282	...Polycycles
283	...Yielding
284	....Rear forks
285	.....Independent wheel mounting
286	....Independent wheel mounting
287	...Extensible and knockdown
288	...Rear forks
288.1	...Low profile
288.2	...Combined with body
288.3	...Hollow shell frames
288.4	..Attachments and accessories
290	...Occupant body harness
291	...Steps and foot rests
292	...Towing attachments
293	...Props and steadying devices
294	....Pedal attached
295	....Combined and/or convertible
296	.....With wheel or propulsion engaging means
297	.....With locking means
298	....Pivoted and extensible
299	.....U-frames
300	.....Plural leg
301	....Pivoted
302	.....U-frames
303	.....Plural leg
304	....Extensible or sliding
304.1	...Wheelchair
304.2	...Wheel driven
304.3	...Guards and reinforcements
304.4	....Occupant engaging
304.5	...Handling and carrying attachments
30	.Convertible
31	..Cradle or crib
32	..Skids
32.5	.With worker's support or shade
32.6	..Repairman's creepers
32.7	.Riding attachment
400	.Articulated vehicles
401	..Collapsible to superposed relation
402	..Single end suspension of transported vehicle
403	..With access between vehicles
404	..Load separately supported on plural units (e.g., pole carrying type)
405.1	..Load distribution adjustment
406.1	...Plural connections
406.2	....House trailer hitch type
407	...Adjustable connection to leading vehicle
407.1	...Semitrailer type
408	..With draft means at front and rear of same vehicle (e.g., vehicle train)
409	...For laterally offset vehicles
410	...Direct draft
411.1	..Multiple trailing vehicles
412	...Adjustable position
413	....Abreast
414.1	..Boat carrying type
414.2	...Temporarily attached wheel assembly
414.3	...Boat suspending means
414.5	..With actuator for moving trailing vehicle wheel vertically
415.1	..Convertible
416	...Animal and vehicle draft
416.1	...Convertible or interchangeable from one type coupling to another
416.2	....From three point hitch
416.3	....Male and female coupling member
417.1	....To or from gooseneck
418	...Two wheel and four wheel
418.1	...Semitrailer-type vehicle
419	..Interconnected steering of plural units
420	..Service connections
421	...Fluid
422	...Electric
423.1	..Semitrailer
424	...Passenger carrying type
425.1	...Coupling and uncoupling with facilitating lift means
425.2	....With additional detachable or shiftable gooseneck
426	...Steering by articulative movement
427	...Interrelated operation of coupling, landing gear and brake
428	....Interrelated brake and coupling
429	....Landing gear actuated by coupling action
430	.....Longitudinally movable trailer coupling
431	....Landing gear and coupling interlock
432	...Safety devices
433	...Fifth wheel only
434	....Self-coupling
435	.....Double pivoted jaws
436	......Urged to retaining position by draft
437	.....Transverse horizontal pivot retainer
438.1	....Moveably mounted
439	.....Resilient
440	......Rubber
441	......Slidably mounted
441.1	.....Turnable-type fifth wheel coupling
441.2	...Detachable or shiftable gooseneck type
442	..Wheel steering by articulative movement
443	...Stub axle
444	....Drawbar pivoting
445	.....With steering disabling means
446.1	..Condition responsive connections
447	...Freely laterally shiftable
448	...Reversal responsive articulation modification
449	...Overload release
450	....Notched bar and detent
451	....Frangible member (e.g., shear pin)
452	....Pivoted jaw or hook
453	.....Linear motion hook release
454	.....Double link retainer
455	.....Resilient keeper
455.1	...Antisway hitch
456.1	..Plural or laterally adjustable connections
457	...Auxiliary safety connection
458	...With crossed connections
459	...Auxiliary tracking connection
460.1	...Laterally spaced parallel connections
461.1	...Vertically spaced connections
462	...Angularly adjustable trailer tongue
463	....With actuator
464	.....Gearing
465	......Screw
466	......Belt and sprocket
467	...Laterally or angularly adjustable vehicles
468	....With actuator
469	.....Gearing
470	......Screw
471	......Belt and sprocket
472	..Laterally offset
473	...Side draft
474	..Selectively rigid or flexible
475	..With retractable ground support
476.1	..Wheeled draft connection

	WHEELED
	.Articulated vehicles
477	..Connection facilitating
478.1	...Draft element bodily shiftable
479.1	....With motor
479.2	....Telescoping drawbar swingable on horizontal guide
479.3	....Extensible swingable tow bar with coacting guide for centering
480	..Tow ropes, chains, etc.
480.1	...With particular storage for retracted position
481	..Pusher type
482	..Adjustable length draft devices
483	..Resilient
484	...Plural biased movements
485	....By single resilient element, e.g., rubber block type
486	...In line of draft
487	....To intermediate position
488	...About vertical pivot
489	...About horizontal transverse pivot
490.1	..Vertically adjustable
491.1	..Retractable, foldable or knockdown
491.2	...Telescoping
491.3	...Pivoting to nonuse position with single draft member
491.4	...With folding braces movable to collapsed position
491.5	...Readily demountable hitch
492	..Plural articulation axes
493	...Tow bar
494	....Horizontal pivot with vertical or universal pivots
495	..Vehicle mounting or clamp
496	...Forward of leading vehicle rear axle
497	...Vertically spaced connections of draft element to leading vehicle
498	...Pivoted
499	....Vertical pivot and spaced horizontal guide
500	...Modified bumper or non-coupling bumper clamp
501	....With other vehicle connection
502	....Bumper clamp
503	...Axle connection
504	..Coupling
505	...Bumper forms coupling element
506	...Rattle preventing
507	...Protector or lock
508	...Self-coupling
509	....Biased open
510	....Opened by opposite coupling part
511	...Ball and socket
512	....Pivoted jaw or retainer
513	....Reciprocating jaw or retainer
514	...Interlocked
515	...Draft pin
33.991	.Nesting vehicles
33.992	..Attachments or accessories
33.993	...Children's seat
33.994	...Brake or antitheft device
33.995	..With means facilitating unloading
33.996	..Pivoted load support
33.997	..Load supporting frame
33.998	..Vertically nestable or confined
638	.Extensible
35	..Article support
639	..Folding
640	...Casket or stretcher type
37	...Traveling case
38	...Pivoted wheel carrier
39	....Longitudinal axis
40	.....Two-wheel
641	....Transverse axis
642	.....Three- or four-wheeled chair, baby carriage, or stroller
643	......Convertible
644	......Body made of flexible material
645	.....One- or two-wheeled cart
646	......Laterally, inwardly collapsing wheels
42	...Lateral
647	...Wheeled chair, stroller, or baby carriage
648	....Convertible
649	....With pair of laterally spaced "x" members
650	....Chair or stroller for seated occupant
651	...Cart
652	....One- or two-wheeled
653	.....Wheelbarrow
654	.....Wheels attached to lower end of handle frame
655	.....Collapsible handle
655.1	...Handle only is collapsible
656	..Trailer
657	..Carriage for live occupant
658	...Child's carriage
659	..Hand cart of barrow
43	..Vertically adjustable wheels
46	...Tongue
47	...Wheel adjusted by its own power
43.1	...Tiltable vehicle stabilized by attendant or article
43.11	...Load surface below wheel axis
43.12	...Pallet truck type
43.13	...Interconnecting means for adjusting wheels on different axles
43.14	....With nonwheel means for engaging the supporting surface
43.15	.....With means to vary distance between wheels
43.16	....With means to vary distance between wheels
43.17	...With actuator
43.18	....With resilient mounting for body
43.19	....With flexible connection
43.2	....Screw-jack type
43.21	....Rack and pinion or ratchet type
43.22	....Translating motion
43.23	....Power operated
43.24	...With nonwheel means for engaging the supporting surface
87.01	.Coasters
87.021	..Occupant-pushed
87.03	...Yieldable
87.041	...Standing occupant
87.042	....Steered by tiltable platform (e.g. skateboard)
87.043	....Rear steering platform on coaster wagon
87.05	...Extensible or knockdown
87.051	...Baby walker
47.1	.Body rocking by wheel rotation
47.11	.Wheel steering by attendant
47.12	.Vehicles with rocker or fulcrum supports auxiliary to wheels
47.131	.Tiltable vehicles, stabilized by attendant or article
47.15	..Vehicle axle, shaft or spring engaging
47.16	..With auxiliary wheel stabilizing means at both ends
47.17	..Handle-propelled vehicles
47.18	...Convertible, selective, or changeable body
47.19	...Plural load supports
47.2	...With auxiliary wheel stabilizing means
47.21	...With shiftable main axle support
47.22	....Spring suspension
47.23	...Load base below wheel axis (e.g., drop body type)
47.24	...Laterally spaced wheels
47.25	....With occupant seat

	WHEELED
	.Tiltable vehicles, stabilized by attendant or article
	..Handle-propelled vehicles
	...Laterally spaced wheels
47.26	....With receptacle body
47.27	....With toe (e.g., warehouse truck)
47.28	.....With auxiliary toe or rack
47.29	.....Movable
47.3	...Single wheel vehicle
47.31	....With receptacle body (e.g., wheelbarrow)
47.315	...Adjustable handle
47.32	..Single wheel vehicle
47.33	..With leg supports
47.331	..Boat carrier
47.34	.Stable vehicles, handle-propelled
47.35	..Plural load supports
47.36	..Reversible handles
47.371	..Adjustable handle
47.38	..Occupant seating type (e.g., baby carriages)
47.39	...Reversible body
47.4	...Seat with back and/or foot rest
47.41	...Body movably supported relative to wheels
2	.Dropped bodies
62	.Three-wheel
63	.Two-wheel
64	..Adjusting wheels
65	..Spring
66	...Thill and axle connected
67	....Interposed spring
68	.....Body thill mounted
69	.....Body axle mounted
70	....Body thill mounted
71	.....Adjustable
72	....Body axle mounted
73	.....Adjustable
74	....Adjustable
75	...Thill and body connected
76	....Adjustable
77	...Adjustable
78	.One-wheel
79	.Spring
79.11	.Body with bracketed-type or nonsuspended axles (e.g. platform type)
79.2	..Receptacle or occupant seating body
79.3	..Rack-type body
79.4	..Wheel or tire support body
79.5	..Bucket or can support body
79.6	..Cylindrical object with elongated horizontal axis support body
79.7	..Vertically elongated rectangular object support body
80.1	.Running gear
81.1	..Multiple truck
81.5	...Occupant steered
81.6	...Self-steered trucks
82	..Tongue truck
83	...Vertically adjustable
84	...One-wheel
85	...Swinging axle and rocking
86	..Swivel truck
771	..Occupant steered
87.1	...Foot operated
87.2	...Outrigged wheel controlled
772	...With cornering tipping deterrent
773	...With manually powered hydraulic steering
774	...With remote position steering
775	...With adjustable steering wheel or column
776	...Including bias means maintaining steerable wheel and elongate surface engagement (e.g., furrow followers)
777	...Steering column or wheel movable in response to collision
778	...Plural steering hand grips or noncoaxial steering wheel and column
779	...With steering column mount or support
780	....Having nonrigid member
88	...Combined brake
89	...Checked
90	....Fluid
91	...Four-wheel controlled
92	...One-wheel controlled
93	...Stub axle
94	....Centering
95.1	....Link connected
96	.....Rotary shaft and gearing
846	.....Idler arm steering linkage
96.1	....Mounts
660	.....With suspension means
661	......With caster and/or camber adjustment
662	......Plural diverse springs
663	......Lever and spring
664	.......Torsion spring
665	........Stabilizer bar
666	.......Coil spring
667	........Coil located above upper lever arm
668	........Coil mounted on turnable strut, e.g., "Mac Pherson-type" suspension
669	......Leaf spring
670	......Coil spring
671	......Rubber spring
672	......Fluid spring
673	......With connection or element feature
674	.......Ball joint feature
675	.......Geometric feature
96.3	.....Pivot in wheel plane
97	...Swinging axle
98	..Short turn
99	...Four-wheel controlled
100	....Oppositely swinging axles
101	.....Pivoted and sliding reach
102	.....Crossed reaches
103	...Stub axle
104	..Equalized frame
676	...Tandem axles
677	....With walking beam
678	.....With fluid-type suspension
679	.....With torsion-type suspension
680	.....With leaf-type suspension
681	.....With rubber-type suspension
682	....With rocker
683	....With fluid-type suspension
684	....With torsion-type suspension
685	....With coil-type suspension
686	....With leaf-type suspension
687	....With rubber-type suspension
105	..Roller bearing frame
781	..Vehicle frame
782	...Forming fluid or electrical conduit means or having other means to accommodate the transmission of a force or signal
783	...Having storage compartment
784	...Having impact absorbing means
785	...Assembled from prefabricated connectable sections
786	...Single longitudinal beam type
787	....With spring suspension means
788	...With resilient means for suspension
789	...Trailer type
790	...Having vertically offset load bearing surface
791	...Pinched frame type
792	...Wide-hipped frame type
793	...X-frame type

	WHEELED
	.Running gear
	..Vehicle frame
	...X-frame type
794	....Tansverse frame members form "X"
795	...Transverse member is body support
796	...Having tubular transverse frame member
797	...Longitudinal frame member is box-shaped
798	...Longitudinal frame member is tubular
799	...Longitudinal frame member is an "T" beam
800	...Longitudinal frame member is channel-shaped
107	..With body or load retainers
108	..With tongue antivibrators
109	..Swinging axle and rocking
110	...Spring
111	..Rocking
112.1	...Spring
112.2	....Roll-responsive rocking axles for body banking
113	..Swinging axle
114	...Platform type
115	....Spring
116	...With draft attachment
117	...Offset pivot
118	....Spring
119	.....Longitudinal leaf
120	...Spring
121	....Leaf
122	.....Longitudinal
123	.....Cross
688	..Suspension means
689	...Anti-sway
690	...Independent
691	....Steerable
692	.....Plural diverse springs
693	.....Fluid
694	.....Leaf
695	.....Torsion
696	.....Coil
697	....Plural diverse springs
698	....Fluid
699	....Leaf
700	....Torsion
701	....Coil
702	...Fluid
703	....Anti-nose dive and/or squat systems
704	....Wheel raising
705	....Road arm
706	....Vacuum controls spring strength
707	....With electric control means
708	....Hydro-pneumatic
709	....Hydraulic
710	.....With non-fluid spring means
711	....Pneumatic
712	.....With nonfluid spring means
713	.....With lever stabilizer means
714	....With specific valve or valve arrangement
715	...Plural, diverse nonfluid springs
716	...Rubber
717	....Torsion
718	...Leaf
719	....Transverse
720	....Single leaf
721	...Torsion
722	....Coil
723	....Transverse
724	...Coil
725	....With lever stabilizer means
726	.....Transverse lever
125	..Swinging axle connections
126	...Rocking
127	....Platform types
128	.....Spring
129	....Spring
130	...Platform type
131	....Spring
132	...With draft attachment
133	...Offset pivot
134	....Spring
135	.....Longitudinal leaf
136	...Spring
137	....Longitudinal leaf
138	...Antirattlers
139	..Hounds
140	..Reaches
141	...Swivel
142	...Extensible
143	..Bolsters and standards
144	...Varying width adjustment
145	...Pivotally connected
146	...Vertically adjustable standard
147	...Readily removable standards
148	...Supplemental bolsters
149	..Irons and clips
149.1	..Interchangeable axles
149.2	..Longitudinally shiftable running gear
727	.Attachments
728	..Inflatable passenger restraints or confinements and attachments thereto
729	...Plural compartment confinement, e.g., "bag within a bag"
730	...Inflated confinement specifically positioned relative to occupant
731	...Deflated confinement located within or on steering column
732	...Deflated confinement located in or on instrument panel
733	...In the form of or used in conjunction with a belt or strap
734	...Responsive to vehicle condition
735	....Electric control and/or sensor means
736	...With source of inflation fluid and flow control means thereof
737	....With means to rupture or open fluid source
738	....With means to aspirate ambient air
739	....With confinement deflation means
740	....With means to diffuse inflation fluid
741	...Inflation fluid source
742	...Flow control means
743	...Confinement structure
801	..Safety belt or harness, e.g., lap belt or shoulder harness
802	...Passive restraint system
803	....Having belt retractor mounted on vehicle closure
804	....Having belt connected to member slidable in a vehicle-mounted track
805	...With energy absorber
806	...Inertia responsive locking or tightening of belt or harness
807	...Retractable
808	...Shoulder belt or harness
748	..Passenger safety guards
749	...Safety net, curtain, or transparent sheet
750	...Connected to the steering wheel or column
751	...Padded or cushioned member
752	....Instrument panel or dashboard
753	....Positionable by automatic actuator
754	..Vehicle spring jacking lock, between sprung and unsprung mass
755	..To prevent vehicle tip or tilt
756	..Roll bars and/or overhead guards
757	..Anti-skid or slide
758	...Shiftable-type anti-skid counter weights
759	...Static-type anti-skid counter weights

	WHEELED
	.Attachments
760	..Auxiliary platform or frame attachment for tractors
761	..Parking assisting devices, nonpowered
762	..Exterior
763.1	...Retractable prop, support or stabilizer
764.1	....With actuator for pivoted support
765.1	.....Having additional translating or telescoping movement
766.1	....With actuator for translating or telescoping support
767	...Auxiliary wheel
768	...Trailer skirts
769	...Article carriers
770	...For protecting the vehicle body
151	..Auxiliary load starters
847	..Dust and mud guards
152.05	...With wheel or tire carrying means
152.1	...Velocipede type
152.2	....Combined with wheel guards
152.3	....Flexible or sectional
848	...Body attached
153.5	....Joints welts
154	....Securing device
849	....Fender skirts
850	....Scuff pads and covering shields for fenders
851	...Splash guards
852	....For velocipedes
155	...Thill or tongue attached
156	...Wheel attached
157	...Axle attached
853	...Aperture fender wall with closures
854	...Fender braces
855	..Wheel scrapers and cleaners
158.1	...Velocipede type
856	...Wheel scrapers for dual wheels
159	..Dust guards
160	..Wheel guards
160.1	...Velocipede type
161	..Chafe irons
162	...Roller
163	..Steps
164.1	...Combined devices
164.2	....Steps combined with shoe scrapers
165	...Wheel or axle attached
166	...Shiftable
169	...Treads
170	..Whip sockets
171	...Whip gripping
172	....Spring
173	....Rubber gaskets
174	....Pivotally connected sections
175	...Brackets and clips
176	...Lock
177	...Combined rein holders
178	...Whip manipulating devices
180	..Hay load binder
181	..Rein supports and guards
182	..Rein holders
183	...Clamp
184	....Spring
185	.....Pivoted jaws
186	..Hitching and controlling devices
187	...Weight
188	...Ground engaging brake lever
189	...Wheel operated
190	....Winding drum
191	.....Shiftable gear
192	.....Clutch

****

CROSS-REFERENCE ART COLLECTIONS

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900	RUNNER VEHICLE ATTACHMENTS
901	ADAPTATIONS ON NONSPECIALIZED VEHICLES TO SEMI-TRAILER TRACTORS

****

DIGESTS

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DIG 1	Load responsive (leveling of vehicle)
DIG 2	Wheel supports for outboard motors
DIG 3	Wheeled shopping bag
DIG 4	Grocery store cart
DIG 5	Motorized golf carts
DIG 6	Wheeled golf club carriers
DIG 7	Air bag rollers
DIG 8	Separable body or container-type semi-trailers
DIG 9	Occupant-steered trailers
DIG 10	Stair climbing chairs
DIG 11	Walking attendant steered trailers
DIG 12	Clamp-type ski bindings having plural diverse axes or clamps
DIG 13	Ski binding controlled by skier position or by remote control
DIG 14	Tractor-trailer backing connections

CLASS 281 BOOKS, STRIPS AND LEAVES

2	STRIPS AND LEAVES
3.1	BOOK AND LEAF
4	.Removable cover
4.1	.Blotter leaf
5	STRIPS
6	.With platen
7	..Strip retained
8	...With feed
9	...With attaching means
10	..Leaf retained
11	..With feed
12	..With attaching means
13	...Wall
14	.Strip retained
15.1	BOOK, ELEMENT THEREOF, OR ACCESSORY THEREFOR
16	.Multiple
17	..Removable cover
18	.Sealed
19.1	.Removable cover
19.2	..Loop engaging
20	.Protectors
21.1	.Binding
22	..Scrapbook
23	..Continuous strip
24	..Guard
26	..Undercut slot
27	..Sewed
27.1	..Ring or arch
27.2	...Metallic
27.3	..Metallic
28	..Elements
29	.Covers
30	..With pencils
31	..With pockets
32	..With pulls
33	..Easel type
34	..Removable
35	..Flexible
36	..Backs
37	..Sides
38	.Leaves
39	..Erasable surface
40	..Flat opening
41	...Single leaf
42	..Book-leaf holders and marks
43	.Book hanger
44	.Pad holder
45	BOOK OR LEAF HOLDER
46	.Cooperating with leaf fold
47	..Continuous with fold
48	...Pliant, deformable means
49	...Hinged
50	..Extending through aperture at juncture
51	MISCELLANEOUS
	******************************
	DIGEST
	******************************
DIG 1	Magnet

CLASS 282 MANIFOLDING

DECEMBER 1990

1 R	MISCELLANEOUS
1 A	..Strips and leaves
1 B	..Foot impression devices
2	STRIPS, BOOKS AND LEAVES
3 R	STRIPS AND LEAVES
3 A	..With platen
3 B	...Folded strip record supply
4	.Strip retained
5	..With feed
6	.Leaf retained
7	.With feed
8 R	BOOKS AND LEAVES
8 A	..Carbon leaf attached to book holder or cover
8 B	..Book sheet sectional and folded in manifolding
8 C	...Carbon leaf attached to book holder or cover
9 R	.Multiple copy
9 A	...Book sheet sectional and folded in manifolding
10	..Multiple books
11	.Multiple books
11.5 R	BOOKS, ENVELOPES OR SHEET RECEIVING POCKETS IN STRIP FORM
11.5 A	..With feed
12 R	STRIPS
12 A	..Continuous
12 B	...With platen
13	.Strip retained
14	..Carbon
15 R	...With feed
15 A	.....Strip retained folded
15 B	.....Perforated strip feed
16 R	..With feed
16 A	....Strip retained folded
16 B	....Perforated strip feed
16 C	.....Strip retained folded
17	.Leaf retained
18 R	..With feed
18 A	....Perforated strip feed
19 R	.Carbon
19 A	...With platen
19 B	....Folded strip record supply
20 R	..With feed
20 A	....With platen
20 B	.....Perforated strip feed
21 R	.With feed
21 A	...With platen
21 B	....Friction feed
21 C	.....With perforated strip
21 D	....Pin wheel feed
22 R	BOOKS
22 A	..Book sheets sectional and folded in manifolding
23 R	.Impressed
23 A	...Book sheets sectional and folded in manifolding
24 R	.Multiple
24 A	...Book sheets forming elements of other books
24 B	...Book sheets sectional and folded in manifolding
24 C	....Book sheets forming elements of other books
25	ENVELOPES AND LEAVES
26	LEAVES
27 R	.Impressed
27 A	...Leaf sectional and folded in manifolding
28 R	.Carbon
28 A	...Marginal or indicia features
29 R	.Holders
29 A	...Booking, billing or posting boards
29 B	....With pin locating means for leaf
29 C	...Assemblies for writing machines

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DIGESTS

`*************************`

DIG 1	Pay check or envelope with statement of deductions
DIG 2	Adhesive

CLASS 283 PRINTED MATTER

2	CALENDAR
3	.Indexed
4	.Multiple book
5	BALLOTS
67	METHOD
68	.Fingerprint
69	..Identifying
70	.Identifying
71	STAMP
72	HAVING REVEALABLE CONCEALED INFORMATION, FRAUD PREVENTER OR DETECTOR, USE PREVENTER OR DETECTOR, OR IDENTIFIER
73	.Cryptogram (e.g., verification, tabular index)
74	.Identifier
75	..Personal
76	...Having microfilm or microfiche
77	...Having photograph
78	...Having fingerprint
79	..Stock indicator
80	..Baggage
81	..Label
82	.In incorporated magnetic material
83	.And electrically conductive material
84	..Overlaying vaporizable material revealing information
85	.Utilizing electromagnetic radiation
86	..Laser on incorporated hologram
87	..And incorporated radiation filter
88	...Infrared filter
89	...Ultraviolet filter
90	...Polarized
91	...Specific spectral transmittance or reflectance
92	..On incorporated fluorescent material
93	..Having dot pattern
94	.Utilizing superposed layers
95	.Utilizing chemical
96	.Utilizing solvent
97	..Water
98	.By mating or cooperating separable components
99	.By moveable components
100	.By removeable material
101	..Adhesively attached
102	..Erasable
103	..Tearable
104	...And cutting attachment
105	..Perforated
106	.By folded portion
107	.Having plastic laminate
108	..And differentiable sections
109	..And transparent laminate
110	...And translucent coating or laminate
111	..And opaque laminate
112	..And photograph
113	.Having watermark
114	.Having specific color
17	CRYPTOGRAPHIC RECORD TEMPLATE
23	TRANSPORTATION
24	.Mileage
25	.Return
26	.Commutation
27	.Transfer
28	..Premium
29	.Premium
30	.Cash-fare receipt
31	..Book
32	.Reference
33	.Book
34	MAPS
35	.Indexed
36	INDEXED
37	.Plurality of position markers
38	..Book
39	.Blank position markers
40	..Book
41	.Index only
42	.Book
43	..Multiple
44	MATHEMATICS
45	WRITING
46	LANGUAGE
48.1	TALLY
49	.Game
50	..Book
51	.Coupon
52	..Book
52.1	.Book
53	THEATER TICKETS
54	INSURANCE
55	INVENTORIES
56	ADVERTISING
57	BANKING
58	.Checks
59	.Certificates of deposit
60.1	SALES DOCUMENT
60.2	.Waiter's check
61	STRIPS AND LEAVES
62	STRIPS
63.1	BOOK
64	.Covers
64.1	.Accounting book
65	WITH SLIDING LEAF
66.1	ACCOUNTING OR LISTING FORM OR SHEET
66.2	.Connected
115	CHART OR GRAPH
116	ENVELOPE
117	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	MEDICAL RECORD
901	CONCEALED DATA
902	ANTI-PHOTOCOPY
903	LOTTERY TICKET
904	CREDIT CARD

CLASS 285 PIPE JOINTS OR COUPLINGS

DECEMBER 1990

1 SAFETY RELEASE
2 .With frangible or deformable element
3 FRANGIBLE ELEMENT
4 .Score line or groove
5 IRRIGATION TYPE (GUIDE AND SUPPORT)
6 .Released by conduit motion
7 VACUUM CLEANER TYPE
8 FAUCET TYPE (E.G., SLIP-ON)
9.1 WITH MAGNETIC ELEMENT
9.2 CONTACT ONLY
10 LIQUID SEAL
11 .With relative motion
12 CONVERTIBLE
13 WITH LEAKAGE OR DRIP DISPOSAL
14 .Weep holes
15 REPAIR
16 .Removable wear element
17 ..Alternate wear parts
18 WITH ASSEMBLY MEANS OR FEATURE
19 .Spaced plates
20 ..Penetrating
21 .For molded joints
22 ..Spacing means (e.g., lugs)
23 .With holding means functioning only during transportation assembly or disassembly
24 .Guide and support
25 ..Plural noncommunicating (e.g., train pipe type)
26 ...With latch or lock
27 .Guide
28 ..Plural noncommunicating
29 ...With latch or lock
30 .Combined inlet and outlet
31 .Inserted section
32 ..Threaded telescopic
33 .Quick release
34 ..Radially moved segmented threads (e.g., chuck type)
35 ...Pivoted segments
36 .Attached thread-jamming preventer
37 .With winder for packing or clamp
38 .Handle or handwheel for rotary engagement
39 .Particular tool-engaging means or with tool
40 .Thread-cutting means
41 WITH HEATING OR COOLING
42 ROOF OR FLOOR DRAIN FLASHING TYPE
43 .Angled
44 ..Adjustable pitch
45 WITH CASING, LINING OR PROTECTOR
46 .Escutcheon type
47 .Insulated
48 ..Between serially connected parts
49 ...Intermediate resilient conduit (noise-dampener)
50 ...By intermediate joint
51 ....Ball and socket
52 ....Screw thimble
53 ...Sleeve
54 ...Socket
55 .Lined
56 WATER CLOSET TYPE, FLOOR-SUPPORTED
57 .Flexible diaphragm or bellows
58 .Intermediate coupling
59 ..Tapered spigot
60 .Tapered spigot
61 WITH SUPPORT
62 .Vehicle
63 ..Railway
64 .Static building construction
65 IDENTICAL HALVES (E.G., TRAIN LINE TYPE)
66 .With intermediate sleeve
67 .Side slide
68 .Transverse port
69 ..Auxiliary detent
70 .Longitudinal port
71 ..Pivoted hook or loop
72 ...Auxiliary detent
73 ..Integral hook
74 ...Oscillating engagement
75 ....Reciprocating conduit
76 ....Auxiliary detent
77 .....Reciprocating
78 ......Key or wedge
79 ...Auxiliary detent
80 WITH LOCK OR SEAL
81 WITH MEANS BLOCKING RELEASE OF HOLDING MEANS
82 .Auxiliary latch
83 ..Line pressure-responsive
84 ..Reciprocating
85 ...With manipulator
86 ...Locking sleeve
87 ..Pivoted
88 ...With manipulator
89 .Lock nut or washer
90 .Set screw
91 .Key or pin
92 .Thread lock
93 WITH INDICATOR, ALARM OR INSPECTION MEANS
94 WITH LUBRICATION
95 WITH FLUID PRESSURE SEAL
96 .With external pressure supply
97 ..Inflated member
98 .Swivel with flange in socket
99 .Coacting opposing duplicate
100 .With expansible chamber means
101 ..Piston-type reactor
102 ...With line pressure-responsive catch
103 ...Side slide
104 .With separate, encased pipe-gripping means
105 ..Packing-actuated
106 .Independent supply passage
107 .Expansible shank
108 .Separate retainer or positioner
109 .Expansible internal sleeve-type gasket
110 .Flexible lip
111 ..C-shaped section
112 ...Longitudinal web
113 .Wedged gasket
114 WITH STRAIN RELIEF
115 .Extension of socket or sleeve
116 ..Separable
117 WITH BROKEN PARTS RETAINER
118 KNUCKLE JOINT WITH ACTUATING MEANS
119 COMBINED
120 SYSTEMS
121 .With access opening
122 ..Swivel
123 ...With hollow center bolt
124 ..Detachable return bend
125 ...With yoke clamp
126 ....Removable bushing
127 ..Elbow
128 .Pipe or cable and box
129 ..With attached closure flange
130 .Receptacle inlet and outlet in unitary mounting
131 .Plural noncommunicating paths
132 ..With branched flow
133.1 ..Concentric
133.2 ...Having suspension means (e.g., oil well head type, etc.)
134 ...With relative motion (e.g., drier drum type)
135 ....Ball and socket
136 ..With relative motion
137.1 ..Parallel
137.2 ...Having suspension means (e.g., oil well head type, etc.)
138 .Inner to spaced outer tube coupling
139 ..Radially compressed packing

SYSTEMS
.Inner to spaced outer tube coupling
140 ..Suspended (e.g., oil well casing type)
141 ...Radially movable support ring (split ring type)
142 ...Inner tube coupling with integral support
143 ....With intermediate member
144 ...Slip anchored inner tube
145 ....With slip actuator
146 ....With unitary slip and packing assembly
147 ....With slip-compressed packing
148 ....With packing seat on slip
149 .Plural layer pipe
150 .Branched
151 ..With relative motion
152 ...Double Y-type
153 ..With vent
154 ...Antisiphon
155 ..Y-type
156 ..T-type
157 .U-type
158 .Pipe or rod-to-pipe-to-plate
159 ..Dependent coupling
160 ..Ball and socket
161 ..Plate clamped between internal nut and shoulder or flange
162 ..Expanding spigot engages plate
163 .Serial relatively movable joints
164 ..Diverse
165 ...With telescopic type
166 ..Plural ball and socket
167 ...With sphere intermediate two sockets
168 ..Plural swivel
169 .Serial diverse single flow path or line
170 ..Intermediate joint with expansible spigots
171 ..Compound (e.g., leak-gland type)
172 ...With molded joint
173 ..Diverse materials
174 ...Nonmetal to metal
175 ..Diverse coupling interfaces
176 ..Diverse size or shape
177 ...Reducer
178 ...Eccentric
179 ELBOW
180 .Cooperating saddle clamp
181 .Serially connected, adjustable
182 .Nesting parts
183 .Sheet metal
184 ADJUSTABLE ANGLE
185 .With center bolt
187 TEMPERATURE-RESPONSIVE
188 SIDE TO PIPE SIDE
189 END TO SIDE OR PLATE
190 .Swivel with lateral port to annular sleeve
191 .Bolt or hook in flow (e.g., center bolt)
192 .Penetrating (e.g., secant)
193 ..Fixture
194 ..Hole edge clamp
195 ...Transverse screw
196 .Expansible packing on spigot
197 .Saddle-type clamp
198 ..Yoke with radial screw at bight
199 ..Yoke with thread on free ends
200 .Flexible or yielding plate
201 .Sput
202 ..Interlocked
203 ...Plate edge locks sput
204 ...Packed
205 ..Clamped plate
206 ...Screw clamp
207 ....With conduit clamping means
208 ....Attachable from one side of plate
209 .....Lugged nipple
210 ......Movable lug
211 .Countersunk packed
212 ..Screw-compressed
213 .Gland
214 ..Internal with expanding means
215 ..External of conduit
216 ...Expansible
217 ....With conduit clamping means
218 .....Transverse screw
219 .Screw
220 ..With packing
221 ..Necked plate
222 .Expanded or swaged pipe
223 FLEXIBLE JOINT, RIGID MEMBERS
224 .Radial and longitudinal expansion compensators
225 .Diaphragm
226 .Bellows
227 ..Multiple
228 ...Balanced
229 ..Single fold type
230 .Concrete, clay, or masonry pipe
231 .Socketed packing type
232 ..With conduit gripping means (e.g., wedge ring)
233 ..Beaded conduit
234 ..Flared conduit
235 .Resilient sleeve type
236 ..Clamped
237 ..With spigot and socket ends
238 NONMETAL TO METAL
239 .Internal member (e.g., sleeve or nipple)
240 ..Flexible tip pipe
241 ...External clamp
242 ..External clamp or holder
243 ...Movable jaw
244 ...Spring
245 ...Screw-compressed
246 ....Thimble gland
247 ....Thimble
248 .....Separable means between hose and clamp
249 ......Wedge ring
250 ....Gland
251 ....Screw-fed hose
252 ...Band clamp with tightener
253 ....Bolted
254 ...Wrapped band
255 ...Wedge
256 ...Deformation
257 ....Bendable spur fingers
258 ....Expanding internal member
259 ...Particular surface
260 BOTH MEMBERS PLIABLE AND NONMETAL
261 BALL AND SOCKET
262 .With internal tie means
263 .Radially spaced spherical surfaces
264 .Oscillative
265 ..With gimbal ring
266 .Composite ball
267 .Spring-biased packing
268 .Spring-biased ball
269 ..Socketed spring
270 .With separate packing actuator
271 .With removable ball seat
272 SWIVEL
273 .Transverse cylinder in socket
274 .With yoke
275 .Pipe in socket type
276 ..With ball, ring or pin detent
277 ...With manipulator
278 ..With flange in socket
279 ...Spring-pressed flange
280 ...Flange locked axially
281 ....Packed
282 .With rotation limits
283 DETACHABLE HINGE

284	MOLDED JOINT
285	.With root repellent
286	.Weld
287	.Solder
288	.Composite pipe (ends)
289	.With screw interlock
290	.With lug and slot interlock
291	.Lining molded to pipe end
292	.Sleeve
293	..Wrapped
294	..Sprue
295	.With packing filler
296	..Wedge ring type
297	.Sprue
298	VARIABLE LENGTH
299	.With bellows seal
300	..Internal sleeve
301	..With limit means
302	.Telescopic with relative motion
303	.Step adjustment
304	FRICTION DETENT (E.G., BREAKAWAY TYPE)
305	ESSENTIAL CATCH
306	.Line pressure-responsive
307	.Operated by conduit motion
308	.With manipulator
309	..With means to increase contact pressure (e.g., tightener)
310	...Separate actuator
311	...Dead center lever systems (self-locking)
312	...Cam lever
313	..Restrainer for manipulator
314	..Cam sleeve
315	...Reciprocating sleeve
316	....Spring-biased sleeve
317	..Spring-biased catch
318	.Coil spring
319	.Leaf spring
320	.Pivoted
321	.Resilient ring
322	MOVABLE JAW (E.G., CONTRACTIBLE SOCKET)
323	.Wedge bushing
324	.Reducing bushing
325	SIDE SLIDE
326	.Clamping lever
327	.Screw-thimble tightener
328	PARTICULAR INTERFACE
329	.Diverse metal
330	.Interlocked or overlapped
331	.Annular socket
332	.Tapered
332.1	..Conoidal
332.2	..Packed
332.3	...Interface
332.4	..Discontinuous interface surface
333	...Threaded (e.g., drill pipe type)
334	....Flat crest
334.1	..Adapter seat
334.2	...Double-tapered internal sleeve
334.3	...Elastomeric
334.4	..Dissimilar
334.5	..Flared
335	PACKED
336	.With cooperating opposed packing grooves
337	.Externally with clamp
338	.Radially expansible, spigot-carried
339	.Wedge
340	..Toggle ring type
341	..Double wedge surfaces
342	..Pushed
343	..Compressed
344	."Rolled-in" gasket
345	.Frictional retention upon insertion
346	..With packing-expanding means
347	.Carried on cylindrical shank
348	.With separable follower
349	.Supplemental packing socket
350	..Extrusion recess
351	.Plural seals
352	..Coacting opposed duplicates
353	.Screw thimble-gland
354	.Screw thimble
355	.Screw
356	.Gland
357	..Threaded
358	.Cam
359	..Thimble
360	..Lugged pipe, rotary engagement
361	...Bayonet slot
362	...With manipulating ring
363	.Flanged pipe
364	..Clamped
365	...Band type
366	....Screw
367	.....Tangential
368	...Axially bolted
369	.Sleeve
370	..Internal
371	...With external
372	..Dependent
373	...Longitudinally divided
374	.Socket
375	..Internal reciprocating packer
376	..Lugged pipe, rotary engagement
377	...With manipulating ring
378	.Diverse metal seat
379	.Gasket retainer
380	..Resilient stud
381	SHRUNK FIT
382	DEFORMED
382.1	.Both members
382.2	..Simultaneous
382.4	.Outwardly expanded
382.5	..Bulged
382.7	.By separate deformable element
383	DISTINCT SPACED SERIAL
384	SCREW THIMBLE-GLAND
385	.Wedge
386	SCREW THIMBLE
387	.Removable
388	..Detachable flange
389	.Wedge
390	SCREW
391	.Interrupted thread
392	.Attached thread bushing
393	.Gland
394	CAM
395	.Thimble
396	.Bayonet type
397	INTERNAL SLEEVE
398	.With external
399	SOCKET
400	.Detachable ring
401	.Lugged pipe, rotary engagement
402	..Bayonet slot
403	.With separable fastener
404	..Set screw or pin
405	FLANGE
406	.Clamped
407	..Band type
408	...With intermediate flange engaging member
409	...Lever
410	...Screw
411	....Segmented ring
412	..Axially bolted
413	..Rings
414	.Detachable
415	..Split ring
416	.Fused
417	SLEEVE
418	.Dependent
419	..Longitudinally divided
420	CLAMP
421	.Wedge

422	MATERIALS
423	.Nonmetallic
424	.Sheet
425	MISCELLANEOUS
	*******************************
	CROSS-REFERENCE ART COLLECTIONS
	*******************************
900	BALANCED PRESSURE
901	CAP CLOSURES
902	CANTED RING
903	CORRUGATED
904	CRYOGENIC
905	DIFFERENT COEFFICIENTS OF EXPANSION
906	EQUIVALENTS
907	ELECTRICAL FIXTURES
908	EXTRUSION HOLES
909	FLUOROCARBONS AND MEMORY PLASTICS
910	GASKETS
911	GLASS
912	GEAR
913	INTERDIGITATING
914	IRREVERSIBLE
915	MASTIC
916	MOLECULAR CHANGE
917	METALLIC SEALS
918	O-RING
919	RESINOUS
920	REMOTELY CONTROLLED
921	SNAP-FIT
922	SAFETY AND QUICK RELEASE FOR DRILL PIPES
923	SPECIFIC MATERIAL
924	VENTED
925	SWELLS WHEN WET

CLASS 289 KNOTS AND KNOT TYING

1.2	KNOTS
1.5	METHODS
2	KNOTTERS
3	.Weaver's knot
4	.Square knot
5	.Rotary lateral bill
6	..Swinging knotter frame
7	..Sliding jaw
8	..Pivoted inner jaw
9	...Angular drive
10	....Notched-disk cord holder
11	..Bills
12	.Sleeve and spindle
13	.Cord holders
14	..Notched disk
15	.Cord guides
16	.Needles
16.5	MACRAME
17	HAND IMPLEMENTS
18.1	MISCELLANEOUS

CLASS 290 PRIME-MOVER DYNAMO PLANTS

1 R	MISCELLANEOUS
1 A	..Unitary plant
1 B	..Air-cooled generator
1 C	..Drive gearing
1 D	..Chain drive
1 E	..Spring motor
2	HEATING PLANTS
3	TRAIN
4 R	PLURAL PRIME MOVER
4 A	..Tie with another generator
4 B	..Induction generator
4 C	..Plural with combined drive
4 D	..Plural prime movers with fluid interconnection
5	ALTERNATING CURRENT, ROTARY FIELD AND ARMATURE
6	MULTIPLE-ARMATURE DYNAMO
7	ELECTRIC CONTROL
8	.Excitation dynamo
	.Traction
9	..Electric traction motor
10	...With starting and generating dynamo
11	....With generator
12	....Rotary field and armature
13	....Ignition
14	...With generator
15	....Rotary field and armature
16	....Battery
17	....Engine control
18	...As starter
19	....As generator
20	.....Rotary field and armature
21	....Engine control
22	..Starting and generating dynamo
23	...Rotary field and armature
24	....Engine control
25	...Engine control
26	....Ignition
27	..Electric-starting motor with generator
28	..Electric-starting motor
29	..Rotary field and armature
30 R	.Demand starters
30 A	...Standby source
30 B	...Standby service
31	.Starting and generating dynamo
32	..With generator
33	...Ignition
34	..Engine control
35	...Ignition
36 R	.Electric-starting motor with generator
36 A	...Automatic starters including centrifugally operated contactors
37 R	..Ignition
37 A	....Stop cranking responsive to generator output
38 R	.Electric-starting motor
38 A	...Axially movable armatures
38 B	...Inertia starters
38 C	...Miscellaneous collection of automatic engine starters
38 D	...Stop cranking responsive to manifold conditions
38 E	...Automatic starter including pedal control
39	.Rotary field and armature
40 R	.Engine control
40 A	...Control in response to engine speed
40 B	...Control in response to generator line conditions
40 C	...Control in response to generator and prime mover conditions
40 D	...Control in response to a time standard
40 E	...Circuit resonant at given frequency
40 F	...Control in response to D. C. generator output
41	..Ignition
42	.Tide and wave motors
43	.Fluid-current motors
44	..Wind
45	TRACTION
46	STARTING AND GENERATING DYNAMO
47	ELECTRIC-STARTING MOTOR WITH GENERATOR
48	ELECTRIC-STARTING MOTOR
49	ROTARY FIELD AND ARMATURE
50	BATTERY
51	ENGINE CONTROL
52	TURBOGENERATORS
53	TIDE AND WAVE MOTORS
54	FLUID-CURRENT MOTORS
55	.Wind

CLASS 291 TRACK SANDERS

1	MISCELLANEOUS
2	WHEEL-SLIP CONTROL
3	FLUID DELIVERY
4	.Smoke and cinder
5	.Reversing
6	.Movable trap valve
7	.Gravity conversion
8	..Bypass
9	..Horizontal trap axis
10	..Vertical trap axis
11.1	.Including sand trap
11.2	..Multiple fluid inlets for delivery pipe
11.3	..Specified means to alter inlet fluid flow
12	.Blast-nozzle cleaners
13	.Air ports and screens
14	BRAKE-HANDLE CONTROL
15	BRAKE-SYSTEM CONTROL
16	HAND-VALVE CONTROL
17	ALARMS
18	JET IN HOPPER
19	HEATERS
20	.Electric
21	.Steam
22	POWER-ACTUATED
23	.Electric
24	.Fluid
25	SAND FEEDERS
26	.Reversing
27	.Chain
28	.Oscillatory
29	..Cup
30	..Hopper
31	..Spout cutoff
32	.Rotary
33	.Screw
34	.Longitudinal slide
35	.Pivoted slide
36	.Vertical plunger
37	..Helical guide
38	SAND HOPPERS
39	.Wheel guard
40	.Dome
41	SAND-DELIVERY PIPE
42	.Cleaners
43	..Fluid
44	.Flexible
45	.Telescopic
46	.Nozzles
47	..Pivoted
48	SAND SCREENS

1	MISCELLANEOUS
2	BOLTS
3	.Multiple
4	..Sliding and rotary
5	..Sliding and swinging
6	...Combined motion
7	....Lever-operating means
8	..Sliding and hooked end
9	..Sliding and roller
10	..Sliding and spring arm
11	..Swinging and hooked end
12	..Swinging and roller
13	..Swinging and spring arm
14	..Double acting
15	...Roller
16	...Sliding
17	...Spring arm
18	...Swinging
19	..Spring arm
20	...Combined motion
21	..Emergency operating means
22	..Gear
23	..Roller
24	..Hooked end
25	...Operating means
26	....Link and lever
27	....Cam
28	....Flexible
29	....Lever
30	....Push or pull rod
31	....Rigid
32	..Sliding
33	...Operating means
34	....Cam and lever
35	....Lever and push or pull rod
36	....Link and lever
37	....Cam
38	....Flexible
39	....Gear
40	....Lever
41	....Push or pull rod
42	....Rigid
43	....Screw
44	..Swinging
45	...Operating means
46	....Cam and lever
47	....Link and cam
48	....Link and lever
49	....Cam
50	....Flexible
51	....Gear
52	....Lever
53	....Push or pull rod
54	....Rigid
55	....Screw
56	.Swinging and hooked end, multiple head
57	.Sliding and rotary
58	..Combined motion
59	..Multiple head
60	..Spring projected
61	...Combined motion
62	..Spring retracted
246	.Loops
247	..Sliding and swinging, lever-operating means
248	..Sliding catch
249	..Spring-arm catch
250	..Swinging catch
70	.Double acting
71	..Sliding and swinging
74	..Sliding
75	...Roller
76	..Spring arm
77	...Roller
78	..Swinging
79	...Roller
73	..Roller
63	.Sliding and swinging
64	..Operating means
65	...Cam
66	...Lever
67	...Rigid
68	..Multiple head
69	..Spring retracted
80	.Spring arm
81	..Operating means
82	...Link and lever
83	...Cam
84	...Flexible
85	...Lever
86	...Push or pull rod
87	...Rigid
88	....Seal catch
89	....Swinging catch
90	...Screw
91	..Multiple head
92	.Emergency operating means
93	..Panel
94	..Platform
95	.Hooked end
109	..Sliding and swinging
110	...Operating means
111	....Cam
112	....Gear
113	....Lever
114	....Rigid
115	....Screw
116	..Multiple head
117	...Operating means
118	....Lever
119	....Push or pull rod
120	....Rigid
121	..Spring projected
122	...Operating means
123	....Link and lever
124	....Cam
125	....Flexible
126	....Lever
127	....Push or pull rod
128	....Rigid
129	..Spring retracted
130	..Gravity actuated
131	...Operating means
132	....Cam
133	....Flexible
134	....Lever
135	....Push or pull rod
136	....Rigid
96	..Operating means
97	...Link and lever
98	...Cam
99	...Closure
100	...Lever
101	...Rigid
102	....Closure catch
103	....Friction catch
104	....Padlock or seal catch
105	....Screw catch
106	....Sliding catch
107	....Spring-arm catch
108	....Swinging catch
137	.Sliding
156	..Multiple head
157	...Operating means
158	....Link and lever
159	....Cam
160	....Gear
161	....Lever
162	....Rigid
163	..Spring projected
164	...Operating means
165	....Cam and lever
166	....Lever and push or pull rod
167	....Link and lever
168	....Link and push or pull rod
170	....Sliding cam

	BOLTS
	.Sliding
	..Spring projected
	...Operating means
169	....Cam
169.11	.....Specifically related to vehicle closure
169.12	......Bolt disabled by contraretractive movement of inside handle
169.13	.....Auxiliary bolt
169.14	.....Bolt blocking or disabling means
169.15	......Involves rollback
169.16	.......Rollback members located on separate spindles
169.17	......Discrete pivotable or rotatable actuator
169.18	......Discrete push or pull actuator
169.19	.....Bolt has ancillary projection spring
169.21	.....Plural rollback elements directionally selectively effective
169.22	......On separate spindles
169.23	......On a tubular member
171	....Flexible
172	....Gear
173	....Lever
174	....Push or pull rod
175	....Rigid
176	....Screw
177	..Spring retracted
178	...Friction catch
179	...Sliding catch
180	...Spring-arm catch
181	...Swinging catch
182	...Cam-operating means
183	..Gravity actuated
184	...Operating means
185	....Cam and lever
186	....Link and lever
187	....Cam
188	....Lever
189	....Rigid
138	..Operating means
139	...Link and lever
140	...Cam
141	...Flexible
142	...Gear
143	...Lever
144	...Motor
145	...Rigid
146	....Closure catch
147	....Friction catch
148	....Padlock or seal catch
149	....Screw catch
150	....Sliding catch
151	.....Seal
152	....Spring-arm catch
153	....Swinging catch
154	.....Seal
155	...Screw
190	..Curved
191	..End lever
192	..Pivoted end
193	..Roller
240	.Swinging and camming
	..Spring projected
242	...Rigid operating means
241	...Rigid operating means
194	.Swinging
213	..Multiple head
214	...Operating means
215	....Cam
216	....Closure
217	....Lever
218	....Rigid
219	..Spring projected
220	...Operating means
221	....Lever and push or pull rod
222	....Link and cam
223	....Link and lever
224	....Cam
225	....Flexible
226	....Lever
227	....Push or pull rod
228	....Rigid
229	..Spring retracted
230	..Gravity actuated
231	...Operating means
232	....Cam and lever
233	....Link and lever
234	....Cam
235	....Flexible
236	....Lever
237	....Push or pull rod
238	....Rigid
239	...Roller
195	..Operating means
196	...Link and lever
197	...Cam
198	...Closure
199	...Gear
200	...Lever
201	...Motor
202	...Rigid
203	....Closure catch
204	....Friction catch
205	....Padlock or seal catch
206	....Screw catch
207	....Sliding catch
208	.....Seal
209	....Spring-arm catch
210	....Swinging catch
211	.....Seal
212	...Screw
243	.Seal-rupturing devices
244	.Reversible
245	..Cam and lever operating means
251	.Screw
251.5	MAGNETIC
252	BALL
253	BENDABLE SECURERS
	BOLT RELEASERS
254	.Free-end-engaging means
255	.Foot operated
256	CLAMPS
256.5	.Hatch fastener
256.6	.Ring
256.61	..Permanently deformed
256.63	..Resilient wedge
256.65	..With expanding or contracting means
256.67	...Screw
256.69	...Toggle lever
256.71	.Screw against closure
256.73	.Screw and nut
256.75	..Swingable
257	.Cam-operating means
258	.Portable
259 R	CROSS BARS
259 A	..Vehicle door latches
260	.Screw-operating means
261	CYLINDER
262	EXTENSION LINK
263	.Multiple
264	.Chain
265	.Notched bar
266	..Sliding catch
267	..Swinging catch
268	.Slotted bar
269	..Sliding catch
270	..Swinging catch
	.Slotted or notched keeper
273	..Sliding catch
274	..Swinging catch
271	.Notched keeper
272	.Slotted keeper

	EXTENSION LINK
275	.Friction catch
276	.Screw catch
277	.Sliding catch
278	.Swinging catch
	GEAR
279	.Sliding catch
280	.Swinging catch
281	HASPS
283	.Sliding catch
284	..Seal
285	.Swinging catch
286	..Seal
282	.Seal catch
287	.Seal-rupturing devices
288	PORTABLE
289	PORTABLE SECURER PLATE OR BAR
290	.Sliding and swinging holding member
291	.Screw-holding member
292	.Sliding holding member
293	..Screw-operating means
294	..Screw catch
295	..Sliding catch
296	..Swinging catch
297	.Swinging holding member
298	..Catch devices
299	RINGS
300	RIGID ENGAGING MEANS
301	.Screw catch
302	.Sliding catch
303	.Spring-arm catch
304	.Swinging catch
305	ROD CLAMPS
306	.Friction-plate catch
307 R	SEALS
307 A	..Tag type
307 B	..Encasing
308	.Compressible disk
309	..Reinforced
311	..Multiple
312	...Sheet metal
313	...Hard and soft metal
310	..Sheet metal
314	.Compressible rivets and eyelets
315	.Distorted shackle
316	.Driving
317	.Interengaging shackle ends, inclosing housing
	.Rigid shackle ends
319	..Resilient and rigid engaging means
318	..Resilient engaging means
	.Resilient shackle ends
320	..Rigid engaging means
321	..Resilient engaging means
322	.Single piece, spring catch
323	.Shiftable catch shackle operated
324	.Split-ring catch, shackle operated
325	.Strap-end fasteners
326	.Rigid disk, distorted shackle
327	SEAL BOLTS
	SHACKLES
329	.Sliding catch, seal
330	.Swinging catch, seal
328	.Seal catch
331	.Seal-rupturing devices
332	TRIPPERS
333	.Sliding detent
334	.Spring-arm detent
335	.Sliding bolt, swinging detent
336	.Swinging bolt, swinging detent
336.3	OPERATORS WITH KNOBS OR HANDLES
336.5	ROLLBACK AND SPINDLE CONNECTION
337	BOLT CASINGS
338	BRACES
339	.Portable
340	KEEPERS
341	.Segment
341.11	.With anti-friction means
341.12	.With silencing or anti-rattle means
341.13	..Take-up
341.14	.Covers
341.15	.With movable dog, catch or striker
341.16	..Motor controlled
341.17	..Pivoted or swinging
341.18	.Adjustable
341.19	..Vertically
342	WEDGES
343	.Portable
344	WEIGHTS
345	BLIND-SLAT HOLDERS
346	BOLT GUARDS
347	KNOBS
348	KNOB-ATTACHING DEVICES
349	.Friction
350	.Screw
351	..Guards
352	.Sliding
353	.Spring arm
354	.Swinging
355	.Wedge
356	KNOB BEARINGS
357	KNOB ROSE PLATES
358	LATCH SPINDLES
359	LATCH-SPINDLE CATCHES

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DIGESTS

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DIG 1	Automobile fender shield fasteners
DIG 2	Auxiliary knob slip covers, guards, etc.
DIG 3	Automobile multiple door latches
DIG 4	Automatic release latches
DIG 5	Automobile top latches
DIG 6	Automobile window wing fasteners
DIG 7	Disc cam; also swinging windows, locking and operating means
DIG 8	Buffer handles
DIG 9	Hinge plate fasteners secured to upper sash
DIG 10	Cupped disc fasteners
DIG 11	Cover fasteners
DIG 12	Closure operators
DIG 13	Cow proof latches
DIG 14	Hood latches
DIG 15	Door, checks, floor
DIG 16	Flexible bolts
DIG 17	Hinge edge latches
DIG 18	Gang locks
DIG 19	Combined door holder and buffer
DIG 20	Window fasteners
DIG 21	Individually latched double doors
DIG 22	Inertia operated
DIG 23	Vehicle door latches
DIG 24	Dogging mechanism from inside operating means
DIG 25	Remote control
DIG 26	Automatic undogging or reconnecting
DIG 27	Disconnectable handle
DIG 28	Suction cup fasteners
DIG 29	End gate fasteners
DIG 30	Latch and handle
DIG 31	Lever operator, flush
DIG 32	Freight car door fasteners
DIG 33	Metallic casement window fasteners
DIG 34	Non-refillable container cover fasteners
DIG 35	Storm sash fasteners
DIG 36	Overhead door latches
DIG 37	Push button operators
DIG 38	Plastic latch parts
DIG 39	Dovetail (door aligner)
DIG 40	Combined dovetail and keeper
DIG 41	Door latch separation prevention
DIG 42	Trunk latches
DIG 43	Rear deck lid latches
DIG 44	Extensible bolts
DIG 45	Slot closure
DIG 46	Sliding door fasteners

DIG 47	Sash fasteners
DIG 48	Traveling bag frame and camera cover fasteners
DIG 49	Toggle catches
DIG 50	Handbag or purse clasps
DIG 51	Bolt guides
DIG 52	Rollbacks
DIG 53	Mounting and attachment
DIG 54	Attachments and adjuncts
DIG 55	Bolt and keeper aligners
DIG 56	Silencers
DIG 57	Anti-friction provisions
DIG 58	Lubrication
DIG 59	Insulation (heat and electrical)
DIG 60	Adjustment provisions
DIG 61	Spring devices
DIG 62	Lost motion connections
DIG 63	Finger or hand grip
DIG 64	Assembly
DIG 65	Emergency or safety
DIG 66	Thermally controlled mechanism
DIG 67	Vehicle door latches free of sash or pane
DIG 68	Locker latches
DIG 69	Washing machine or stove closure latch
DIG 70	Weather strip and sash fastener combined
DIG 71	Refrigerator latches
DIG 72	Starters
DIG 73	Anti-rattlers
DIG 74	ADJUSTABLE BACKSET

CLASS 293 VEHICLE FENDERS

DECEMBER 1990

1	MISCELLANEOUS
2	WITH CAR CONTROL
3	.Cable grip
4	.Electric circuit
5	.Fluid brake
6	.Track brake
7	.Chock block
8	.Wheel shoe
9	MOTOR ACTUATED
10	.Electric
11	CAR AXLE-ACTUATED
12	DIRIGIBLE
13	.Automatic
14	CAR AND TRUCK EQUALIZER
15	BODY TRAPS
16	.Lateral closure
17	ROTARY
18	.Diverging rolls
19	.Horizontal wheel of vehicle width
20	.Endless belts
21	SIDE PROJECTOR
22	.Twin sections
23	.Single tilter
24	FORWARD PROJECTOR
25	.Spring-acutated
26	..Plunger type
27	LAZY TONGS
28	REAR-SLIDE STORAGE
29	.Folding upright
30	DOUBLE-ENDER INTERCONNECTED
31	DASH AND WHEEL
32	.Front-lift back drop
33	.Trip gate
34	DROP FENDER
35	.Trip gate
36	.Contact on fender
37	.Buffer trip
38	FRONT BARRIER
39	.Tilting receiver
40	.Net tension-operated
41	RELEASABLE UPRIGHT APRON
42	SCOOP TYPE
43	.Wheeled
44	.Hinged
45	..Folding
46	...Net roller
47	.Swing-link
48	PILOT TYPE
49	.Roller front
50	FOLDABLE SIDE WINGS
53	RAKE TOOTH
58	WHEEL TREAD
102	BUFFER OR BUMPER TYPE
103	.Having means maintaining bumper distance above road
104	.Vibration dampening type
105	.For use on two or three wheel cycle
106	.Having a storage compartment
107	.Having fluid means within impact means to absorb energy
108	..Bumper guard
109	..Foam filled impact means
110	..Compartmented impact means
111.1	.With vehicle jack
112	.With means to deflect projected road debris
113	.Having vehicle exhaust pipe receiving means or air scoop opening
114	.With outrigger means extendable laterally from bumper
115	.With grille or radiator guard
116	.Convertible
117	.Combined
118	.Shiftable between operative and inoperative positions other than by impact
119	.Horizontally movable to plural operative positions other than by impact
120	.Composite bumper
121	..Covered metal bar
122	..Hollow cylinder
123	.Vertically extending only
124	.Flexible cord or coil spring
125	.Having roller impact member
126	.Bumper extends along side of vehicle
127	..And completely encircles vehicle
128	..For side of vehicle only
129	.Vehicle suspension spring absorbs force exerted on bumper
130	.Single piece impact bar having plural loops in horizontal plane
131	.Bumper having lever and shock absorber mount
132	.Bumper having impact force absorbing means directly interposed between bumper and vehicle structure
133	..One-shot type
134	..Fluid shock absorber type
135	..Spring type
136	...Elastomeric
137	...Coil spring
138	.Bumper mounted on vehicle spring supporting frame member (i.e., spring horn)
139	..Sectional- or wing-type impact bar
140	..Vertically adjustable
141	.Bumper attached to vehicle mudguard
142	.Bumper guard
143	..Increases vertical area of bumper
144	...With horizontal member
145	...Spring or pivotally mounted
146	.Plural impact bars vertically spaced in impact plane
147	..Impact bars intersect in the impact plane
148	..Impact bars connected at center to support member
149	.Sectional- or wing-type impact bars
150	..End section pivotable upon impact
151	..Having means to interconnect sections
152	...Interconnect means lies in bumper impact plane
153	....Overlapping bar portions
154	.End connections
155	.Joints and connections
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	DIGESTS
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DIG 1	Pusher attachment for tractors
DIG 6	Magnetic fender securing devices

CLASS 294 HANDLING, HAND AND HOIST-LINE IMPLEMENTS

DECEMBER 1990

1.1 MISCELLANEOUS
1.2 CONTACT LENS APPLICATOR
1.3 SANITARY HANDLER FOR PET DROPPINGS
1.4 .Pole mounted
1.5 ..Catcher
2 MISCELLANEOUS COMPOUND IMPLEMENT
3 .Plier or tong type
3.5 MORTAR HAWK
3.6 ZIPPER PULLING TOOL
4 BARREL-ROLLER TYPE
5 EAR-CORN HOLDERS
5.5 ROD-TYPE SUPPORTS AND HANGERS
6 PLATE TURNERS
7 PANCAKE TURNER TYPE
8 .Special turning element
8.5 CLOTHES TONGS
8.6 CARPET STRETCHER
132 WIRE ENGAGING AND CLAMPING MEANS FOR USE WITH CABLE TYPE WIRE TENSIONING APPARATUS
133 .Wire engaging portion of means includes rotatable, generally circular disk or cylinder
134 .Including threaded tightener
135 .Including pivotally attached and hand engaged lever
136 ..Having curved, camming portrusion formed on lever
9 STOVE IMPLEMENTS
10 .Combined
11 .Fire tong
12 .Lid lifter
13 ..Pivoted jaw
14 .Poker
15 HAND BARS AND HAND BARROWS
16 .Opposing jaws
17 .Cant hook type
18 .Railway coupling tools
19.1 POLE MOUNTED IMPLEMENT
19.2 .Ball Retriever
19.3 .Grappling Gaff
22 .Store goods
23 ..Compound tool
23.5 .Laundry sticks
24 .Compound tool
25 HAND AND FINGER ATTACHMENTS
26 HAND-HOOK TYPE
26.5 DISCHARGING HAND RECEPTACLES, TRAYS OR CAGES
27.1 DETACHABLE PLATE AND RECEPTACLE LIFTER
28 .Pivoted graspers
29 ..Rim- and bottom-engaging
30 ..Axially extending handle
31.1 ..Rim gripping jaws
31.2 .Band type
32 .Bottom-engaging
33 .Resilient
34 .Sliding graspers
49 HAND FORKS AND SHOVELS
50 .Fork-tine shovel clearers
50.5 ..With grappling-type forks or shovels
50.6 .Grappling type
50.7 ..Annularly arranged
50.8 ..With movable cooperating load-engaging member
50.9 ...Fixed and movable members
51 .Convertible and combined
52 ..Fork and rake
53.5 .Pivoted and adjustable head
54.5 .Snow shovel
55 .Scoop
55.5 .Fork
56 .Edge guards
57 .Handles
58 ..Auxiliary
59 .Attachments
60 ..Foot pieces
61 SPEARS
62 BRICK CARRIERS
63.1 .Hoist-line frame
63.2 ..Expanding grapple, fluid pressure inflatable
64.1 VACUUM
64.2 .Venturi effect
64.3 .By positive fluid stream directed against article
65 .Frames
65.5 MAGNET
66.1 UNDERWATER IMPLEMENT
66.2 .With locating means
81.1 SPACING HOIST BAR OR FRAME
81.2 .Adjustable to accommodate different size loads
81.21 ..Telescopic
81.3 .With center of gravity adjustment
81.4 .With orienting means
81.41 ..Load engaging guide
81.5 .Load supporting units
81.51 ..Pivotal about horizontal axis
81.52 ..Rotatable about vertical axis
81.53 ...Twist lock
81.54 ..Horizontally slideable
81.55 ..Underlying load spanning support and sling
81.56 ..Hook
81.6 .Load gripping units
81.61 ..Pivoted gripping element
81.62 ..Slideable gripping element
68.1 HOISTABLE RECEPTACLE
68.2 .With discharge or loading means
68.21 ..Bottom or side discharge or loading
68.22 ...Bucket or bailer type
68.23 ....Twin bucket sectors (e.g., clamshell bucket)
68.24 ....Twin doors
68.25 ....Vertically sliding closure
68.26 ..Tilting discharge or loading
68.27 ...With trunnions
68.3 .Separable auxilliary hoisting means (e.g., sling, spreader frame)
67.1 HOISTLINE ATTACHED LOAD SUPPORTING FRAME
67.2 .L-frame
67.21 ..With center of gravity adjustment
67.22 ..With load retainer
67.3 .Load capturing supports
67.31 ..Pivotable about horizontal axis
67.32 ..Rotatable about vertical axis
67.33 ..Horizontally slideable
67.4 .Underlying load spanning support and sling
67.41 ..With load retainer
67.5 .Load leveling or shifting
74 HOIST-LINE SLINGS
75 .Latch release
76 ..Bottom
77 .Net
82.1 HOISTLINE OR GRAB HOOK
82.11 .Cable and hook tackle
82.12 ..With center of gravity adjustment
82.13 ..Opposed load grasping hooks
82.14 ..Choker type
82.15 .Driven positioning mean
82.16 .Resilient suspension means (e.g., spring or fluid)
82.17 .Locking device (i.e., hook throat closure)
82.18 ..Overlapping loop forming hooks
82.19 ..Locking arm swings in plane of hook
82.2 ...With pivoted latch
82.21 ...With sliding latch
82.22 ..Swivel locking arm
82.23 ..Slidable locking arm
82.24 .Load releasing means
82.25 ..Parachute release means
82.26 ..Store ejector (e.g., aircraft carried)
82.27 ..Boat detaching

	HOISTLINE OR GRAB HOOK
	.Load releasing means
82.28	..Plurality of balls
82.29	..Explosive release
82.3	..Motor operated
82.31	..Pivoted load support
82.32	...Plurality of similar coacting supports
82.33	...With pivoted latch
82.34	...With sliding latch
82.35	..Sliding load support
82.36	..Load ejecting
85	OVERHEAD BEAM HOOKS AND GRAPPLES
86.4	GRAPPLE
86.41	.Load shifting
86.42	.Interwoven contractable gripper (e.g., chinese fingers)
86.1	.Well type
86.11	..Basket-forming
86.12	..Combined insertable and surrounding grappling means
86.13	..With separate lateral positioning means
86.14	..With separate grapple-setting operator
86.15	...Fluid pressure operator
86.16	..With laterally movable grapple support
86.17	..With releasing means
86.18	...Excessive force-responsive
86.19	...Spring release means
86.2	...Grappling means latched in release position
86.21	....Lateral pocket and lug
86.22	...Screw-threaded
86.23	..With impact means
86.24	..Expanding grapple means
86.25	...Cammed grappling means
86.26	..Contracting grappling means (e.g., overshot)
86.27	...Inwardly biased grappling means with trip
86.28	...Outwardly biased grappling means
86.29	...Pivoted grappling means
86.3	...Cammed grappling means
86.31	....Inwardly biased grappling means
86.32	...Resilient grappling means
86.33	...Shoulder-engaging
86.34	..Including washover or cutover means
87.1	.Multiple grapples for multiple objects
87.11	..Confection stick handling (e.g., popsicle stick)
87.12	..Egg handler
87.2	..Groove- or shoulder-engaging type
87.22	...Pivoted jaws
87.24	....Link- or lever-operated
87.26	...Slidable jaws
87.28	...Rigid type
88	.Magnet- or piston-controlled
89	.Lewises
90	.Collar-engaging
91	..Rigid yoke
92	.Rigid gripper
93	.Expanding
94	..Cam-spread jaws
95	...Pivoted
96	...Slip wedge
97	..Pivoted
98	...Hayfork type
98.1	..Inflatable
99.1	.Resilient jaws
99.2	..Hand-held (e.g., tweezer, tongs)
100	..Separate sliding operator
101	.Pivoted cam and hook
102.1	.Socket and slip wedge
102.2	..Well pipe elevator
103.1	.Fixed and moveable jaw
103.2	..Coil gripper
104	..Pivoted jaw
105	...Hayfork type
106	.Pivoted jaws
107	..Hayfork type
108	...With auxiliary retainer
109	...Latched
110.1	..Automatic
110.2	...Cam and follower
111	..Separate cable operator
112	...Suspension
113	..Surrounding frame
114	...Opposing load-engaging cams
115	..Separate sliding operator
116	..Cam-operated
117	..Auxiliary operating handle
118	..Crossed levers
119	...Tandem tongs
119.1	.Slideable jaws
119.2	.Band type
119.3	.Inflatable
119.4	.Swing dampener
120	HAYFORK TYPE
121	.Corkscrew
122	.Single tilting fork
123	..With auxiliary retainer
124	..Latch release
125	.Combined harpoon and fork
126	.Harpoon
127	..Mechanically spread barbs
128	...Multiple
129	....Latch release
130	...Latch release
131	SHIELD DEVICES
137	ARTICLE CARRIER GRIPPED AND CARRIED BY HAND
138	.Including means to cover book or sheet
139	.Including support for optical instrument (e.g., camera holder)
140	.Carrier for person
141	.Convertible to, or useable as, different device or different type carrier
142	..Having means for supporting or mounting carrier
143	...Having plural receivers or supports for plural articles (e.g., rack)
144	...Tray
145	.Configured for complimentary projections on package or article
146	.Having plural diverse receivers or supports for diverse articles
147	..Including receiver or support for ski
148	.Including helical spring or elastic material for engaging or supporting article
149	.Having flaccid receiver, support or fastener for article
150	..Including means to tighten flaccid member about article
151	..Including rigid, semirigid or reinforced panel
152	..Having plural handles connected by flaccid receiver or support (e.g., sling)
153	..And rigid handle or bar
154	...Plural discrete flaccid supporting members suspended from handle or bar at spaced points
155	....And connected by cross-strap or brace (e.g., harness)
156	...Single web or strap (e.g., sling)
157	..Having parallel flaccid members forming article support
158	.Carrier component positioned in aperture in article
159	.Having plural discrete receivers or supports for spaced articles
160	..Separable supports
161	..Vertical array

ARTICLE CARRIER GRIPPED AND CARRIED BY HAND
.Having plural discrete receivers or supports for spaced articles
162 ..Having movably mounted or separable means to retain articles
163 ...Common to plural receivers or supports
164 .Article gripping or retaining means actuated by lifting carrier
165 .Including means to release article or to fasten carrier to or around article
166 ..Resiliently biased
167 .Support or receiver movably, removably, or adjustably mounted to handle or handle portion (e.g., collapsible)
168 ..Having slidable sections
169 ..Having pivoted sections
170 .Including handle having article or cord engaging means depending at each end
171 .Having cord or bail accommodating groove or passage along length of handle
172 .Tray

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CROSS-REFERENCE ART COLLECTIONS
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901 PLATE LIFTING CLAMP
902 GRIPPING ELEMENT
903 BATTERY CARRIER
904 VEHICLE CARRIER
905 WIRELESS REMOTE CONTROL DEVICE
906 ATOMIC FUEL HANDLER
907 SENSOR CONTROLLED DEVICE

CLASS 295 RAILWAY WHEELS AND AXLES

DECEMBER 1990

1	WHEELS
2	.With crank pin
3	.Epicyclic
4	.Rack rail
5	.Attached gear
6	.Counterbalance
7	.Sound deadeners
8	.Composite cast
8.5	.Convertible road and rail
9.1	.Moveable flange
9.2	..Moveable for road use
10	.Loose tires
11	.Tire cushions
12	..Pneumatic
13	..Wooden blocks
14	..Metallic springs
15	.Tire fasteners
16	..By welding
17	..By casting
18	..Integral lugs
19	..Transverse key
20	..Bolted lap flanges
21	.Webs
22	..Sheet metal
23	...With filler
24	...With integral tire
25	.Spokes
26	..Cast in
27	.Integral cast
28	..Hollow webs
29	.Wrought
30	.Composition
30.1	.Pneumatic tire wheel
31.1	.Wheel tread
32	..Multiple rollers
33	..Multiple
34	..Form
35	.Bushings
36.1	AXLE
37	.Sleeved and fixed wheels
38	.Twin middle bearing
39	.Coupling
40	..Bolted flange
41	.Mine car
42	..Axle brackets
42.1	.Outer axle or housing positioned about axle by roller or ball bearing
42.2	.Specified end cap fastening means
43	WHEEL-ATTACHING DEVICES
44	LOOSE WHEEL
45	.Exterior hub groove
46	..Imposed roller
47	.Axle groove
48	..Lock bolt
49	.Axle end stop
50	..Linchpin

CLASS 296 LAND VEHICLES, BODIES AND TOPS

1.1	BODIES
2	.Cutter
3	.Racks
4	..Barrel
5	..Tobacco
6	..Hay
7	...Extensible
8	...Metallic
9	...Irons
10	.Convertible box
11	..Hay and box
12	...Stock
13	....Pivoted top boards
14	....Pivoted side boards
15	.Grain tanks
16	.Hearses
17	..Combined carriages
18	..Coffin-retaining devices
19	.Ambulances
20	..Wheeled stretchers
21	.Advertising and displaying
22	.Lunch wagons
156	.Camper
157	..Having boat carrying means
158	..Having vehicle carrying means
159	..Having tent means demountable therefrom
160	..Having tent solely supported by camper body roof
161	..Having tent having ground engaging means
162	..Having porch means
163	..Having canopy means
164	..Supported by self-propelled vehicle unit
165	...Expansible or collapsible vehicle body
166	...Having docking passage means between body and vehicle unit
167	...Having means to tie down body to vehicle unit
168	..Supported on a trailer-type vehicle unit
169	...Body having hinged side or end sections to support a bed
170	...Body having slidable bed support
171	...Body having telescopic sections
172	...Body being expansible from one configuration usable for camping to another configuration usable for camping
173	...Body being collapsible to a configuration nonusable for camping condition
174	..Body having hinged bed support
175	..Body having telescopic sections
176	..Body being expansible from one configuration usable for camping to another configuration usable for camping
24.1	.Enclosed compartment
24.2	..For an animal
25	.Dropped bottom
26	.Extensible
27	.Collapsible
177	.Vehicles simulating standard types of vehicles (e.g., ambulance, farm tractor, etc.) but reduced to a size upon which a child may ride
178	.Passenger bus body
179	..For transporting passengers to or from an aircraft
180	.Wagon or horse drawn vehicle
180.1	.With distinct wind deflector
180.2	..Mounted on pulling vehicle (e.g., tractor)
180.3	...Adjustable angle
180.4	..Mounted on towed vehicle
180.5	..Adjustable angle
181	.Trailer body
182	..Body platform
183	.Truck body
184	..Dump truck type
185	.Automobile body
186	..Nonenclosed type
187	.Body structural means
188	..For reinforcing or resisting deformation from impact
189	..Deformable to absorb the shock of impact
190	..Operator's cab
191	..Panel means
192	..Cowl
193	..Body section
194	...Body front
195	...Body rear
196	...Separable section
197	...Modular section
198	...Wheel housing or fender
199	..Scuff plate
200	..Clear view window means
201	..Window support means
202	..Door support means
203	..Body frame
204	...Under frame
205	...Made of tubular members
206	..Wind break securing means
207	..Door bumper
208	..Ducts or conduits
209	..Sill
29	..Corners and joints
30	...Metallic reinforcements
32	.Top boards
33	..Baffle
34	..Spacing devices
35.1	.Body securing device
35.2	..Having occupant safety feature, e.g., means to absorb collision impact
35.3	..Removable body
35.4	..Baby carriage, e.g., perambulator
36	.Top and side board securing devices
37.1	.Auxiliary article compartments
37.2	..Wheel or tire type
37.3	..Tire covers
37.4	..On child's vehicle body(e.g., carriage, etc.)
37.5	..Having foldable parts
37.6	..On truck-like vehicle
37.7	..At or on roof or roof-like panel
37.8	..Accessible from within passenger compartment
37.9	...For cigarette butt or ash
37.11	....With disposing
37.12	...On dash
37.13	...On door or side panel
37.14	...In or beneath floor level
37.15	...On or under seat
37.16	...At rear of seat
38	.Drip pans
39.1	.Lining
39.2	..Open truck bed
39.3	..Heat or sound insulating
40	.Ties
41	.Wear strips
42	.Stay irons
43	.Stakes and sockets
50	.End gates
51	..Combined types
52	..Vertically removable
53	..Rearwardly removable
55	...Pivotally connected sections
56	..Upwardly swinging
57.1	..Downwardly swinging
58	...Shovel, board type
59	....Readily removable
60	.....Box-engaging frames or clips

BODIES
.End gates
..Downwardly swinging
61 ...Combined loading chute
62 ...Combined steps
63 .Seats with body modifications
64 ..Seating arrangements
65.1 ..Shifting seat
66 ...Seat-forming body parts
67 ...Attached side panels
68 ...Door or end-gate operated
68.1 ...With safety feature
69 ..Seats convertible to other devices
146 .Doors and windows with specified vehicle feature
147 ..Converts body from open to closed type
148 ...Side closure panels removable
149 ...Closure receiving pockets on door and adjacent body section
150 ....Displaceable pillar intermediate closures in closed postion
151 ..Closure conforms to fender or running board
152 ..Closure mounted body accessory, e.g., visor, shield
153 ...Armrest or arm engaged protector pad
154 ...Fluid drain or deflector
155 ..Sliding closures on opposite sides of body
70 .Dashboards
71 ..Rails and handles
72 ..Securing devices
73 ...Pivoted
74 ..Extensions
75 .Foot rests
76 .Trunk lids
77 .Lap-robe holders and locks
77.1 .Storm-front shield, apron, or robe
78.1 ..Velocipede type
79 ..Top-supported windowed panels
80 ...Combined aprons
81 ..Robes
82 ..Aprons
83 ..Curtains
84.1 ..Windshield
85 ...Rear seat
86 ...Connected horizontally pivoted panels
87 ....Edge to edge
88 ....Link hinged
89 ...Vertically movable panels
90 ...Single panel
91 ...Deflected protecting air-currents
92 ...Hinges
93 ...Weatherstrips
95.1 ...Auxiliary protector
96 ....Pivoted panels
96.11 ...Auxiliary windscreen (e.g., vent window)
96.12 ...Full vision (i.e., wraparound)
96.13 ....Moveably mounted to provide access
96.14 ...Multiple layered with airspace therebetween
96.15 ...Cleaner
96.16 ....Rotating windshield
96.17 ....With specific motor mounting for cleaner
96.18 ...Clear vision slot
96.19 ...Glare reducing
96.2 ...Pivoted about horizontal axis
96.21 ...With specific support structure
96.22 ....Releasable upon impact
97.1 .Glare screen or visor
97.2 ..With specific structure or properties for diffusing or reflecting light
97.3 ...Apertured
97.4 ..With actuating means for moving
97.5 ..Combined or convertible
97.6 ..Having detachable auxiliary visor or glare screen cooperating therewith
97.7 ..Mounted or detachably supported on dashboard, steering column or windshield
97.8 ..Having foldable, extensible or rollable body
97.9 ..With specific mounting means therefor
97.11 ...Allowing slidable movement relative to support
97.12 ...For mounting to pivotable arm
97.13 ....Arm having specific pivot structure
97.21 .Baby carriage or child's wagon
97.22 .Access cover for gas tank filler pipe
97.23 .Floor mat with vehicle body feature
TOPS
98 .Roll-up covers
99.1 .Extension
100 .Load covers
101 ..Refuse
102 .Standing
103 ..Detachable limousine type
104 ..Space parallel bows
105 ...Collapsible
106 ..End gate
107 .Let-down type
108 ..Pivotally connected sections
109 ..Collapsible spaced parallel bows
110 ..Plural up position
111 ..Single bow group
112 ...Raising and lowering devices
113 ....Spring
114 ..Two bow groups
115 ...Raising and lowering devices
116 ..Outrigger type
117 ...Raising and lowering devices
118 ..Bows and slats
119 ...Irons
120.1 ..Brace
121 ..Joints and couplings
122 ...Brace and bow pivots
123 ..Shifting rails
124 ..Down supports
125 ...Prop-block cushions
126 ....Spring
127 ...Bow spacers
128 ...Clamping
129 ....With bow spacers
130 ....Strap
131 ...Top attached
132 ...Body and top attached
133 ....Spring
134 ...Spring
135 .Valance
136 .Dust covers
210 .Roof structure
211 ..Having sound absorbing, insulating, or light reflecting quality
212 ..Vacuum or air pressure applied to roof means
213 ..Having water drainage or guide means
214 ..Having headliner or liner support
215 ..Having light transmitting means
216 ..Roof panel movable to uncover passenger area
217 ...Having associated air deflector or guide
218 ...Panel removable from roof
219 ...Panel comprises hinged sections, or rollable or foldable material
220 ...Panels movable to overlaping or nested relation
221 ...Panel pivots upwardly to vent mode and moves downward before sliding to fully open mode
222 ...Panel slides with final closing motion having vertical component to attain closed and sealed condition

TOPS
.Roof structure
..Roof panel movable to uncover passenger area
223 ...Panel having drive or actuating means
224 ...Panel latch means
138 .Curtains
139 ..Door opened
140 ..Overhead storage
141 ...Rolled or folded
142 ..Vertical roller
143 ..Horizontal roller
144 ..Backstays
145 ..Windowed

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CROSS-REFERENCE ART COLLECTIONS

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900 MATERIAL
901 .PLASTIC

1 SEATING DEVICE REORIENTS AS UNIT
2 .To expose nonoccupant support
3 .Inverting
4 PORTABLE BOTTOM WITH OCCUPANT ATTACHER
5 WITH OCCUPANT-PROPELLED WALKER OR SKATER FRAME
6 .Bottom movable to nonuse position
7 WITH REMOVABLE OR REORIENTABLE CRIB SIDE
8 .Fabric crib side
9 .Side added to front edge of bottom
10 .Side storable within or upon seating device
11 ..Within or upon armrest
12 ..Side withdrawn laterally of device
13 FOLDING BOTTOM PERMITS SEAT ROTATION ABOUT VERTICAL AXIS
14 BOTTOM AND BACK CONNECTED TO AND FOLDABLE IN WALL OR PARTITION
15 .In floor
16 COLLAPSIBLE CHAIR, I.E., RELATIVELY FOLDING BOTTOM, BACK AND LEGS
17 .Collapsed components form self-contained carrying case
18 .Nonpivoted crossed legs
19 .With means to hold chair in plural operative configurations
20 ..By adjustable leg-to-rocker connection
21 ..Set means operative between back post and rear leg
22 ...Back-to-leg prop
23 ....Single element forms back post and front leg
24 ..Set means interconnects front leg and rear leg
25 ...Brace or tie interconnection
26 ....Bottom forms or supported by tie
27 ..Set means include armrest
28 ...Rigid with armrest
29 .Journaled connections of parts permit occupant to change configuration
30 .With concurrently folding footrest
31 .Front leg folds relative to integral bottom-rear leg., e.g., beach type
32 .With folding rocker
33 ..Rocker disengages from leg to permit folding
34 .Rearwardly folding back
35 .With folding armrest
36 ..Laterally swinging
37 ...To overlie or underlie bottom
38 ..Slidably connected to chair component
39 ..Back, arm, bottom and front leg form collapsible parallelogram
40 ..Folds forwardly and downwardly
41 ..Pivoted to integral back and leg
42 .Laterally collapsible
43 ..Against fixed standard
44 ..Folding back or bottom sections
45 ..Fabric bottom and back
46 .Back and legs collapse concurrently
47 ..Parallel leg pairs
48 ..Back articulated to both leg pairs
49 ...Above and below bottom
50 ..Back-to-leg articulation above back-to-bottom articulation
51 .Back and legs collapse independently
52 ..Back pivoted to and abutting a leg
53 ..To overlie and underlie bottom
54 ...Noncrossed legs
55 .Relatively collapsible bottom, rear legs, and integral back and front legs
56 ..Crossed legs
57 ...Bottom detachably or slidably connected to back
58 ..Rear leg pivoted to back above bottom connection
59 .Relatively collapsible bottom, front legs, and integral back and rear legs
60 ..Upwardly tilting bottom elevates pivoted front legs
61 HEADREST INTERCONNECTED WITH BACK FOR RELATIVE CONCURRENT MOVEMENT
62 COMPONENT REORIENTABLE TO STACKED BUNKS
63 COMPONENT OF ADJACENT SEATS REORIENTABLE TO SINGLE BED
64 .Back pivots rearwardly between and coplanar with bottoms
65 ..Bottom moves horizontally responsive to reclining of back
66 ..Rear seat component supports reclined back
67 .Facing seats
68 LEGREST OR FOOTREST INTERCONNECTED TO MOVE RELATIVE TO BOTTOM AND CONCURRENT WITH BOTTOM OR BACK
69 .With means to permit independent adjustment of legrest or footrest
70 ..Footrest adjustable independently of leg-rest movement
71 .Common actuator controls vertical adjustment and relative movement of parts
72 .Back reversible as to bottom
73 ..Back movement disposes footrest for use from rear
74 ...Common rocker arm carries opposed footrest
75 .Relatively movable rest sections move simultaneously
76 ..Footrest extends angularly of depending legrest
77 .Face-to-face seats suspended to oscillate
78 .Interconnection inclused back-controlled movable armrest
79 ..Armrest linkage connected to legrest below legrest-to-bottom pivot
80 ..Armrest directly pivoted to upper extension of legrest
81 ...With concurrently movable bottom
82 ....Bottom pivoted to supporting frame at rear
83 .with means to move bottom relative to and concurrently with back
84 ..Rest advances forwardly of bottom
85 ...Advancing linkage includes lazy tong pivoted to rest
86 ..Common actuator articulates bottom and rest to back
87 ..Bottom actuator for rest
88 .Bottom and back movable as unit relative to legrest
89 ..Advancing legrest pivoted to lazy tong linkage
90 .Interconnector articulated to back extension below back-to-bottom pivot
91 ..By plural links
92 CHAIR WITH INTERCHANGEABLE AND REVERSIBLE BOTTOM AND BACK
93 .One-piece bottom and back
94 BACK REVERSIBLE AS TO BOTTOM, E.G., WALKOVER TYPE
95 .Back movement tilts bottom oppositely
96 ..Gear actuator
97 ..Back-actuated cam in bottom-carried slot
98 ...Cam carried by back support
99 ...Cam actuator slidably connected to back
100 .Bisector link rigidly connected to back
101 .Multiple links, pivotally connected to back
102 ..Crossed link back inverter
103 ..Parallelogram linkage

BACK REVERSIBLE AS TO BOTTOM, E.G., WALKOVER TYPE
104 .Link pivoted to back and armrest
105 DISPLACEABLE BOTTOM EXPOSES SUPPLEMENTAL BODY SUPPORT
106 .Lazy tong-mounted supported
107 .Laterally extensible
108 .Bottom inverts to form extension of subjacent support
109 ..Plural sections exposed by inverting bottom
110 ..Armrest or back inverts with bottom to support extension
111 .Supplemental body support positioned forwardly of bottom
112 BACK CARRIES STORED SUPPLEMENTAL BODY SUPPORT
113 .Armrest movable from recess in back
114 .Supplemental support pivoted to upper end of back
115 ARMREST MOVABLE TO DIVERSE USE POSITION
116 .Pivots laterally
117 ..Releasable from back-connected upright position
118 CONVERTIBLE
119 .Table
120 ..Additional table leaf extensible from converting component
121 ..Common table with plural bottoms
122 ..Sectional table formed of bottom and back
123 ..Bottom and back move as unit
124 ..Back-to-table top
125 ...Rear of back
126 ....Extends beyond bottom for concurrent use
127 ....Supported on armrest
128 .....Slidably connected to armrest
129 .To nonoccupant support device
130 .Alternately usable seat mounts
131 ..Rocker retractable to inoperative position
132 ...Ends of composite rockers contact inwardly
133 ..Detachable rocker
134 ..Seat detachable from subjacent table or stool
135 WITH TABLE, DESK OR EASEL
136 .Seat supported within periphery of apertured table
137 ..Seat rotatable about vertical axis
138 ..Seat movable along table-mounted horizontal track
139 .Table forms carrying case for seat
140 .Seat inoperatively positionable beneath table
141 ..Pivotally movable seat
142 ...Horizontally swinging
143 ..Slides on track or guide
144 .Extensible from within or beneath seat component
145 ..From armrest
146 ..From back
147 .Extensible from wall or receptacle
148 .Table supported on both arms
149 ..Horizontally adjustable
150 ...And movable to inoperative position
151 ...Pin and slot type
152 ..Means for attaching seat and table to adjacent support
153 ..Removable
154 ..Movable to inoperative position
155 ...To side of chair
156 .Straddle-type seat
157 .Table with opposing seats
158 ..Booth type
159 ..Folding
160 .Tablet-arm type
161 ..Adjustable to multiple use positions
162 ..Connected to move to inoperative position
163 .Table behind seat
164 ..Both independently vertically adjustable
165 ...Tiltable seat
166 ....Single pedestal
167 ..Tiltable seat
168 ...Vertically adjustable
169 ...With tiltable table
170 .Chair-secured standard supports table
171 ..Standard is vertical extension of chair leg
172 ..Standard spaced from chair by base element
173 .Table pivotally connected to seat
174 .Table in front of seat
175 MILKER STOOL TYPE
176 .With tail guard or holder
177 .Pail support movable as unit relative to seat
178 ..Pail support vertically movable
179 .Adjustable as to pail size
180 HEAT EXCHANGE, OR FLUID OR VAPOR TREATMENT
181 SIMULATION, E.G., ANIMAL OR VEHICLE
182 WITH DEBRIS CATCHER
183 WITH HANDLE
184 WITH SUN, RAIN OR INSECT PROTECTOR, E.G., CANOPY OR SCREEN
185 WITH MIRROR
186 WITH MUSICAL INSTRUMENT OR INSTRUMENT SUPPORT
187 PRIE-DIEU TYPE KNEELING STAND
188 WITH HOLDER OR RECEPTACLE FOR DISPARATE ARTICLE
189 .Holder or receptacle collapses as seat pivots
190 .For apparel
191 .On or in back
192 .Directly under seat
193 ..Accessible by displacement of seating surface
194 .On or in armrest
195 STRADDLE SEAT (SADDLE)
196 .Base-attached cantilevered spring mounts seat
197 .Filamented supporting surface
198 .Laminated leaf spring-mounted
199 .Pneumatic cushion
200 ..Plural independent compartments
201 .Sectional or split relatively movable supporting surface
202 .Depressed portion spaces body supporting surfaces
203 .Rear end supported on inclinded rod independently of support for front end
204 .With means to adjustably set tautness of supporting surface
205 ..Rod mounting bracket includes tautness setting means
206 ..Front spring adjustably clamped to rear spring
207 ..Threaded adjusting means extends longitudinally of seat
208 .Coil spring-mounted
209 ..Vertically oriented
210 ...Serially arranged tension and compression springs
211 ...Parallel stems each supported by encircling spring
212 ...Rear coil directly secured to front connected member
213 ..Axis extends laterally of seat
214 .With cushioned top
215 .Bow spring-mounted

216 CRASH SEAT
217 COMBINED
218 UPHOLSTERY COVER DETACHABLY CONNECTED TO FRAME
219 WITH CONNECTED PAD OR COVER, E.G., SLIPCOVER.
220 .Headrest
221 ..With cover supply
222 ...With cutter
223 .Reversible or with replaceable section
224 .With elastic section
225 .Wrap around one-piece bottom, back and shoulder or arm
226 .Hem-inserted keeper bar
227 .Armrest
228 ..And bottom or back cover formed of one piece
229 .One-piece bottom and back
230 ADDITIONAL BACK SUPPORTED FROM OTHER SEAT
231 .Substitute for primary back
232 PLURAL RELATED SEATS
233 .Combinable to form single seat
234 .Movement of one seat effects storage of either seat
235 ..Both move to effect storage of one
236 ..Moving seat stores within or beneath other bottom
237 ...Stored seat withdraws to substitute for other
238 ..Within back
239 .Nested
240 .Relatively rotatable
241 ..One seat has floor roller
242 ..Coaxially
243 .Tandem
244 .Oppositely facing
245 .Face to face
246 ..Oscillating on rollers
247 ..Oscillating on rockers
248 .Coupled side-by-side
249 ..Adjustable within or to arcuate row
250 .With detachable connection means
251 ..Armrest-supported
252 ..Fore or aft board straddling clamps
253 ..Secured by bottom-back crevice
254 ..Back-connected
255 ...Collapsible or foldable unit
256 ....Rigid panel-type bottom
257 .Relatively movable
258 ROCKER-MOUNTED
259 .Bottom connected to rocker for movement supplemental to rocking motion
260 .With means to impart rocking motion
261 .Track-mounted rockers, i.e., platform rocker
262 ..Meshed teeth engagement
263 ..Rotatable track
264 ..Spring return to neutral positon
265 ...Coil spring
266 ....Extensible
267 .....With opposing compressible coil spring
268 ...Transversely extending spring, e.g., torsion bar
269 ..With means to lock rockers to track
270 .With means to limit or immobilize rocking motion
271 .With footrest or legrest
272 .Rockers, or rocker attachments
273 OSCILLATING SUSPENDER CONNECTED TO OR THROUGH ADJUNCTIVE REST
274 .Baby jumper type
275 ..With belt or garment restrainer
276 .Suspender passes through armrest to bottom
277 .Suspender connected to back
278 ..Adjustable connection for movement relative to bottom
279 ..And legrest or footrest
280 ..And armrest or side frame
281 .Armrest-or side frame-connected
282 ..Bottom dependent from subjacently mounted armrest
283 CHANGEABLE OR REFERSIBLE SUPPORTING SURFACE
284 BOTTOM OR BACK WITH MEANS TO ALTER CONTOUR
285 BACK RESILIENTLY SUPPORTED IN OPERATIVE POSITION
286 .Resilient support includes armrest
287 ..Integral leg and armrest
288 ...Rear leg
289 ..Rearward back tilting axially compresses spring
290 ..Spring leaf or spring rod armrest
291 .Spring centers back on pivot
292 .Coil spring surrounds horizontal pivot
293 .Coil spring comprises horizontal pivot
294 .Resilient leg integral with bottom or back
295 ..Bottom and back
296 .Back secured to resilient upright bar or rod
297 ..Bar or rod rigidly secured to bottom
298 ..Bar or rod operatively adjustable with respect to bottom
299 .Spring mounts terminal of back
300 .Spring resists tilting of back
301 ..Simultaneously with bottom about fixed pivot
302 ...Back rigid with bottom
303 ....Pivot central of and below bottom surface
304 ..Adjustable resistance
305 ...Coaxial adjustment means extends through coil
306 ..Independently of bottom
307 .Constantly oriented during up-and-down movement
308 ..Back immovable relative to bottom
309 ..Bottom component resiilietly supports back
310 WITH MEANS TO CONTROL REARWARD CHAIR TIPPING
311 MOVABLE BOTTOM
312 .Independently movable resilient bottom sections
313 .Tiltable
314 ..Laterally
315 ...With laterally folding back
316 ..Interconnected with back for relative concurrent movement
317 ...Bottom slides forwardly while tilting
318 ....On roller
319 ...Back-actuated cam tilts bottom
320 ...Back supports rear of bottom
321 ....Front of bottom caried by link
322 ...Bottom tilts with concurrent horizontal movement
323 ...With armrest interconnected for mutual movement
324 ...Back moved by folding of bottom
325 ..Bottom and back tiltable as unit
326 ...About stationary horizontal pivot
327 ....To plural use positions
328 .....With set means horizontally spaced from pivot
329 ...With concurrent horizontal movement
330 ..Motor-actuated
331 ..Movable to inoperative position
332 ...Biased to position
333 ....Spring axis coaxial with pivot axis of bottom
334 ...On link

MOVABLE BOTTOM
.Tiltable
..Movable to inoperative position
335 ...About stationary horizontal pivot
336 ....Disengages holding abutment rearwardly of pivot
337 .Movable independently of back
338 ..Vertically
339 ...With force multiplying means
340 .Interconnected with back for relative concurrent movement
341 ..Back tilts and bottom moves forwardly
342 ...Rearwardly tilting of back
343 ....Back slidably connected to back support
344 .Bottom and back movable as unit
345 ..Vertically
346 ...With horizontal adjustment
347 ...With force multiplying means
348 ....Gear
349 ..About vertical axis
350 LATERALLY FOLDING OR COLLAPSING BACK
351 .One-piece bottom and back
352 PORTABLE BACK WITH BOTTOM ATTACHER
353 MOVABLE BACK
354 .Tiltable
355 ..Plural distinct occupant supporting positions
356 ...Full stroke adjusting mechanism
357 ...Vertical displacement of back disengages holder
358 ...Common actuator adjusts height and inclination
359 ...Back-pivoted armrest carries latch or holder
360 ....Bottom-pivoted armrest
361 ...Mechanical operator moves back fore and aft
362 ....Gear train
363 ...Axially slidable bolt or pawl
364 ....Spring-pressed
365 .....Engages movable rack
366 ...Rack and pawl
367 ....Actuator disengages pawl
368 .....Actuator rigid with pawl
369 ......Spring-pressed
370 ....Actuator disengages rack
371 .....Actuator rigid with rack
372 ....Depending pawl or rack prop pivoted to back
373 ...Serrated clamp hinge
374 ...Friction detent
375 ....Clamp acts on axially moving rod
376 ....Pin and slot
377 ...Held by prop behind back
378 ..Foldable forwardly over bottom
379 ...Held erect by releasable latch
380 ...Tension tie supports back
381 ....Armrest tie
382 ...Fabric hinges bottom to back
383 .Horizontally
464 BODY OR OCCUPANT RESTRAINT OR CONFINEMENT
465 .Jacket, vest, or suit restraint
466 .Leg or arm restraint
467 .Having crotch strap or post
468 .Safety belt or harness, e.g., lap belt or shoulder harness
469 ..Passive restraint system
470 ..With means to absorb energy of acceleration
471 ...Deformable or stretchable element
472 ....Element is permanently deformed, i.e., one time use
473 ..Belt or harness rides on seat connected slide
474 ..Retractable
475 ...Belt winds upon take-up reel
476 ....Having means to lock belt against further extension when in its occupant restraining position
477 .....Electrically operated
478 .....Inertia actuated
479 ...Having means to lock belt against further extension when in its occupant restraining position
480 ..Inertia responsive locking or tightening of belt or harness
481 ..Having means for storage in nonuse position or in position to be handy for use
482 ..Belt or belt anchor covers
483 ..Shoulder belt or harness
484 ...Engageable with both shoulders of occupant
485 ..Having means providing easily releasable attachment to a chair or seat
486 .Shoulder restraint
487 .Front guard or barrier
488 ..Padded or cushioned member
391 HEADREST
392 .Chin support
393 .Occupant-attached
394 .Detachable headrest and armrest unit
395 .Wall- or ceiling-supported
396 .Extension of upper back
397 .Portable, with seat attacher
398 ..Laterally collapsible
399 ..U-clamp mounted
400 ...Adjustable
401 ....Spring clamp
402 ....Screw clamp
403 .Movable to inoperative position rearwardly of back
404 .Resiliently mounted
405 .Ball- and socket-mounted
406 .Adjustable laterally
407 ..On shiftable mounting
408 .Angularly movable about horizontal axis
409 ..With horizontal translator
410 .Adjustable retilinearly vertically
411 ARMREST
412 .Post- or panel-mounted
413 ..Sill-suspended
414 .Portable, with seat attacher
415 ..Cantilevered from clamp
416 .Detachably connected by manipulated joint, i.e., knockdown
417 .Movable to inoperative position
418 .Single element forms plural spaced armrests
419 .Integral with front leg
420 .Connected to back and front leg
421 .Connected to back and bottom
422 .End frame-supported
423 REST FOR KNEE, LEG OR FOOT
424 .For nonoccupant use, e.g., shoe salesmen's stool here
425 ..Rest at rear of seating device
426 ...Kneeling stool
427 .Laterally bearing or applied
428 .With substitute footrest
429 .Connected to seat for relative movement
430 ..Slides horizontally beneath bottom to nonuse position
431 ...With adjustments for selective use position
432 ...With floor-engaging support
433 ..Pivoted for vertical swinging
434 ...With actuator
435 ...And slides forwardly relative to bottom
436 ...On supporting link
437 ..Rectilinearly vertically
438 .Portable

	REST FOR KNEE, LEG OR FOOT
	.Portable
439	..Self-supported
440	INTERFITTING COMPONENTS DETACHABLY CONNECTED BY MANIPULATED JOINT, I.E., KNOCKDOWN
441	.Interfitted fabric component
442	.Slotted components normal to each other
443	.Interfitted back or back frame and bottom or bottom frame
444	.Interfitted back and back frame
445	BOTTOM, BACK AND LEG, I.E., CHAIR
446	.Back or back standard integral with leg
447	..Front leg
448	..Single element forms spaced back standards
449	.Interbraced back, bottom and leg
450	.Back connected to end support
451	.Back standard secured below or to underside of bottom
452	BOTTOM OR BACK
453	.Ventilating means space surface from subjacent support
454	.Directly connected bottom and back
455	..Cushioned bottom and back
456	...Cushioning means interconnected
457	..Inegral sheet material
458	.Contoured bottom
459	..Laterally contoured
460	.Contoured back
461	PADDED STOOL
462	.Hassock type
463	MISCELLANEOUS
	******************************
	DIGESTS
	******************************
DIG 1	Foam
DIG 2	Molded
DIG 3	Pneumatic
DIG 4	Wheelchair
DIG 5	Fireproof
DIG 6	Velcro
DIG 7	Rocker/recliner
DIG 8	Inflatable bellows
DIG 9	Cycle backrest
DIG 10	Occupant-arising assist

CLASS 298 LAND VEHICLES, DUMPING

DECEMBER 1990

1 R	MISCELLANEOUS
1 A	..Auxiliary dump body mounted in nondumping body
1 B	..Dump body includes flexible or movable bottom part to facilitate dumping
1 H	..Means for heating dumping body
1 SG	..Wheel splash guards movable responsive to body tilting
1 V	..Vibrator means to facilitate removal of material
1 C	..Motor driven carts having forwardly dumping body
1 T	..Toy dump trucks
2	HAND TRUCKS AND BARROWS
3	.Single wheel
4	SLEDS
5	TWO-WHEEL
6	.With cover or end gate control
7	WITH LOAD-DELIVERING CHUTE
8 R	PLURAL LOAD UNITS
8 H	..Hopper type body
8 T	..Multiple dumping vehicles connected in tandem
9	ROTATING ABOUT VERTICAL AXIS AND TILTING
10	ROTATING TO OVERTURN ABOUT FIXED AXIS
11	ELEVATING AND TILTING
12	SLIDING AND TILTING
13	.Side delivery only
14	.Operating mechanism
15	..Vehicle-motion controlled
16	..Vehicle-motor controlled
17 R	TILTING
17 B	..Brace or prop to support tilted load body
17 S	..Vehicle includes means to stabilize or level body while dumping
17 SG	..Ground engaging
17 T	..Tractor dumping attachments
17.5	.Tilting about plural or shifting fulcrums
17.6	..Selectively tiltable in different directions
17.7	...Side or end delivery
17.8	...Progressive fulcrum points
18	.Side delivery only
19 R	.Operating mechanism
19 B	...Booster device for initial tilting movement
19 V	...Tilting mechanism includes flexible operator means, (e.g., cable)
20 R	..Vehicle-motion controlled
20 A	....Motion effecting means mounted on fifth wheel
22 R	..Fluid-pressure operators
22 AE	....Fluid pressure actuator associated with fifth wheel mechanism
22 C	....Control means for hydraulic tilting mechanism
22 F	....Tilting mechanism includes flexible operator means (e.g., cable)
22 J	....Jack-knife linkage actuated by hydraulic means
22 P	....Plural, simultaneously operated fluid cylinder means
22 A	....Rotary piston type
22 B	....Cam means in cooperation with fluid pressure means
22 D	....Pivotally connected (non-jack-knife type) linkage actuated to effect tilting
21 R	..Vehicle-motor controlled
21 V	....Tilting mechanism includes flexible operator means (e.g., cable)
23 R	.With cover or endgate control
23 MD	...Motor operated endgate opening means
23 M	...Motor operated endgate latch means
23 S	...Combined latch and endgate opening means
23 A	...Automatic (non-motor) endgate latch mechanism
23 B	....Including cam actuator means
23 F	....Including flexible operating member
23 D	...Automatic, positive, non-motor endgate opening means
23 DF	....Including flexible operating member
23 C	...Dump body covers, control means therefor
23 TT	...Miscellaneous tilting trucks
24	HOPPER TYPE
25	.Pivoted sections
26	.Tilting bottom
27	.Bottom opening
28	..Removable bottom boards
29	..Hinged doors
30	...Transversely hinged only
31	...Longitudinally hinged only
32	....Parallel swinging
33	....Oppositely swinging
34	.....Inwardly only
35 R	.....Outwardly only
35 M	.......Motor operated doors
36	......Vertically movable
37	......Closing equalizers
38	CATCHES

CLASS 299 MINING OR IN SITU DISINTEGRATION OF HARD MATERIAL

DECEMBER 1990

1 AUTOMATIC CONTROL; SIGNALING OR INDICATING
2 TUNNEL RECOVERY OF FLUID MATERIAL
3 IN SITU CONVERSION OF SOLID TO FLUID
4 .Input and output wells
5 .Dissolving or chemical reaction
6 .Melted material recovered
7 WITH SEPARATION OF MATERIALS
8 .Separation below surface of earth or water
9 .Material mined or excavated underwater
10 PROCESSES
11 .Stabilizing underground structure
12 .Mine safety
13 .Explosive
14 .Directly applying heat or vibration
15 .Forming blocks (e.g., quarrying)
16 .Breaking down by direct contact with fluid
17 ..Jetting (e.g., hydraulic mining)
18 .With material-handling
19 MINE LAYOUTS
20 EXPANSIBLE BREAKING-DOWN DEVICES
21 .Fluid-pressed element
22 ..Piston
23 .Wedge
24 ICE-WORKING DEVICES
25 .Relatively moving cutter
26 ..Reciprocating
27 ..Block-cutting type
28 ...Plural blades
29 HARD MATERIAL DISINTEGRATING MACHINES
30 .Remote control
31 .Stepper-type advance-causing means
32 ..Planer-type cutter
33 .With mine roof-supporting means
34 .Planer-type cutter
35 .Wire saw-type cutter
36 .Floor-working
37 ..Reciprocating cutter
38 ...Narrow channel-forming type
39 ..Rotary cutter
40 ...Freely rolling cutter
41 ...Vertical cutter axis
42 .Sidewall-working
43 ..With material-handling means
44 ...Undercutting, dislodging and conveying
45 ...Material handler enters cut with cutter
46 ...Rotary impeller
47 ..Driven flexible member causes advance
48 ...Cutter shiftable horizontally
49 ...Driver for member rotates about horizontal axis
50 ....Axis transverse to direction of advance
51 ..Horizontal cutter tooth orbit
52 ...Cutter shiftable horizontally
53 ..Vertical cutter tooth orbit
54 ...Cutter bodily shiftable horizontally
55 .Rotary cutter head with advance direction coincident to rotary axis
56 ..With material-handling means
57 ...Cooperates with laterally spaced heads
58 ..Machine follows cutter into opening formed thereby
59 ...Relatively driven cutters
60 ....Cutting area of one encircled by another
61 ...Radially adjustable cutting area
62 ...With percussive-type cutter
63 .Endless loop chunk serving cutter
64 .With material-handling means
65 ..Undercutting, dislodging and conveying
66 ...Undercutter shiftable horizontally
67 ..Material handler enters cut with cutter
68 ..Rotary impeller
69 .Percussive-type cutter
70 ..Cutter shiftable horizontally
71 .Relatively shiftable cutters
72 .Shiftable to operate in vertical or horizontal cutter tooth orbit
73 .Cutter shiftable horizontally
74 ..Horizontal cutter tooth orbit
75 ..Shiftable vertically
76 .Cutter shiftable vertically
77 .Horizontal cutter tooth orbit
78 .Vertical cutter tooth orbit
79 CUTTER HEADS OR TEETH
80 .Adjustable cutting area
81 .Cleansing fluid passage
82 .Chain-type head
83 ..Plural teeth on single link
84 ..Nontracking arrangement
85 .Parts relatively moving during operation
86 ..Rolling tooth
87 .Helical cutting or conveying portion
88 .Plural teeth
89 ..Rotary head
90 ...Cutting direction common to rotary axis
91 .Tooth-mounting
92 ..Resiliently biased retaining means
93 ..Clamped tooth
94 .Percussive
95 MISCELLANEOUS

CLASS 300 BRUSH, BROOM AND MOP MAKING

1	MISCELLANEOUS
2	BRUSH-MAKING MACHINES
3	.Drilling and tuft setting
4	.Tuft feeding and setting
5	.Tuft gathering and setting
6	..Drawn work
7	.Tuft gathering
8	.Tuft setting
9	.Filling
10	.Work holders
11	..Positioning devices
12	BROOM-MAKING MACHINES
13	.Nailing and stapling
14	.Winding
15	.Wire banding
16	MOP-MAKING MACHINES
17	BRUSH AND BROOM TRIMMING
18	DRESSING AND ASSORTING
19	IMPLEMENTS
20	HANDLE SETTING
21	PROCESSES

CLASS 301 LAND VEHICLE, WHEELS AND AXLES

DECEMBER 1990

1	COMBINED WHEEL AND AXLE MODIFICATION
2	.Cushion lateral thrust
2.5	.With pedal crank
5 R	WHEELS
5 B	..Balancing devices
5 BA	...Automatically operating
5 P	..With peripheral rollers
5 VH	..Housing tire-inflation valve
5.3	.Skate
5.7	..With antifriction bearings
6 R	.With drive or brake attachments
6 A	...Wheel or brake structure for aircraft
6 CS	...Brake-cooling means
6 CF	....Comprising a fluid
6 D	...Drive means on wheel
6 S	...Wheel supported on brake drum clear of hub
6 W	...Brake drum supported on wheel clear of hub
6 E	...Wheel and disc-type brake drum
6 V	...Drive or brake means cycle-type wheels
6 WB	...Misc. special features (i.e., vibration dampers, heat-insulation means, etc.
7	.Wheelbarrow type
8	.Auxiliary bracing
9 R	.Detachable wheel section
9 G	...Geared mounting mechanism
9 AH	...Artillery wheel with single-acting retaining means
9 AN	...Artillery wheel bolted to hub
9 DH	...Disc wheel with single-acting retaining means
9 CN	...Disc wheel retained by central nut
9 DN	...Disc wheel bolted to hub
9 DP	...Spoke formations bolted to hub
9 S	...Wire-spoke wheel with single-acting mounting means
9 SB	...Wire-spoke wheel bolted to hub
9 SC	...Wire-spoke wheel central-mounting nut
9 TV	...Means for shifting rim laterally of hub
9 AC	...Artillery wheel retained by certain nut
10 R	..Demountable rims
10 DC	....Driving connection
11 R	...Securing means
11 CD	.....Circumferentially divided rim
11 S	.....Spacer means between wheel periphery and rim
11 KL	.....Rock means between wheel and rim
12 R	....Spoke-attached
12 M	......Spoke moves radially to engage rim
13 R	....Plural rims
13 SM	......Dual rims mounted
14	....Rim-removing
15	....Contracting rim
16	....Expansible wheel
17	....Bayonet joint
18	....Radially wedged
19	.....Transversely extending wedges
20	......Independently movable
21	.......Radial bolts
22	.......Ring
23	....Removable side ring
24	....Removable side lugs
25	....Latches
26	.....Movable locking ring
27	......Expansible ring
28	.....Radially extending bolts
29	.....Pivoted
30	...Transversely divided
31	....Plural sections
32	.....Hinged
33	....With end-manipulating structure
34	.....Tool connections
35 R	...Circumferentially divided
35 SS	.....One circular split ring also transversely split
35 BJ	.....Rim section held together by bayonet joint
35 SL	.....Rim section held together by split locking ring
36 R	.Dual
36 A	...Relative rotatable
36 WP	...With wear-preventing means therebetween
37 R	.Protectors or trim members
37 ST	...Removable tire sidewall trim
37 TC	...Tire sidewall trim retained on wheel cover
37 AT	...Antitheft devices for wheel covers
37 P	...Cover constructed primarily of plastic
37 CM	...Central ornament or medallion attached to cover
37 SS	...Wire wheel simulating wheel cover
37 N	...Relatively rotatable element on cover
37 T	...Trim rings covering only tire rim or portion thereof
37 C	...Resilient clips secured to wheel or rim removably secures cover
37 CD	....Clips are detachable from wheel
37 TP	...Cover has means cooperating with retaining bumps or protrusions on wheel or rim
37 PB	....Bumps or protrusions are on tire mounting rim
37 S	...Cover-retaining means comprises threaded means
37 SC	....Central screw attached
37 B	...Biting teeth integrally formed from cover material directly engage wheel or rim
37 SA	...Wheel cover has retaining means for securing wheel spoke
37 H	...With access opening
37 L	...Design patents
38 R	.Emergency
38 S	...Auxiliary wheel movable radially into position
39 R	..Tires
39 T	....Safety
39 C	....Rim clamps for securing emergency trim to rim
39 CC	....Covers cleated to wheel to provide smooth road surface
40 R	...Detachable traction increasing
40 S	.....Auxiliary tire mounted to one side of main wheel
41 R	.Traction increasing
41 W	...Weights added to traction wheel
42	..Chains
43	..Projecting spurs or cleats
44 R	...Detachable
44 T	.....Separate traction attached to wheel portion
44 A	.....Resilient material plug
44 B	.....Lugs bolted to rim
45	...Movable
46	....Adjustable
48	.....Alternately projecting and retracting
49	......Supplemental wheel attachments
47	......Supplemental wheel attachments
50	.....Individually
51	....Spring-projected
52	..Parallel rim, connecting cleats
53	..Recessed rims
54	.Combined tension and compression
55	.Tension
56	..Tangentially arranged spokes
57	..Hairpin type
58	..Felly and spoke connections
59	..Hub and spoke connections

	WHEELS
	.Tension
	..Hub and spoke connections
60	...Simultaneous spoke tensioning
61	...Separable spoke sockets
62	.Compression
63 R	..Disc
63 DD	....Wheel formed from two discs permanently secured together
63 DT	....Two wheel-forming discs secured together by tabs struck from wheel
63 DS	....Wheel discs removably secured together
63 D	....Disc wheel having removable rim section
63 C	....Wheel of fabric, wood, paper or the like
63 PW	....Wheel of plastic or rubber largely
64 R	...With spoke formation
64 SH	.....Two-wheel disc permanently secured together
64 SD	.....Single disc forms wheel
65	..Cast metal
66	..Integrally connected spokes
67	..Felly and spoke connections
68	...Adjustable
69	....Screw
70	...Separate spoke socket
71	....Combined felly joint
72	...Combined felly joint
73	..Plural spoke series
74	...Hub and spoke connections
75	....Spoke tighteners
76	....Driven spokes
77	.....Reenforcing bands or casings
78	....Spoke-claiming hubs
79	..Single spoke series
80	...Hub and spoke connections
81	....Spoke tighteners
82	....Driven spokes
83	.....Reenforcing bands or casings
84	....Spoke-clamping hubs
85	.....Ring-forming spoke ends
86	.Nonresilient tires
87	..Fastening devices
88	...Combined felly joint
89	...Interposed clips or wedges
90	..Rail-climbing devices
91	..Adjustable
92	...Screw
93	....Right- and left-threaded
94	...Wedge
95	.Fellies or rims
96	..Metallic
97	...Resilient tire
98	..Resilient tire
99	..Joints
100	...Adjustable
101	....Screw
102	.....Right- and left-threaded
103	....Wedge
104	.Spokes
105 R	.Hubs
105 B	...Bicycle
105 S	...Circumferentially divided
106	..Reenforcing bands and casings
107	...Point bands
108 R	..Caps
108 A	....Plastic or rubberlike material
108 S	....Retained by threaded fastener means
108 SC	....Retained by central screw-threaded means
108 TW	....Having transparent window
109	..Axle boxes
110	...Mounting
111	.Wheel-attaching devices
112	..Outer-end stop
113	...Linchpin
114	...Screw-attached
115	....Adjustable plural-part nut
116	....Hub wrench
117	....Tap bolts
118	...Bayonet joints attached
119	...Pivoted detent
120	...Sliding detent
121	..Movable-latch detent
122	..Stop-engaging collars or sleeves
123	.Sand bands
124 R	AXLES
124 H	..Including drive mechanism housing
125	.With combined vehicle structure
126	.Rotary shaft or spindle
127	.Cranked or bowed
128	.Varying-length adjustment
129	.Trussed
130	.Emergency repairing
131	.Spindles
132	..Mounting
133	...Spring
134	.Skein
135	..Mounting
136	...Spring

CLASS 303 FLUID-PRESSURE BRAKE AND ANALOGOUS SYSTEMS

DECEMBER 1990

1	MISCELLANEOUS
2	MULTIPLE SYSTEMS
3	.Fluid pressure and electric
4	.Fluid pressure and vacuum
5	MULTIPLE FLUID-RECEIVING DEVICES
6.01	.Multiple motors
6.1	..Brake and door
7	..Sectional Train
8	...Multiple brake valves
9	..Supplementary in emergency
9.61	..Separate and simultaneous control
9.62	..Apportioning control
9.63	...Failure responsive
9.64	...Motorcycle
9.65	...Manual
9.66	...For pneumatic system
9.67	...Inertia
9.68	....Inertia weight
9.69	...Load
9.71	...Having significant pressure control by front brake
9.72	...Having multiple pistons affecting fluid flow
9.73	...Having significant output feature
9.74	....Multiple outputs
9.75	...Detail
9.76	..Spring operated motor
10	WITH PUMP
11	.Pressure control
12	.Vacuum
13	MULTIPLE CONTROL
14	.Double heading
15	.Fluid and electric
16	..Automatic electric
17	...Electric impulse
18	EXTERIOR CONTROL
19	.Deadman type
91	SPEED-CONTROLLED
92	.With failure responsive means
93	.Speed responsive braking system with interrelated antiskid braking system
94	.Responsive to a comparison of a speed condition to a fixed standard or reference
95	..Including electrical control
96	...With plural similar inputs
97	...Controlled by acceleration
98	..With plural similar inputs
99	..Controlled by acceleration
100	.Responsive to a speed condition and another condition
101	..With brake control handle
102	..Responsive to plural speed conditions
103	...Including electrical control
104	....By rate of change by braking force or jerk
105	....Sensing both acceleration and deceleration
106	.....With further speed condition
107	....By integrating vehicle and wheel acceleration differences
108	....By sensed difference between vehicle and wheel deceleration
109	....By difference between pseudo-vehicle speed and actual vehicle speed
110	....One condition releases, another type condition reapplies
111	....With cross coupling feature or central control module
112	.Torque sensing
113	.With valve structure responsive to a speed-responsive actuating signal
114	..With power-assist booster means
115	..With fluid-pressure modulator
116	..With pump
117	..Spool valve
118	..Relay or motorman type
119	..Solenoid-operated cutoff and release valve
20	ELECTRIC CONTROL
22.1	LOAD CONTROL
22.2	.Empty and load type
22.3	..Alterable for different classes of service
22.4	.Failure responsive
22.5	.Responsive to fluid pressure spring
22.6	.Railway vehicle
22.7	..Detail
22.8	.Detail
24.1	INERTIA CONTROL
25	AUTOMATIC AND DIRECT
26	.Supplementary control pipe
27	.Direct on control-pipe reduction
28	AUTOMATIC
29	.Supplementary control pipe
30	.Supplementary reservoir pipe
31	.Vacuum
32	.Equilibrium
33	.Equalizing valves
34	..Rotary type
35	.Synchronizing
36	..Release
37	..Quick action
38	...Service
39	...Control pipe to chamber
40	.Application valve
41	.Preliminary valve movement
42	..Emergency preventers
43	.Slow-reduction emergency
44	.Secondary service operation
45	.Positive-movement equalizing valve
46	.Augmented feed to motor
47	.Train rear end first
48	DIRECT
49	.Liquid link
50	MOTORMAN'S VALVES
51	.Conductor type
52	.Multiple motors
53	..Engine and train
54	.Equalizing
55	..Preliminary discharge
56	.Details
	CHARGING
57	.Plurality of pressures
58	.Reuse
59	.Outlet-pressure control
60	..Maintaining
61	.Intermittent
	.Motor
62	..Motor-movement control
63	..Failure-system pressure
64	.Auxiliary reservoir
65	..Motor remaining charged
66	.Control pipe
67	..Preventers
	RELEASING
68	.Motor
69	..Quick
70	..Venting auxiliary reservoir
71	..Fluid-pressure retracting
72	..Delayed
73	...Blow down
74	...Graduated
75	..Preventers
76	...Motorman valve control
77	...Control-pipe pressure
78	...Auxiliary-reservoir control
79	...Loaded valve
80	.Auxiliary reservoir
81	.Control pipe
82	..By action of control-pipe pressure
83	..To chamber
84.1	FLOW RETARDER
84.2	.Isolation valve
85	SUPPLEMENTARY RESERVOIR

86	MISCELLANEOUS OPERATIONS ON CONTROL PIPE
87	PULSATION NEUTRALIZERS
89	LOCKS
90	PIPELESS VALVES
	******************************
	DIGESTS
	******************************
DIG 1	Pressure comparison
DIG 2	Brake control by pressure comparison
DIG 3	.Electrical pressure sensor
DIG 4	..Pressure signal used in electrical speed controlled braking circuit

CLASS 305 WHEEL SUBSTITUTES FOR LAND VEHICLES

1 STEPPER TYPE
2 .Cam positioned
3 .Having plural link connector elements
4 .Feet attached to rim
5 ..Spring biased
6 RIGID PORTABLE TRACK
7 .Circular
8 WITH RAIL ENGAGING MEANS
9 WITH BRAKE
10 WITH HYDRAULIC ADJUSTING MEANS
11 WITH MEANS TO EXCLUDE OR REMOVE FOREIGN MATTER
12 .Deflector plate or scraper
13 .Self-cleaning tread unit structure
14 WITH LUBRICATING MEANS
15 COMBINED OR CONVERTIBLE
16 FRAME CARRIED TRACK
17 .With roller antifriction means
18 ..Track carried
19 SINGLE WHEEL TYPE
20 WHEEL ON TOP OF UPPER TRACK RUN
21 END WHEELS WITH INTERMEDIATE SUPPORT
22 .Support connected to end wheel for movement therewith to maintain track tension
23 .Intermediate support comprises wheel contacting upper and lower track runs
24 .Intermediate support engages lower track run
25 ..With intermediate upper track run support means
26 ..Support comprises endless roller chain
27 ..Support comprises vertically movable wheels
28 ..Support comprises plural wheels
29 RELATIVELY MOVABLE END WHEELS
30 .Vertically adjustable
31 .Longitudinally outwardly biased
32 .Longitudinally adjustable
33 WITH INTERPOSED FRICTION DRIVE BELT
34 INFLATABLE MEANS
35 R NON-METALLIC TYPE TRACK OR TREAD
35 EB ..Non-metallic ground engaging means includes endless belt
36 .With metal sleeve for connector pin
37 .With connecting means for reinforcing elements
38 .With metallic embedded reinforcement
39 TRACKS OR TREADS
40 .Cable connected treads
41 .Resilient connection between treads
42 ..Torsion bushing
43 ..Resilient compressible hinge
44 .Steerable
45 .Adjustable connection between treads
46 .With resiliently biased ground engaging portion
47 .With sag prevention means
48 ..Projecting truss type
49 ...Truss interconnected
50 .Track treads interconnected without separate fastening means
51 .With street plate
52 .With roller means
53 .One piece track tread
54 .With detachable grouser
55 ..Interconnected without separate fastening means
56 .With means for interfitting with support
57 ..Sprocket and track engagement
58 R .Separate transverse pin connector between treads
58 PC ...Pin connectors
59 ..Non-cylindrical or hollow connector pin
60 MISCELLANEOUS

****

CROSS-REFERENCE ART COLLECTION

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900 MASTER LINK

CLASS 307 ELECTRICAL TRANSMISSION OR INTERCONNECTION SYSTEMS

DECEMBER 1990

1	SUPERIMPOSED UNLIKE CURRENTS
2	.AC and DC sources
3	.Different frequencies or phase
4	.Different voltages
5	..Series-connected
6	...Plural converters
7	....Induction transformer
8	...Plural generators
9.1	VEHICLE MOUNTED SYSTEMS
10.1	.Automobile
10.2	..Antitheft
10.3	...Ignition or starting circuit lock
10.4	....Manual code input (e.g., push button)
10.5	....Coded record input (e.g., IC card)
10.6	..Ignition or starter circuits
10.7	..Battery protection
10.8	..Lighting circuits
11	PLURAL LOAD CIRCUIT SYSTEMS
12	.Common conductor or return type
13	..Polyphase
14	...Phase balancing
15	..Voltage divider type
16	..Plural output generators
17	.Transformer connections
18	.Plural sources of supply
19	..Interconnected for energy transfer
20	...With control of magnitude of energy transfer
21	...Diverse sources
22	....AC and DC
23	..Substitute or alternate source
24	..With control of magnitude of current or power
25	..Diverse sources
26	...AC and DC
27	...Different frequencies
28	...Different voltages
29	..Selectively connected loads and/or sources
30	.Anticoupling of load circuits through same source
31	.Control of current or power
32	..Load current proportioning or dividing
33	..Constant magnitude control
34	...By control of one or more load circuits
35	..Limit control
36	.Serially connected load circuits
37	..Selective series-parallel connections
38	.Selectively connected or controlled load circuits
39	..Condition responsive
40	..Code-controlled
41	..Sequential or alternating
42	.Circuit arrangements or layouts
43	PLURAL SUPPLY CIRCUITS OR SOURCES
44	.One source floats across or compensates for other source
45	..With intervening converter
46	...Storage battery or accumulator-type source
47	..Dynamoelectric-type source
48	..Storage battery or accumulator-type source
49	...With series-connected auxiliary source
50	...Tap-changing or variable number of cells
51	.Circulating- or inter-current control or prevention
52	.Load current control
53	..Load current division
54	...Serially connected sources
55	...Fixed or predetermined ratio
56	....Diverse-or unlike-type sources
57	....Plural generators
58	....Plural converters
59	...Peak or excess load
60	..Constant load or current
61	...Serially connected sources
62	..Load-limiting
63	..Serially connected sources
64	.Substitute or emergency source
65	..Plural substitute sources
66	..Storage battery or accumulator
67	...With intervening dynamoelectric machine
68	..Dynamoelectric
69	.Sources distributed along load circuit
70	.Load transfer without paralleling sources
71	.Series-parallel connection of sources
72	.Diverse or unlike electrical characteristics
73	..Differing frequencies
74	..Differing capacities
75	..Differing voltages
76	...Generator sources
77	.Series-connected sources
78	..Generator sources
80	.Selective or optional sources
81	..Predetermined sequence
82	.Plural converters
83	.Plural transformers
84	.Plural generators
85	.Connecting or disconnecting
86	..Condition responsive
87	...Attainment of voltage, frequency or phase relationship
400	ELECTRETS
401	NONLINEAR REACTOR SYSTEMS (E.G., SATURABLE)
402	.Parametrons
403	..Thin film parametrons
404	..Using logic circuits
405	..Using pump energizer
406	.Magnetic flip-flops
407	.Logic circuits
408	..Multiaperture
409	..Clocking, delay or transmission line
410	..Nor, Not logic circuit
411	..Exclusive Or, And logic circuit
412	.Driver circuits
413	.Signal sensor (e.g., current or frequency)
414	.Magnetic trigger devices
415	.Magnetic switching circuits
416	.Amplifiers using nonlinear reactors (i.e., magnetic amplifiers)
417	..With transistors
418	..With feedback
419	.Magnetic pulse generator
420	..Using multivibrator
421	..With specified output waveform
422	.Multiaperture
423	..Three apertures or ladder
424	.Parametric frequency converter
425	..Optical or quasi-optical frequency converters
426	...Raman type
427	...Harmonic generator
428	...Parametric oscillators
429	...Optical laser acoustic delay lines
430	...Dielectric optical waveguide
200.1	NONLINEAR SOLID-STATE DEVICE CIRCUIT OR SYSTEM
201	.Neuron circuits
202.1	.Fusible link or intentional destruct circuit or device
440	.Digital logic
441	..Redundant
442	..Fail-safe
443	..Signal sensitivity or transmission integrity
444	..Insulated gate charge transfer device

	NONLINEAR SOLID-STATE DEVICE CIRCUIT OR SYSTEM
	.Digital logic
445	..Functions of AND, OR, NAND, NOR, or NOT
446	...Diverse device types or circuit combinations (e.g., FET-bipolar; TTL-DTL, transistor-tunnel diode)
447	....Space discharge device (e.g., vacuum tube)
448	...Field-effect transistor (FET)
449	....Decoding circuit
450	....Special FET
451	....Complementary FET's
452	.....With clocking
453	....With clocking
454	...Bipolar (e.g., RTL, DCTL)
455	....Emitter-coupled logic (ECL) (i.e., current mode logic (CML) or emitter-follower logic (EFL)
456	....Transistor-transistor logic (TTL) or complementary transistor logic (CTL)
457	....Diode-transistor logic (DTL)
458	.....With metal semiconductor junction diode (e.g., Schottky barrier or hot-carrier diode)
459	....Integrated injection logic (i.e., merged transistor logic (MTL) or current hogging logic (CHL)
460	...Diode
461	....Negative resistance device
462	...Superconductor (e.g., cryogenic)
463	..Decoding
464	..Threshold (e.g., majority, minority, or weighted inputs)
465	..Multifunctional or programmable (e.g., universal, PLA, etc.)
465.1	...Significant integrated structure layout or layout interconnections
466	...Bipolar
467	....Emitter-coupled or emitter-follower logic
468	...Field-effect transistor (FET)
469	....Complementary FET's
470	..Inhibitor
471	..Exclusive function (e.g., exclusive-OR)
472	...Half-adder or quarter-adder
473	..Tri-state
474	..Four or more state
475	..Interface
476	..Superconductor
477	..Integrated injection logic
478	..Negative resistance
479	..Frequency or phase
480	..Clocking or synchronizing of logic stages or gates
481	...Field-effect transistor (FET)
482	..With capacitive bootstrapping
482.1	..Significant integrated structure layout or layout interconnections
219	.Redundant means
219.1	.Nonpulse frequency conversion
227	.Stepwave generator
228	.Sawtooth or sweep waveform
490	.Nonlinear analog circuit (e.g., nonlinear amplifier or function generator)
491	..With compensation or stabilizing means (e.g., for temperature, component differences, power supply, etc.)
492	..For logarithmic function generation
493	..Including gain control means
494	..Including differential-comparator circuitry
495	...Having diverse-type transistor devices (e.g., FET-bipolar)
496	...Having complementary symmetry (e.g., PNP-NPN; N-channel FET-P-channel FET)
497	...Having field-effect transistor device
498	..Output a function of two or more analog inputs
499	..Including diverse-type nonlinear devices (e.g., FET-bipolar, diode-transistor)
500	..Including complementary symmetry
501	..Including field-effect transistor device
502	..Including negative resistance means (e.g., tunnel diode, punch through transistor, back diode, etc.)
503	..Including significant diode means
231	.Signal discriminating, comparing or selecting
510	..By phase, time, or frequency sensitive circuit
511	...With phase correction or control
512	....For quadrature rejection or control
513	....For phase splitting or reversing
514	...With phase angle sensing (e.g., lead-lag discriminators)
515	....Combined with transducer (e.g., shaft angle detection)
516	....Using reference signal (e.g., fixed, strobe, sampled)
517	...With time interval or rate of change (slope) detection
518	...With pulse selection/detection or time discrimination/decoding
519	...With frequency to voltage conversion (e.g., speed detection, antiskid circuits, etc.)
520	...With unwanted signal elimination (e.g., active filter circuits)
521	....Adjustable (e.g., tunable filters)
522	...With predetermined frequency selection
523	....Including sampling or reference frequency
524	....Including plural frequency detection
525	...With comparison of two or more input frequencies
526	....One a reference
527	....For synchronization detection
528	....With logic circuit
529	...With mixing, synthesizing, or combining (adding, multiplying, etc.) of signals
234	..As to pulse width or spacing
350	..As to amplitude
530	...By sensing amplifier
351	...Maximum or minimum amplitude
352	...Including details of sampling or holding
353	....Sample and hold
354	...Reference level crossover detecting (e.g., zero level)
355	...Plural varying inputs compared one to another
356	....Input provides varying reference signal
357	....Three or more inputs
358	...Input signal compared to reference derived therefrom
359	....Reference derived therefrom by feedback
360	...Input signal compared to plural fixed thresholds
361	....Three or more thresholds
362	...Input signal compared to single fixed threshold
363	....Threshold determined by single circuit element
364	....Plural sources of input signal

	NONLINEAR SOLID-STATE DEVICE CIRCUIT OR SYSTEM
	.Signal discriminating, comparing or selecting
236	..As to polarity
540	.Attenuation or control by limiting, clipping, or clamping
541	..Using superconductive device
542	..With transient or signal noise reduction
542.1	...Contact bounce noise signal (i.e., chattering)
543	...By filtering
544	...By using diverse-type nonlinear devices (e.g., FET-bipolar; transistor-diode)
545	...By using negative resistance device
546	...By feedback limiting-clamping
547	....Including controlled shunt-type circuit bypath
548	.....Using field-effect transistor
549	...By controlled or biased shunt-type circuit bypath
550	....Using only FET-type nonlinear device
551	....Using only diode-type nonlinear device
552	..Providing constant input-output amplitude level ratio
553	...By feedback control
554	....Including field-effect transistor
555	..For controlling output wave shape characteristics
556	...By filtering
557	..In input or output circuit
558	...For interstage coupling
559	....Using diode
560	...By using diverse-type nonlinear devices
561	...By using only diode
562	..Feedback
563	...Using Schottky barrier diode
564	..By using diverse-type nonlinear devices
565	..By using only diode
566	...Avalanche or negative resistance device (e.g., Zener diode, tunnel diode, etc.)
567	..By using only transistor
568	...Field-effect type device
239	.Gating (i.e., switching)
240	..Periodic switching (e.g., chopper)
241	..Plural controlled paths
242	...Parallel controlled paths
243	...Converging controlled paths
244	...Diverging controlled paths
245	..Superconductive (e.g., cryogenic) device
246	..Gate charges or discharged energy storage device
247.1	..Gate driving or driven by multivibrator
248	..Three or more electrode solid-state device gate
570	...Diverse devices gate (e.g., FET-bipolar transistors, SCR-FET, SCR-BIPOLAR)
249	...Bilateral transistor
250	....Plural
571	...Field-effect transistor
572	....Signal transmission integrity and spurious noise override
573	.....Control signal derived from or responsive to controlled signal
574	......FET hybrid device gate (e.g., depletion-enhancement, JFET-IGFET)
575	......Insulated gate FET (IGFET) (e.g., MOSFET) gate
576	.......Complementary metal oxide semiconductor (CMOS)
577	.....Insulated gate FET (IGFET) (e.g., MOSFET) gating
578	......With capacitive bootstrapping
579	......Complementary metal oxide semiconductor (CMOS)
580	....Responsive to external effect
581	....FET hybrid device gate (e.g., depletion-enhancement, JFET-IGFET)
582	....Synchronous or clocking (phase) control
583	.....Using insulated gate FET (IGFET)
584	....Insulated gate FET (IGFET) (e.g., MOSFET)
585	.....Complementary metal oxide semiconductor (CMOS)
630	...Negative resistance device (e.g., silicon controlled rectifier, thyristor)
631	....Particular device (e.g., significant structure, radiation responsive, etc.)
632	.....Triac
633	.....GTO (i.e., gate turnoff)
634	.....N-gate
635	.....Junctionless device (e.g., Ovshinsky effect switch)
636	.....PUT (i.e., programmable unijunction transistor)
637	.....Four electrodes
638	....Particular topology
639	.....DC supply
640	......Plural devices
641	.......Series anode-cathode paths
642	.......With commutating means
643	.....AC supply
644	......Device in bridge
645	......Plural devices
646	.......Inverse parallel
647	......Zero point switching
648	.....Complex wave supply
253	...Conventional transistor
254	....Plural
255	.....Opposite conductivity (i.e., complementary)
256	..Two electrode solid-state device gate
257	...Bridge circuit
258	...Negative resistance
259	...With conventional diode
260	.Signal shaping, converting or generating
261	..Signal conversion (e.g., sine wave to pulse, sawtooth to square wave, etc.)
262	..Phase or polarity control
263	..Slope control
264	..Amplitude control
265	..Pulse duration or width control
266	...Pulse shortening
267	...Pulse lengthening
268	..Pulse shaping
269	..Clocking, synchronizing or timing
270	..Current driving means
271	..Frequency or repetition rate control
272.1	..One or more stable-state circuits
272.2	...Master-slave bistable latch
272.3	...Initializing, resetting, or protecting a steady state condition
273	...Monostable
274	....Negative resistance device circuits
275	....Blocking oscillator
276	...Convertible circuits (bistable to monostable and vice versa, etc.)
277	...Superconductive (e.g., cryogenic) impact ionization and thin film devices

	NONLINEAR SOLID-STATE DEVICE CIRCUIT OR SYSTEM
	.Signal shaping, converting or generating
	..One or more stable-state circuits
278	...Hall and other external effect devices (light, heat, mechanical force, etc., sensitive devices)
279	...Including field-effect device
280	...Minority carrier storage effect
281	....Storage diodes (i.e., enhancement, Boff, step recovery, slow reverse recovery diodes)
282	...With transformer or saturable core device
283	...Negative resistance transistors (e.g., avalanche, punch through, unijunction transistor)
284	....Four or more layer devices, (e.g., SCR, CTO, CR, trigistor)
285	...Zener diode or capacitive diode
286	...Negative resistance diodes having N-shape characteristic on I-V Plot (e.g., tunnel diode, back diode, backward diode)
287	...Negative resistance diodes having S-shape characteristic on I-V Plot (e.g., four or more layer semiconductor devices)
288	...Complementary transistors
289	...Two or more stable state circuits with single transistor or plural transistors of same conductivity type
290	....Multivibrator with single cross-coupling path (e.g., Schmitt trigger)
291	....Multivibrator with at least two cross-coupling paths (e.g., Eccles-Jordan multivibrator)
292	.....Conventional diodes at input, output, or in cross-coupling path
590	.Time control (e.g., delay)
591	..Including significant compensation means (e.g., temperature or device characteristic compensated delay)
592	..For controlling switching operation
593	...Utilizing multivibrator delay means
594	...With field-effect device in delay means
595	...Having plural delay means or signal paths for single control means
596	...Of plural switch means (e.g., sequential operation)
597	...With controlled delay means (e.g., variable charge-discharge, on-delay/off-delay control)
598	....Relay
599	....Including negative resistance device in delay circuit (e.g., unijunction transistor, tunnel diode, SCR)
600	..Interval
601	...Pulse edge or angle delay (e.g., rising or falling edge delayed response)
602	...Having plural delay means or signal paths
603	...With controlled delay means (e.g., feedback control, variable charge/discharge, reset)
604	....Using negative resistance device
605	...Having particular circuit element or structure (e.g., FET, complementary transistors, etc.)
606	....Including delay line
607	.....Charge transfer device (e.g., charge-coupled or bucket-brigade device)
608	....Multivibrator or differential amplifier
296.1	.Including significant bias or power supply circuitry
296.2	..Having particular substrate biasing
296.3	..Power conservation or pulse type
296.4	..Including signal protection or bias preservation
296.5	...With field-effect transistor
296.6	..Having stabilized bias or power supply level
296.7	...With diverse type transistor devices
296.8	...With field-effect transistors only
298	.Thin film
299.1	.Special three or more electrode solid-state device circuit
299.2	..Multiple-emitter transistor
299.3	..Multiple-collector transistor
300	..Minority carrier storage
301	..Unijunction transistor
302	..Transistor breakdown devices (e.g., avalanche, zener or punch through)
303	..Integrated structure
303.1	...Significant layout or layout interconnections
303.2	....Having field-effect transistor device
304	..Field effect
305	..Four or more layer devices (e.g., silicon-controlled rectifier)
306	.Superconductive (e.g., cryogenic) device
307	..Impact ionization
308	.External effects
309	..Magnetic (e.g., Hall effect)
310	..Temperature
311	..Light
313	.Complementary transistors
314	.Saturable reactor
315	.Darlington connection
316	.Tube and transistor in same circuit
317.1	.Diode circuit
317.2	..Schottky barrier diode
318	..Two terminal breakdown devices (e.g., zener diode)
319	..Minority carrier storage diode (e.g., enhancement diode)
320	..Capacitive diode
321	..Diode bridge circuit
322	.Negative resistance device having "N"-type curve on I-V Plot (e.g., tunnel diode type)
323	..Backward diode, unitunnel diode or tunnel rectifier
324	.Negative resistance device having "S"-type curve on I-V Plot (e.g., PNPN diode type)
325	..Hyperconductive diode (i.e., PNPN type)
326	PERSONNEL SAFETY OR LIMIT CONTROL FEATURES
327	.Parasitic current suppression
328	.Interlock
89	ANTI-INDUCTION OR COUPLING TO OTHER SYSTEMS
90	.Inducing current control
91	.Magnetic or electrostatic field control (e.g., shielding)
95	ANTI-ELECTROLYSIS
96	INTERMITTENT REGULATORY INTERRUPTION OF SYSTEM
97	.Condition responsive
98	COMBINED IMPEDANCE AND SWITCH SYSTEMS
99	.Condition responsive switch
100	SHUNTING OR SHORT CIRCUITING SYSTEMS

101	RESIDUAL OR REMANENT MAGNETISM CONTROL
102	STABILIZED, ANTI-HUNTING OR ANTIOSCILLATION SYSTEMS
103	WITH LINE DROP COMPENSATION
104	ELECTROMAGNET OR HIGHLY INDUCTIVE SYSTEMS
105	WITH HARMONIC FILTER OR NEUTRALIZER
106	WAVE FORM OR WAVE SHAPE DETERMINATIVE OR PULSE-PRODUCING SYSTEMS
107	.With rectification or derectification
108	.With capacitor
109	CAPACITOR
110	.Parallel-charge, series-discharge (e.g., voltage doublers)
111	NONRESPONSIVE-TO-FREQUENCY-CHANGE SYSTEMS
112	SWITCHING SYSTEMS
113	.Plural switches
114	..Lazy-man switch type
115	..Selectively actuated
116	.Condition responsive
117	..Light, heat, vibratory or radiant energy
118	..Fluid pressure, density, level, velocity or humidity
119	..Mechanical force
120	...Speed, centrifugal or kinetic force
121	....Inertia or acceleration
122	....Direction of rotation
123	....Differential speed between two bodies
124	....Torque
125	..Electrical
126	...Power or energy
127	...Polarity, phase sequence or reverse flow
128	...AC or DC discriminating
129	...Frequency
130	...Voltage
131	...Current
132 R	.Repetitive make and break
132 E	...Electronically controlled relay
132 EA	....Responsive to physical condition
132 T	...Thermal relay
132 V	...Vibrating relay
132 M	...Miscellaneous
134	.With operation facilitating feature
135	..Preliminary reduction in current or voltage of system
137	..Switch contact conditioning
138	...Polarity reversing
139	.Switch actuation
140	..Power circuit controlled
141	..With time delay or retardation means
141.4	...Electrically initiated
141.8	...Series connected switches
142	..With locking, holding or braking means
143	..Electrical actuator
144	..Fluid-pressure actuator
145	WITH CURRENT COLLECTION OR TRANSFER
146	UNIDIRECTIONAL CONDUCTOR SYSTEMS
147	CONDUCTOR ARRANGEMENTS OR STRUCTURE
148	.Multipart-conductor current equalization
149	MISCELLANEOUS SYSTEMS
150	.Power packs
151	.Conversion systems
152	.Rate of change responsive systems
153	.Generator control systems
154	.For particular load device
155	..Plural diverse load devices
156	...Structural load device combinations
157	..Lamp or discharge device

CLASS 310 ELECTRICAL GENERATOR OR MOTOR STRUCTURE

DECEMBER 1990

1	EDUCATIONAL OR CONSTRUCTION UNITS OR KITS
300	NON-DYNAMOELECTRIC
301	.Nuclear reaction
302	..Contact potential difference
303	..P-N semiconductor
304	..Secondary electron emission
305	..Direct charge particle emission
306	.Thermal or pyromagnetic
307	..With heat actuated bimetal element
308	.Charge accumulating
309	..Electrostatic
310	...Friction
311	.Piezoelectric elements and devices
312	..Adding or subtracting mass
313 R	..Surface acoustic wave devices
313 A	....Orientation of piezoelectric material
313 B	....Interdigitated electrodes
313 C	.....Envelope or apodized
313 D	.....Grating or reflector in wave path
314	..Electrical systems
315	...Temperature compensation circuits
316	...Input circuit for simultaneous electrical and mechanical output from piezoelectric element
317	...Input circuit for mechanical output from piezoelectric element
318	...Input circuit for electrical output from piezoelectric element
319	...Electrical output circuit
320	..Piezoelectric slab having different resonant frequencies at different areas
321	..Combined with resonant structure
322	...Acoustic wave type generator or receiver
323	...Direct mechanical coupling
324	...Diaphragm
325	...Sandwich or Langevin type
326	..Combined with damping structure
327	...On back of piezoelectric element
328	..With mechanical energy coupling means
329	...Including inertia type operator
330	...Bending type
331	....Plural elements
332	.....Multimorph
333	...Shear or torsional type
334	...Acoustic wave type generator or receiver
335	....With lens or reflector
336	....Nondestructive testing type
337	....Underwater type
338	...Force or pressure measuring type
339	...Voltage, spark or current generator
340	..Encapsulated or coated
341	..With temperature modifier and/or gas or vapor atmosphere control
342	...For plural piezoelectric elements
343	...With heating element
344	...Sealed unit
345	..Supported by elastic material
346	..With temperature compensating structure
347	...Compensated air gap
348	..With mounting or support means
349	...Air gap
350	....Adjustable
351	...Suspended by thin member
352	....Point contact on major surfce only
353	....Contact at edges only
354	...Clamped
355	....Spring bias
356	.....90 degrees to major surface and margin clamped only
357	..Orientation of piezoelectric polarization
358	...Ceramic composition (e.g., barium titanate)
359	....More than one poling direction (e.g., Rosen transformer)
360	..Rotation of crystal axis (e.g., cut angle)
361	...Quartz
362	...Rochelle salt
363	..Electrode materials
364	...Multilayer
365	..Electrode arrangement
366	...More than two
367	..Piezoelectric element shape
368	...Rectangular plate
369	...Circular disc, ring, or cylinder
370	..."U" or "tuning fork" shape
371	...Sphere or hemisphere
10	DYNAMOELECTRIC
11	.Conducting fluid
12	.Linear
13	..Fixed and movable wound elements
14	..Solenoid and core type
15	.Reciprocating
16	..With cooling or temperature modification
17	..With other elements
19	...Speed control or time delay
20	...Motion-converting mechanism
21	....Pivoted or flat-spring armature
22	.....Plural armatures
23	....Solenoid and core type
24	.....Plural cores
25	..Reed type
26	..Magnetostrictive
27	..Fixed and movable wound elements
28	..Direct-connected
29	...Pivoted or flat-spring armature
30	...Solenoid and core
31	..Self-actuated interrupter
32	...Pivoted or flat-spring armature
33	....Plural armatures
34	...Solenoid and core
35	....Successively energized solenoid coils
36	.Oscillating
37	..With motion-converting mechanism
38	..Direct-connected
39	..With interrupter
40 R	.Rotary
40 MM	...Miniature motors
40.5	..Self-nutating or moving (e.g., oscillating fan, etc.)
41	..With mechanical starters
42	..With assembling, metal casting or machining feature
43	..Molded plastic
44	..Powdered metal
45	..Impregnated or coated
46	..Magnetic motors
47	...Portable or hand tool (e.g., dry shavers)
48	...With other elements
49 R	...Step-by-step
49 A	.....Claw-tooth and printed circuit components
50	..Portable or hand tool
51	..Vibration or noise suppression
52	..Cooling or fluid contact
53	...With control means
54	...Liquid coolant
55	...Nonatmospheric gas
56	...With gas purification or treating
57	...Intermediate confined coolant
58	...Circulation
59	....Plural units or plural paths
60 R	....Self-forced
60 A	......Hollow passages
61	.....Rotor passage

DYNAMOELECTRIC
.Rotary
..Cooling or fluid contact
...Circulation
....Self-forced
62 .....Suction pump or fan
63 .....Pressure pump or fan
64 ....Heat-exchange structure
65 .....Spacers (e.g., laminae, coils, etc.)
66 ..With other elements
67 R ...Inbuilt or incorporated unit
67 A .....Bicycle-hub generators
68 R ...Electric circuit elements
68 A .....Manually operable (e.g., switches, rheostats, etc.)
68 B .....Condition responsive (e.g., position, torque, etc.)
68 C .....Temperature, current-responsive, i.e., protectors
68 D .....Conversion elements, (e.g., transformers, rectifiers, etc.)
68 E .....Motion responsive (e.g., centrifugal switches)
69 ....Shaft-driven switch (e.g., blasting generators)
70 R .....Distributor or timer (e.g., ignition magnetos)
70 A ....Ignition systems
71 ....Connectors, terminals or lead-ins
72 ....Impedance devices
73 ....Illuminating devices
74 ....Inertia or fly-wheel device
75 R ...Drive mechanism
75 A .....Spring or gravity drive
75 B .....Hand- or foot-operated
75 C .....Rim drive (e.g., bicycle generator drive by wheel, rim, or tire)
75 D .....Flexible shaft or coupling and hollow shaft drive
76 ....Brake and clutch
77 ....Brake
78 ....Clutch
79 ....Shaft and armature timing or phasing connection
80 ....Motion conversion
81 .....Unbalanced weight (e.g., vibrators)
82 .....Swash plate
83 .....Gearing
84 .....Impulse coupling
85 ...Mechanical shields or protectors
86 ....Shield in air gap
87 ....Submersible
88 ....Dirt, moisture or explosion proof
89 ....Housings, windows or covers
90 ...Bearing or air-gap adjustment or bearing lubrication
90.5 ....Magnetic bearing
91 ...Supports
92 ..Torque-transmitting clutches or brakes
93 ...Brake type
94 ...Automatic control
95 ....By speed
96 ...With other drive mechanism
97 ....Output bias or resistance device
98 ....Drive motor
99 ....Gearing
100 ....Mechanical clutch
101 ...Plural units
102 R ...Generator-motor type
102 A .....Homopolar clutches
103 ...Magnetic field type
104 ....With air-gap shield
105 ....Induced or eddy current type
106 .....Magnetic reluctance feature
107 .....With collection means for induced current
108 ......Delivery to external device
109 ....Electric motor
110 ....Impedance
111 ..Generated wave-form modification
112 ..Plural units, structurally united
113 ...Motor-generator sets
114 ..Plural rotary elements
115 ...Field and armature both rotate
116 ....Limited movement
117 .....Mechanical bias
118 ....With interconnecting drive mechanism
119 .....Fluid-drive mechanism
120 .....Friction-drive mechanism
121 .....Mechanically controlled element
122 ......By additional dynamoelectric machine
123 ......Friction brake
124 ...Plural short-circuited rotary elements
125 ....Squirrel cage type
126 ...Plural armatures in common field
127 ..Plural collector-type machines
128 ...Commutator and slip-ring type
129 ....Synchronous or rotary converter
130 .....For plural wire D.C. system
131 ....Different armature circuits
132 .....Polyphase armature winding
133 ....Common armature winding
134 .....With plural field windings
135 ....Commutator in field circuit
136 ...Plural commutator type
137 ....Double current D. C. machines
138 .....Dynamotor type
139 .....Hetero-axial excitation
140 ....Plural armature windings
141 .....Plural field windings
142 ....Plural field windings
143 ...Plural slip-ring sets
144 ....Plural armature windings
145 .....Plural sets of poles
146 .....Polyphase windings
147 .....Slip rings in field circuit
148 ...Plural sets of brushes
149 ....Plural field windings
150 .....Polyphase arrangement
151 ....Short circuiting conductor between brushes
152 ..Permanent magnet machines
153 ...Inbuilt with flywheel (magneto)
154 ...Permanent magnet stator
155 ....Inductor type
156 ...Permanent magnet rotor
157 ..Vertically disposed
158 ..Universal (A.C. or D.C.)
159 ..A.C.
160 ...Frequency converters
161 ...Phase-shifter type
162 ...Synchronous
163 ....Reaction type
164 .....Toroidal coil
165 ....D.C. excited
166 ...Induction
167 ....With repulsion-starting
168 ....Inductor-type generators (variable reluctance)
169 .....High frequency
170 ......Multifrequency
171 ....Induction generators
172 ....Shifting field (e.g., shading pole)
173 ...Commutated
174 ....Single phase
175 .....Conduction operation
176 .....Transformer operation
177 ..D.C.
178 ...Homopolar
179 ..Windings and core structure
180 ...Field or excitation windings or structure
181 ....Combined permanent and electromagnet

DYNAMOELECTRIC
.Rotary
..Windings and core structure
...Field or excitation windings or structure
182 ....With short-circuited winding or conductor
183 .....Damper winding
184 .....Plural field windings
185 .....Plural sets of poles
186 .....Interpole, compensating or neutralizing poles
187 .....Slotted or divided pole
188 .....Differentially related
189 ....Variable length or tapped winding
190 ....Magnetic shunts for shifting field flux
191 ....Adjustable magnetic structure
192 ....Nonmagnetic inserts or air gaps
193 ....Nonuniform core cross section
194 ....Coil supports and spools
195 ...Armature or primary
196 ....Corona-prevention
197 ....With short-circuited winding or conductor
198 ....Plural windings
199 .....Combined stationary and rotary
200 ....Variable length or tapped windings
201 ....Bar windings
202 ....Open windings
203 ....Closed windings
204 .....Equalizers
205 .....Multiplex
206 .....Lap
207 .....Wave
208 ....Coils
209 ....Adjustable magnetic structure
210 ...Secondary windings or conductors
211 ....Squirrel cage
212 .....Inherently variable impedance (double squirrel cage)
213 ...Antiparasitic conductors (imbricated)
214 ...Coil retainers or slot closers
215 ...Slot liners
216 ...Core features
217 ....Securing laminae
218 ....Pole assembly and securing means
219 ..Current collectors
220 ...Spark-reduction
221 ....Arc extinguishers
222 ....Spark-neutralizing current
223 ....Flux compensators
224 .....Commutating poles or windings
225 .....Short-circuited coil circuit
226 .....Field-distortion
227 ...With cooling
228 ...With cleaning, lubricating, resurfacing or repairing
229 ...Brush-traversing
230 ...Circumferential brush shifting on reversal
231 ...Rotary structure
232 ....Slip rings
233 ....Commutators
234 .....Winding connectors
235 .....Molded support
236 .....Cylindrical or drum
237 .....Disc
238 ...Fixed structure
239 ....Brush holders or rigging
240 .....Brush-lifting
241 .....Circumferential adjustment
242 .....Brush engagements or guides
243 .....Fluid pressure-operated
244 .....Brush affixed to pivoted arm
245 .....Slidable brush
246 ......Pressure arm
247 ......Axial spring
248 ....Brushes
249 .....With electrical connector
251 .....Structure (e.g., composite material)
252 .....With composition feature
253 ......Carbonaceous
254 ..Stator structure
255 ...For railway-type machines
256 ...Stray field flux loss prevention
257 ...Interfitting or claw-tooth stators
258 ...Frame and core type
259 ....Core assembly
260 ....End turn supports
261 ..Rotor structure
262 ...High-speed rotor type
263 ...Interfitting or claw tooth rotors
264 ...Armatures
265 ....Drum
266 ....Hollow (e.g., double air gap)
267 ....Ring
268 ....Disc
269 ....Salient pole
270 ...End turn supports
271 ...Banding
272 ..Elements
273 ..Miscellaneous

CROSS-REFERENCE ART COLLECTION

800 PIEZOELECTRIC POLYMERS (E.G., MYLAR, PVDF)

DIGESTS

DIG 2 Hysteresis rotors and motors
DIG 3 Hall effect generators and converters
DIG 6 Printed-circuit motors and components

1	BARRIER OPENING WITH FLEXIBLE SEAL FOR OPERATOR
3	CANOPY OR CURTAIN TYPE
4	.Wall
5	..Knockdown or foldable
6	.Knockdown or foldable
7.1	RADIO TYPE
7.2	.With television adjunct
8	PHONOGRAPH TYPE
9	.Record holders
10	..Disk
11	...Rotatable rack
12	...Sliding holders
13	...Tilting holders
14	...Horizontally pivoted holders
15	...Selective ejection or delivery
16	....Remainder locked
17	....Gravity delivered
18	....Individual ejector, master selector
19	....Master ejector
20	PICTURE MACHINE OR FILM TYPE
21	DISAPPEARING-INSTRUMENT TYPE
22	.Combined closure and support
23	..Interconnected closure and support
24	...On swingable link or linkage
25	...With trackway
26	...Pivoted support
27	.On swingable link or linkage
28	..With trackway
29	.With trackway
30	.Pivoted support
31	WITH GAS OR VAPOR TREATMENT OF MATERIAL
31.01	.By wetted surface exposed to material chamber and continuously contacted by unconfined gas
31.02	..Knockdown
31.03	..Moistened chamber wall
31.04	...Of porous mass only
31.05	...Of porous fabric sheet only
31.06	....Liquid down flow with bottom gutter
31.1	.Mounted on container closure
31.2	.Externally accessible
31.3	..Movably mounted holder
33	WORSHIP
37	TOWEL SERVICE TYPE
38	.Continuous strip
39	CONTINUOUS STRIP TYPE
40	.Drawer magazine
41	.Rotatable
35	REMOVAL FACILITATING MAGAZINE TYPE
36	.Article cooling
42	.Stacked article type
43	..Cup shaped article
45	..Cylindrical article
49	..Ball
50	..Card or sheet
59	...Rotatable
60	...Chute or column
61	....With follower
71	..With follower
72	.Cylindrical article
73	..Slender article
86	...With igniter
91	.Web conveyer
97	.Endless carrier
97.1	.Rotating magazine
100	OUTDOOR TYPE
101	.Wall or window
102	..Show-case
107	SECTIONAL-UNIT TYPE
107.5	.With gang-bar type lock or latch
108	.Knockdown
109	.Door or closure constructions
110	..Equalizers
111	.Connectors
114	SHOW-CASE TYPE
115	.With sprinklers
116	.Refrigerator
117	.With compartments
118	..Stock and sample
119	...Sliding compartment
120	...Pivotally mounted compartment
121	...Chute
122	..Sliding compartment
123	..Pivotally mounted compartment
124	..Chute
125	..Rotatable
126	.With trays
127	..Interconnected closure and tray
128	.With racks
129	..Combined closure and rack
130	...Interconnected closure and rack
131	...On trackway
132	..On trackway
133	...Pivoted support
134	..Endless carrier
135	..Rotatable
136	..Pivoted
137	.Counter protectors or guards
138.1	.With closure (e.g., door)
139	..And operator
139.1	..Movable sequentially, pivotally and rectilinearly
139.2	..Rectilinear movement
140	.Joints and connectors
140.1	COUNTERS
140.2	.Portable
140.3	.Tops
140.4	..Attachments
183	WITH CARD OR SHEET RETAINERS
184	.Suspended sheets
185	.Sheets gripped in housed position
186	..Rotatable drum with card retainers actuated by rotation
187	..Retainers on housing
188	.Formed by closure operable when closed
189	.Sheet impalers
190	.Spring urged
191	..Relatively, sequentially movable carriers
192	..Horizontally swinging support
193	.Fixed non-gripping retainers
194	SPACED PEDESTAL TYPE (E.G., KNEEHOLE DESKS)
195	.Knockdown, set-up, or sectional
196	.With structure above table
197	.Rotary pedestal compartment
198	ARRANGEMENTS OF PLURAL CABINETS
199	.Adjacent mutual closures
200	..Movable as a unit
201	.Relatively movable
202	..Axially rotary
203	.With interposed table
204	SIMULATION, ORNAMENTATION OR WITH SECRET COMPARTMENT
205	EXPANSIBLE
206	FOR BRUSH, BROOM OR MOP
207	.Projecting article handle
208	WITH TYPEWRITER TYPE HOUSING OR SUPPORT
209	LABORATORY, DENTAL, BARBER OR MEDICAL
210	MASK OR SCREEN TYPE
210.5	WITH SIFTER
211	WITH DEPOSIT AND COLLECTION COMPARTMENT
212	.Movably mounted
213	FORAMINOUS EXTERIOR WALL
214	SPACED OR INSULATED WALL
215	WITH LOCK OR LATCH SELECTOR-OPERATOR
216	GANG-BAR TYPE LOCKING OR LATCHING MEANS
217	.Concealed
218	..With push or pull rod as operator
219	..With separable key as operator
220	..With closure as operator
221	..With movable compartment as operator
222	LATCH ACTUATED BY COMPONENT OR ITS LATCH
223	WITH ILLUMINATED, ELECTRICAL, OR FLUID PRESSURE MEANS

CLASS 312 SUPPORTS, CABINET STRUCTURES

DECEMBER 1990

1	BARRIER OPENING WITH FLEXIBLE SEAL FOR OPERATOR
3	CANOPY OR CURTAIN TYPE
4	.Wall
5	..Knockdown or foldable
6	.Knockdown or foldable
7.1	RADIO TYPE
7.2	.With television adjunct
8	PHONOGRAPH TYPE
9	.Record holders
10	..Disk
11	...Rotatable rack
12	...Sliding holders
13	...Tilting holders
14	...Horizontally pivoted holders
15	...Selective ejection or delivery
16	....Remainder locked
17	....Gravity delivered
18	....Individual ejector, master selector
19	....Master ejector
20	PICTURE MACHINE OR FILM TYPE
21	DISAPPEARING-INSTRUMENT TYPE
22	.Combined closure and support
23	..Interconnected closure and support
24	...On swingable link or linkage
25	...With trackway
26	...Pivoted support
27	.On swingable link or linkage
28	..With trackway
29	.With trackway
30	.Pivoted support
31	WITH GAS OR VAPOR TREATMENT OF MATERIAL
31.01	.By wetted surface exposed to material chamber and continuously contacted by unconfined gas
31.02	..Knockdown
31.03	..Moistened chamber wall
31.04	...Of porous mass only
31.05	...Of porous fabric sheet only
31.06	....Liquid down flow with bottom gutter
31.1	.Mounted on container closure
31.2	.Externally accessible
31.3	..Movably mounted holder
33	WORSHIP
37	TOWEL SERVICE TYPE
38	.Continuous strip
39	CONTINUOUS STRIP TYPE
40	.Drawer magazine
41	.Rotatable
35	REMOVAL FACILITATING MAGAZINE TYPE
36	.Article cooling
42	.Stacked article type
43	..Cup shaped article
45	..Cylindrical article
49	..Ball
50	..Card or sheet
59	...Rotatable
60	...Chute or column
61	....With follower
71	..With follower
72	.Cylindrical article
73	..Slender article
86	...With igniter
91	.Web conveyer
97	.Endless carrier
97.1	.Rotating magazine
100	OUTDOOR TYPE
101	.Wall or window
102	..Show-case
107	SECTIONAL-UNIT TYPE
107.5	.With gang-bar type lock or latch
108	.Knockdown
109	.Door or closure constructions
110	..Equalizers
111	.Connectors
114	SHOW-CASE TYPE
115	.With sprinklers
116	.Refrigerator
117	.With compartments
118	..Stock and sample
119	...Sliding compartment
120	...Pivotally mounted compartment
121	...Chute
122	..Sliding compartment
123	..Pivotally mounted compartment
124	..Chute
125	..Rotatable
126	.With trays
127	..Interconnected closure and tray
128	.With racks
129	..Combined closure and rack
130	...Interconnected closure and rack
131	...On trackway
132	..On trackway
133	...Pivoted support
134	..Endless carrier
135	..Rotatable
136	..Pivoted
137	.Counter protectors or guards
138.1	.With closure (e.g., door)
139	..And operator
139.1	..Movable sequentially, pivotally and rectilinearly
139.2	..Rectilinear movement
140	.Joints and connectors
140.1	COUNTERS
140.2	.Portable
140.3	.Tops
140.4	..Attachments
183	WITH CARD OR SHEET RETAINERS
184	.Suspended sheets
185	.Sheets gripped in housed position
186	..Rotatable drum with card retainers actuated by rotation
187	..Retainers on housing
188	.Formed by closure operable when closed
189	.Sheet impalers
190	.Spring urged
191	..Relatively, sequentially movable carriers
192	..Horizontally swinging support
193	.Fixed non-gripping retainers
194	SPACED PEDESTAL TYPE (E.G., KNEEHOLE DESKS)
195	.Knockdown, set-up, or sectional
196	.With structure above table
197	.Rotary pedestal compartment
198	ARRANGEMENTS OF PLURAL CABINETS
199	.Adjacent mutual closures
200	..Movable as a unit
201	.Relatively movable
202	..Axially rotary
203	.With interposed table
204	SIMULATION, ORNAMENTATION OR WITH SECRET COMPARTMENT
205	EXPANSIBLE
206	FOR BRUSH, BROOM OR MOP
207	.Projecting article handle
208	WITH TYPEWRITER TYPE HOUSING OR SUPPORT
209	LABORATORY, DENTAL, BARBER OR MEDICAL
210	MASK OR SCREEN TYPE
210.5	WITH SIFTER
211	WITH DEPOSIT AND COLLECTION COMPARTMENT
212	.Movably mounted
213	FORAMINOUS EXTERIOR WALL
214	SPACED OR INSULATED WALL
215	WITH LOCK OR LATCH SELECTOR-OPERATOR
216	GANG-BAR TYPE LOCKING OR LATCHING MEANS
217	.Concealed
218	..With push or pull rod as operator
219	..With separable key as operator
220	..With closure as operator
221	..With movable compartment as operator
222	LATCH ACTUATED BY COMPONENT OR ITS LATCH
223	WITH ILLUMINATED, ELECTRICAL, OR FLUID PRESSURE MEANS

	WITH MOVABLE COMPONENTS
	.Horizontally movable (e.g., drawer)
331	..With equalizer
332	..Transversely yieldable guides
333	..With latch, lock, or gravity closer
334	..With relatively movable guide or support
335	...Horizontal, non-pivotal
336	....Cradle type
337	.....Anti-friction
338	....Between vertical sides of component and cabinet
339	.....Anti-friction
340	....Anti-friction
341.1	..Having antifriction means
342	...Superjacent guides
343	...Non-tilting
344	...Non-twisting
344.1	...Other than roller-type (e.g., block of antifriction material)
345	..Superjacent guides
346	..Non-tilting
347	..Non-twisting
348	..Stop or buffer
348.1	..Knockdown or setup type
348.2	...Plurality of parts, held together by distinct fastening elements (e.g., bolts)
348.3	..Compartmented
348.4	..Facing (e.g., drawer front or face plate)
348.5	..For holding document or pad
349	WITH EXTERNAL GUIDES OR TRACKWAYS
350	WITH INTERNAL GUIDES OR TRACKWAYS
351	COMPONENTS SPACED FROM BOTTOM WALL
352	MISCELLANEOUS
	******************************
	DIGEST
	******************************
DIG 33	Tool chests

CLASS 313 ELECTRIC LAMP AND DISCHARGE DEVICES

DECEMBER 1990

1	PLURAL UNIT
2.1	.Cathode ray tube
3	.Inter-electrode connection
5	.Control electrode unit
6	..Plural control electrode units
7	WITH EVACUATING PUMP
8	ARC AND SEPARATE INCANDESCENT BODY
9	FILAMENT AND SEPARATE INCANDESCENT BODY
10	WITH TEMPERATURE INDICATOR
11	WITH TEMPERATURE MODIFIER
11.5	.Spark plug type
12	.Recirculating systems
13	.Having control means for the temperature modifier
14	.Pyroelectric type device
15	.Electric heater
16	..For liquid electrode
17	.Double wall, jacket or casing for envelope
18	..For conductive envelope devices
19	...With plural electrode temperature modifying
20	...With internal temperature modifying baffle
21	...Cylindrical electrode type envelope
22	..Fluid circulation type
23	...Plural electrode temperature modifying
24	...Flow directing means in casing
25	..Sealed casing for envelope
26	...Integral double wall type of envelope
27	..Heat conserving or insulating type
28	..Plural electrode temperature modifying
29	.For liquid electrode
30	.Hollow electrode or lead
31	..Tubular coil electrode
32	..Closed duct type (e.g., for liquid)
33	.Envelope with internal temperature modifying baffle
34	.Envelope with condensing chamber or surface
35	.Using liquids or fluid flow directing means
36	..Jacket or casing
37	.For filament or heated cathode
38	..Hollow shield around filament or cathode
39	.For electrode within an envelope
40	..Radiating type surface
41	...Material, roughened surface
42	.Mounted on lead-in or electrode support
43	.For lead-in-seal or stem protection
44	.For envelope wall
45	.Radiating type surface
46	.Having heat conducting path
47	.Heat conserving or insulating type
48	WITH HANDLE
49	WITH DETACHABLE ELECTRICAL CONNECTOR OR SUPPORT
50	.Resilient or vibration damping
51	.Electrical connector
52	CONVERTIBLE
53	FLAME OR EXPLOSION TYPE
54	WITH RADIOACTIVE MATERIAL
62	CYCLOTRONS
359.1	WITH POSITIVE OR NEGATIVE ION ACCELERATION
360.1	.Plural apertured electrodes
361.1	.Means for deflecting or focusing
362.1	.Supplying ionizable material (e.g., gas or vapor)
363.1	.Extraction or target electrode
364	CATHODE RAY TUBE
365	.Image pickup tube
366	..Semiconductor depletion layer type
367	...Mosaic
368	....Plural junction
369	..Mechanically responsive (e.g., sound)
370	..Particular transparent conductor
371	..With optical element
372	...Light conducting fiber or rod
373	..With photoemissive cathode
374	...Mosaic
375	...Plural photoemissive layers
376	...With target
377	....Secondary electron emissive
378	....Support
379	...Secondary electron emissive
380	...Special ray sensitive
381	...Image dissector
382	...Focusing
383	...Electrode or electrode support
384	..Photoconductive
385	...Layer composition
386	....Plural layers
387	...Secondary electron emissive
388	...Special ray sensitive
389	...Focusing
390	...Electrode or electrode support
391	.Storage
392	..Depletion layer type storage element
393	..Double ended
394	..Continuous storage element
395	..Foraminous storage element
396	..With non-beaming gun
397	..With display
398	...Integral or contiguous storage and display element
399	.Secondary emissive electrode
400	..With display
401	..Monoscope
402	.Shadow mask, support or shield
403	..Non-circular aperture
404	..With resilient support
405	...Bimetallic
406	...With studs
407	..With frame
408	..With screen
409	.Plural beam generating or control
410	..With character forming electrode
411	..One cathode source of plural beams
412	..Convergence
413	..With deflection
414	..With focusing and accelerating electrodes
415	..With screen
416	...Including non-planar elements
417	..With electrode support
418	.Signal translating output electrode
419	..Plural
420	.Electron permeable window
421	.Beam deflecting means
422	..Flat tube type
423	..Electron reflecting mirror
424	..Ion trap
425	..Centering
426	..Plural
427	...Three or more
428	....With convergence
429	....Field varied near screen (i.e., post deflection)
430	.....By external element
431	....Plural magnetic
432	...Electrostatic
433	....Magnetic
434	....Nonparallel or asymmetric
435	.....Nonplanar
436	....Enclosed or overlapping
437	....With distortion correction
438	....With support
439	..Electrostatic
440	..With yoke
441	.Ray generating or control
442	..With magnetic focus
443	...Internal
444	..Sandwiched electrodes

	CATHODE RAY TUBE
	.Ray generating or control
445	..Canted electrode (i.e., ion trap)
446	..Including cathode assembly
447	...With control grid adjacent cathode
448	....With anode
449	.....With additional electrode
450	......With coating or spiral electrode
451	......With support
452	...With focus electrode adjacent cathode
453	....Noncircular beam type
454	....Nonplanar cathode
455	.....Brillouin beam type
456	..With support for electrode
457	...Parallel rod type
458	..Electrode
459	...Movable
460	...Plural
461	.Screen
462	..Scale or graticule
463	..Electroluminescent
464	..Incandescent type
465	..Light valve type
466	..Nonluminescent layer
467	..Phosphor composition
468	...Rare earth
469	...Embedded in face plate
470	..Mosaic
471	...Beam indexing element
472	...Dot type
473	..Plural layer type
474	..With optics
475	...Light conducting fiber or rod
476	..Support
477 R	.Envelope
477 HC	...With details of high-voltage connector
478	..With external optical element
479	..Coating or shielding
480	..Composition
481	..With getter or gas
482	..Support for electrode or envelope
93	GEIGER-MUELLER TYPE
523	PHOTOSENSITIVE
524	.With optical device
525	.Having phosphor screen
526	..Proximity focus type
527	..Photocathode responsive to phosphor
528	..With electron multiplier
529	..With control electrode
530	..With photocathode on envelope
531	.Having plural photosensitive electrodes
532	.Photomultiplier
533	..Having plural dynodes
534	...Channel or circular type
535	...Venetian blind type
536	...Box or linear type
537	.Having a control electrode
538	.Gas phototube
539	.Responsive to ultraviolet radiation
540	.Having plural anodes or cathodes
541	.Having photocathode on tube wall
542	.Photocathode
543	..With phosphor
544	..With envelope
103 R	.SECONDARY EMITTER TYPE (E.G., ELECTRON MULTIPLIER)
103 CM	..Channel multiplier
104	.Plural secondary emissive electrodes
105 R	..Three or more
105 CM	....Channel multiplier
106	SECONDARY EMISSION PREVENTION
107	.Nonemissive material
107.5	VARIABLE WIDTH ELECTRON STREAM (E.G., MAGIC EYE)
483	WITH LUMINESCENT SOLID OR LIQUID MATERIAL
484	.With gaseous discharge medium
485	..Phosphor on envelope wall
486	...Including particular phosphor
487	....Plural
488	...Aperture-type tube
489	...With protective coating or filter
490	...With amalgam
491	...Electrode structure or material
492	....With shield or additional electrode
493	...Envelope structure or material
494	.Coplanar electrodes
495	.Vacuum-type tube
496	..Phosphor on anode segments
497	...With accelerating or control electrode
498	.Solid-state type
499	..Semiconductor depletion layer type
500	...Matrix or array
501	...Light conversion
502	..With phosphor embedding material
503	..With particular phosphor or electrode material
504	...Organic phosphor
505	..With electrode matrix
506	..Plural layers
507	...With photosensitive layer
508	...With piezoelectric layer
509	...With dielectric layer
510	..With character display (e.g., digits or letters)
511	..Flexible
512	..With envelope or encapsulation
513	WITH CHARACTER DISPLAY (E.G., DIGITS OR LETTERS)
514	.Gaseous discharge medium
515	..With character-shaped envelope
516	..Electrode with character-shaped aperture
517	..With electrode display segments
518	...With dielectric layer or coating
519	...Multiple display (i.e., side-by-side)
520	..With integrant display electrode
521	...Stacked electrodes (i.e., superimposed)
522	.Incandescent filament display
110	WITH OPTICAL DEVICE OR SPECIAL RAY TRANSMISSIVE ENVELOPE
111	.Plural diverse optical devices
112	.Polarizer or special ray transmission (e.g., filter)
113	.Reflector
114	..Plural reflectors
115	..Multiple filament lamps
116	.Light diffusing
117	.Light valve or obscuring means
118	SPARK PLUGS
119	.Sealing-off valve for electrode chamber
120	.With fluid feed or air vent
121	.Reversible (e.g., part)
122	.Removable electrode on shell
123	.Plural series gaps
124	..Intensifier in center electrode lead-in
125	.Movable electrode (e.g., for cleaning, adjustable)
126	..Automatically moved (e.g., engine vibration)
127	.Cleaner (e.g., movable scraper)
128	.Plural insulated electrodes with individual lead-in
129	.With transparent part
130	.Non-conducting material in or adjacent gap (e.g., restricts spark)
131 R	..Non-shortest line spark and surface spark type
131 A	....Spark plugs with semiconductive material at the gap
132	.Capillary groove or space
133	.Ball electrode

	SPARK PLUGS
134	.With radio shielding
135	.With particular connector structure
136	.Plural part center electrode lead-in
137	.Plural part insulating means
138	.Electrodes are pure figures of revolution about plug axis
139	.Ring or disk electrode (e.g., sector)
140	.Plural parallel gaps (e.g., main and standby, serrated electrode)
141	.Particular electrode structure or spacing
142	..Gap on and along axis
143	.Shaped electrode chamber, insulator end, shell skirt, baffle or gas directing means
144	.With specific joint structure
145	..Between center electrode and insulator
146	WITH MOVABLE ELECTRODE OR SHIELD
147	.Plural
148	.Movable envelope wall
149	.Rotary
150	.Movable liquid electrode
151	.Thermal actuator
152	.Magnetic actuator
153	WITH MAGNETIC DEVICE
154	.For generating plural fields
155	.Electrode generates field
156	.Field transverse to discharge
157	..Concentrically arranged electrode with axial field
158	...Pole pieces facing electrode ends
159	....Electrode support penetrates pole piece
160	.With envelope
161	..Gas or vapor type
162	..Three or more electrodes
163	LIQUID ELECTRODE DISCHARGE DEVICES
164	.Shock absorber for liquid
165	.Plural liquid electrodes
166	.Starting band or external electrode
167	.Apertured electrode (e.g., grid) interposed in discharge space
168	.Plural anodes in separate envelope chambers
169	.Plural anodes with anode arc shield
170	.Auxiliary starting or holding electrode
171	..Immersed in liquid electrode
172	.Liquid in contact with plural electrodes
173	.Cathode spot anchoring
545	HAVING VALVE WITH GETTER, GAS/VAPOR GENERATING MATERIAL OR PRESSURE CONTROL MEANS
546	WITH FRANGIBLE CAPSULE CONTAINING GETTER, GAS OR VAPOR GENERATING MATERIAL
547	HAVING HEATING MEANS TO CONTROL GAS/VAPOR,GAS OR VAPOR GENERATING MEANS OR GETTER MEANS
548	.Incandescent lamp gettering
549	.Discharge device gettering
550	.Vapor generating
551	.Gas generating
552	HAVING PRESSURE CONTROL OF GAS OR VAPOR
553	WITH GETTER
554	.Plural
555	..Diverse
556	.And vapor generator
557	.Incandescent lamp type
558	.Electrode includes getter, supports getter or is connected to getter
559	.Mounted on electrode support
560	.With structure to direct or shield from getter
561	.With contained getter
562	.Gas or vapor device type
563	HAVING GAS GENERATING MATERIAL
564	HAVING VAPOR GENERATING MATERIAL
565	.Mercury vapor material
566	.Electrode or electrode support includes material
567	WITH GAS OR VAPOR
568	.Having a particular total or partial pressure
569	..Incandescent lamp
570	..Greater than 760 torr
571	...Includes mercury in gas or vapor fill
572	..One torr thru 760 torr
573	...Having specified envelope detail
574	...With electrode structure
575	....Composite
576	.....With rare gas
577	..Less than .1 torr
578	.Incandescent filament lamp
579	..Tungsten-Halogen cycle lamp
580	..With filter, barrier, screen, shield, electric terminal or fuse
581	.Three or more electrode discharge device
582	..Multiple gaseous discharge display panel
583	...Having electric terminal detail
584	...Having intersecting electrode sets
585	....With three sets of electrodes
586	....With dielectric member
587	.....And additional layer on member
588	..Amplifier, cathanode, or ionic cathode
589	..Counter, indicator or switching tube
590	..With shield to prevent discharge between electrodes
591	..Having cathode heater
592	...With control electrode
593	....Plural
594	..Start electrode exterior to envelope
595	..Internal start or control electrode between discharge electrodes
596	...Strip electrode
597	...Interposed apertured electrode
598	....Mean free-path spacing
599	....Plural serial apertured electrodes
600	...Two interposed electrodes
601	..Start electrode not in main discharge path
602	...Trigger electrode concentric with discharge electrode
603	...Triggerable vacuum gap device
604	..Plural serial electrodes
605	.Mean free-path spacing of envelope portions or content parts
606	..Electrode spacing related to mean free path length
607	.Having electrode exterior to envelope
608	.Single electrode type discharge device, or including particulate material
609	.Having baffle, partition or constricting means affecting discharge
610	..Partition
611	..Constriction means
612	...Substantially full length of discharge path
613	.Having electrode shield
614	..With anode shield
615	..Crater electrode with shield
616	..With positive ion or cathode shield
617	.Having spur electrode
618	.Having hollow cathode
619	.Negative or cathode glow device
620	.Having specified electrode spacing
621	.Having electrodes with geometrical relationship
622	.Discharge device with diverse electrodes
623	.Having electrode lead-in or electrode support sealed to envelope

WITH GAS OR VAPOR
.Having electrode lead-in or electrode support sealed to envelope
624 ..End cap seal
625 ..End plug seal
626 .Having lead-in shield
627 .Having electrode heated by space discharge current
628 ..Coil type
629 .Having resistance heated cathode
630 .Having electrode of alkali, alkaline or rare earth material
631 .Having particular electrode structure
632 ..Cathode or anode
633 .Electrode composition
634 .Envelope with particular structure
635 ..Envelope layer or coating
636 .Envelope composition
637 .With particular gas or vapor
638 ..With metal vapor
639 ...Mercury vapor
640 ....And rare earth metal
641 .....With rare gas
642 ....And rare gas
643 ..One or more rare gases
230 DISCHARGE DEVICE WITH POSITIVE ION EMITTER
231.01 FLUENT MATERIAL SUPPLY OR FLOW DIRECTING MEANS
231.11 .Lightning or surge arrester
231.21 ..Expulsion type
231.31 .Plasma
231.41 ..Arc discharge type
231.51 ...With tangential fluent supply
231.61 ...Electromagnetic output (i.e., light)
231.71 .Arc discharge lamp or radiation source
232 ELECTRODES IMMERSED IN LIQUID
233 INVOLVING PARTICULAR DEGREE OF VACUUM
234 ELECTRODE EXTERIOR TO ENVELOPE
235 IMPERFECT ELECTRICAL CONTACT BETWEEN ELECTRODES
236 STAND-BY ELECTRODE TYPE (WITH SPARE ELECTRODE)
237 WITH ELECTRODE REPLACEMENT MEANS OR DEMOUNTABLE
238 WITH SUPPORT AND/OR SPACING STRUCTURE FOR ELECTRODE AND/OR SHIELD
239 .For shield
240 ..Shield supported by electrode, electrode support or spacer
241 ...Extending across ends of plural discharge device electrodes
242 ..Shield supported by or forming part of envelope stem
243 .For plural electrodes of discharge device
244 ..Envelope supports or forms electrode
245 ...Plural discharge spaces formed by three or more electrodes
246 ...Electrode forms part of envelope
247 ....Hollow electrode with another electrode supported by end structure
248 ...Conductive envelope supports plural electrodes
249 ...Elongated envelope with electrodes spaced along length
250 ....With spacer between electrodes or electrode supports
251 ....Plural electrodes supported along the length of a wire, rod or tube
252 ...Support structure supported by the envelope
253 ....At spaced or opposed portions of envelope
254 .....At three or more portions of envelope
255 .....Same electrode supported by spaced or opposed portions
256 ....Insulating or ceramic support rod or tube
257 ....With spacer between electrode or electrode supports
258 .....Spacer between envelope and support or electrode
259 .....Insulating coating forms spacer
260 .....Plate or bar extending across ends of electrodes
261 ......Plates or bars at opposed ends of electrodes
262 .....Ceramic bead for joining parts
263 ....With indirectly heated cathode
264 ....With U-shaped, V-shaped or plural sections filament
265 ....Apertured electrode (e.g., grid) supported between two other electrodes
266 ....Stem or envelope structure
267 ..Plural rod electrodes
268 ..Insulating spacer between discharge electrodes
269 .With vibration damping device
270 .For indirectly heated cathode
271 .For filament
272 ..Plural filaments
273 ..Plural section filament
274 ..Supports supported by opposed parts of envelope
275 ..Insulator supports filament
276 ...Conductive member supports insulator
277 ...Insulating standard supports filament brackets or anchors
278 ..Tension device for filament
279 ..Support intermediate of filament ends
281 .Support mounted in or around aperture in conductive wall or plate
282 .Conductive envelope supports electrode
283 .Electrode supported by envelope
284 ..Electrode supporting member supported by envelope
285 ...Supporting wire, rod or tube supported by envelope
286 ....At spaced or opposed portions of envelope
287 ....Support collar surrounding envelope stem
288 ....Spacer between envelope and support or electrode
289 ....Ceramic or insulating support
290 ....Stem or envelope structure
291 ..Electrode formed by coating on envelope
292 .Supporting and/or spacing elements
293 DISCHARGING DEVICES WITH APERTURED ELECTRODE (E.G., GRID) INTERPOSED BETWEEN TWO ELECTRODES
294 .Non-uniformly spaced from another electrode
295 .Interposed electrode with non-uniform mesh area (e.g., variable mu)
296 .Plural interposed apertured electrodes
297 ..Serially arranged
298 ...Plural inter-electrode discharge spaces
299 ...Aligned apertures (e.g., beam power)
300 ...Three or more serially arranged
301 ..Plural inter-electrode discharge spaces
302 .Plural cathodes
303 .Three or more non-emissive electrodes (e.g., plural anodes)
304 .Plural-parallel-section cathode with electrode surrounding each section
305 DISCHARGE HEATED ANODE TYPE (E.G., CATHANODE)

306	DISCHARGE DEVICES HAVING THREE OR MORE ELECTRODES
307	.Four or more electrodes
308	.Discharge control electrode
309	DISCHARGE DEVICES HAVING A MULTIPOINTED OR SERRATED EDGE ELECTRODE
310	DISCHARGE DEVICES HAVING A THERMIONIC OR EMISSIVE CATHODE
311	DISCHARGE DEVICES HAVING AN ELECTRODE OF PARTICULAR MATERIAL
312	WITH CASING OF JACKET FOR ENVELOPE
313	WITH ELECTRICAL SHIELD OR STATIC CHARGE DISTRIBUTION MEANS
314	NON-REPAIRABLE
315	INCANDESCENT LAMPS
316	.Plural filaments or glowers
317	WITH ENVELOPE
318	.With base or connector
323	COMBINED
324	.With casing or jacket
325	MISCELLANEOUS DISCHARGE DEVICES
326	ELECTRODE AND SHIELD STRUCTURES
327	.Self-baking electrodes (e.g., Soederberg)
328	.Liquid electrode container
329	.Mosaic electrodes
331	.With lead wire or connector
332	..Inserted section or material
333	..Filament or wire shield or electrode
334	..Non-metallic electrode or shield
335	..Rod electrode or shield
336	.Point source cathodes
337	.Indirectly heated cathodes
338	..Plural separate cathode sections
339	..Interior emissive hollow cathodes
340	..Insulating material between heater and cathode
341	.Filament or resistance heated electrodes
342	..Non-inductive
343	..Plural wires or strands
344	..Coiled
345	..Coated
346 R	.Cathodes containing and/or coated with electron emissive material
346 DC	...Dispensator cathode
347	.Incandescible upon electron bombardment
348	.Foraminous electrodes (e.g., grids) or shields
349	..Non-uniform mesh area or non-straight electrodes or non-uniform cross-sectional area electrodes
350	..Rods, wire or mesh supported on rod or post
351	.Multi-pointed or serrated edge electrode
352	.Composite electrodes or shields
353	..With non-discharge-sustaining portion
354	..Cored rod
355	..Coated or laminated
356	.Tubular or hollow sleeve
357	.Rods
358	MISCELLANEOUS (E.G., ELECTROLYTIC LIGHT SOURCE)

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DIGEST

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DIG 7	Bombardment induced conductivity

CLASS 314 ELECTRIC LAMP AND DISCHARGE DEVICES, CONSUMABLE ELECTRODES

DECEMBER 1990

1 AUTOMATIC SUBSTITUTION OF DISCHARGE DEVICE, ELECTRODE OR LAMP
2 .With current-shifting switch
3 .Differential separation type
4 .Common electrode-operating type
5 ..Electrode magazine type
6 ..Current- and/or potential-actuated release
7 PLURAL DEVICES
8 .Series-connected
9 WITH SIGNAL, INDICATOR AND/OR ALARM
10 WTH AUTOMATIC SHUNT AND/OR CUTOUT
11 .Shunt circuit closing
12 ..Regulating magnet placed in the shunt
13 ..With compensating impedance
14 ...Feed-regulating mechanism, actuated switch
15 ..Current- and/or potential-actuated switch
16 ...Feed-regulating mechanism, actuated switch
17 .Switch-operated type
18 ..Current- and/or potential-actuated switch
19 ...Feed-regulating mechanism, switch-actuated type
20 WTH DISCHARGE-DEFLECTING MEANS
21 WITH AUXILIARY MATERIAL SUPPLY TO THE DISCHARGE
22 .Fluent material feed
23 WITH ELECTRODE TIP CLEANER OR FILM-PUNCTURING MEANS
24 .Repeated contact type
25 WITH ECONOMIZER
26 WITH VENTILATOR, FUME FLOW SHIELD, FUME CONDENSER AND/OR TEMPERATURE-MODIFYING MEANS
27 .Movable type, connected to the electrode or electrode-moving mechanism
28 .Ventilator, fume director and/or condenser
29 .Liquid-circulating type
30 .Radiating transmitter type
31 POLYPHASE A.C. SUPPLY
32 WITH TRANSFORMER IN SUPPLY LINE
33 THREE OR MORE SERIES-CONNECTED ELECTRODES
34 WITH AUXILIARY-STARTING ELECTRODE
35 WITH AUXILIARY-CONTROL ELECTRODE FOR THE ELECTRODE-MOVING MECHANISM
36 PLURAL CATHODE AND/OR ANODE TYPE
37 .Consumption feed type
38 .Interconnectd feed operator
39 OSCILLATORY AND/OR ROTARY ELECTRODE MOTION TYPE
40 .Interconnected feeding and oscillating and/or rotating mechanism
41 ..Rotary motion-type power supply
42 .Rotary electrode
43 ..Plural rotary electrode
44 DISK OR PLATE ELECTRODE TYPE
45 INCLINED OR PARALLEL ELECTRODES
46 .Pivoted electrode
47 ..Plural pivoted electrodes
48 ...Linear feed
49 ..Linear feed
50 .Interconnected feed operator
51 PLURAL MOVABLE ELECTRODES
52 .Plural electrode feeding
53 ..Interconnected operator
54 ...With separate movement of one electrode
55 ...With diverse rates of feed
56 ...Gear-, belt-, or chain-connected
57 MANUAL FEED
58 .With power drive
59 CONSUMPTION FEED TYPE
60 .Electrodes
61 FLUID TRANSMISSION
62 MOTOR SPEED-CONTROLLED
63 RADIANT ENERGY RESPONSIVE CONTROL TYPE
64 ELECTRIC DISCHARGE CONTROL CIRCUIT
65 WITH ELECTRODE SEPARATING MECHANISM AND FEEDING MECHANISM
66 .Electromagnetic separating
67 ..Electromagnetic feed
68 POSITIVE FEED
69 .Rotary electric motor
70 ..With motor-braking
71 ..With motor circuit impedance regulator
72 ...Switch-controlled motor circuit
73 ..Switch-controlled motor circuit
74 ...With regulation of switch operator
75 ..Auxiliary motor circuit current supply
76 ..Differential wound armature and/or field
77 .Pawl and ratchet
78 .Electromagnetic operator
79 .Power-transmission control
80 ..Gear train
81 ...Reversible
82 ESCAPEMENT FEED CONTROL
83 DETENT OR BRAKE-CONTROLLED ROTARY FEED MEMBER OR GEAR
84 .Movable feed frame type
85 ..Pivoted frame
86 ...Multiple magnet-operated
87 .Locked during separating stroke
88 ..Positive-acting brake or detent
89 THERMOSTATIC OPERATOR OR CONTROLLER
90 .With mechanical energy-storing device
91 WITH RESILIENT OR LOST MOTION CONNECTION
92 WITH MECHANICAL ENERGY-STORING DEVICE
93 .Rod gripper biasing type
94 .With electric motive power
95 ..Biased lever
96 ...Spring-biased
97 ..Spring-biased
98 WITH ELECTRODE COUNTERBALANCE
99 WITH RETARDER
100 .Retarded feeding type
101 RELEASABLE ELECTRODE OR RODGRIPPER TYPE
102 .Plural clutches
103 .With separation limit stop
104 .Magnetic clutch
105 .Electromagnetically operated
106 ..Plural electromagnet coils
107 ...Three or more
108 ...Interconnected lever systems
109 ....Common oscillating lever or armature
110 ...Coaxial coils
111 ..Concentric magnet and electrode
112 SLIDING ELECTRODE TYPE
113 ELECTROMAGNETIC OPERATOR AND/OR FEED-CONTROLLING
114 .With control of the electromagnet circuit
115 ..With current or voltage regulator
116 ...Current- or potential-responsive
117 ..Shunt magnet control
118 ...With control of series magnet
119 .With electromagnetically operated separating
120 ..Movable coil
121 ..Plural coils
122 ...Three or more
123 ...Interconnected lever system
124 ....Common oscillating lever or armature
125 ...Coaxial coils
126 ...Opposed magnetic flux type
127 ..Concentric magnet and electrode
128 .Vibration-damped electromagnet
129 WITH CURRENT-TRANSFER DEVICE
130 FRAMES AND ELECTRODE SUPPORTS
131 .With electric switch

FRAMES AND ELECTRODE SUPPORTS
132 .With electric impedance
133 .With electrode guides
134 .Adjustable electrode supports
135 WITH CURRENT OR VOLTAGE REGULATOR
136 MISCELLANEOUS

CLASS 315 ELECTRIC LAMP AND DISCHARGE DEVICES, SYSTEMS

DECEMBER 1990

1	CATHODE RAY TUBE CIRCUITS
3	.Combined cathode ray tube and circuit element structure
3.5	..Traveling wave tube with delay type transmission line
3.6	...Line with plural characteristics or plural lines
4	..Inductor or distributed parameter type inductive structure
5	...Ray passes in or through a hollow distributed parameter device
5.11	....With a secondary emission stage
5.12	.....Secondary emission passes through or in the hollow device
5.13	....With a magnetron
5.14	....Plural rays pass through or in the hollow device
5.15	.....Rays merged at the hollow device
5.16	.....Plural hollow devices
5.17	......Feed-back by ray
5.18	....Ray returns to the hollow device, e.g., reflex type
5.19	.....By same path and/or to same aperture
5.21	......Device tunable
5.22	.......Device has a flexible wall
5.23	........Thermally controlled
5.24	....Deflecting or reflecting the ray
5.25	.....Ray sweeps over an aperture or slot in the hollow device
5.26	.....Device deflects the ray
5.27	......Plural hollow devices
5.28	.....Plural hollow devices
5.29	....Ray has appreciable transverse electrical dimension and/or significant shape
5.31	.....Hollow ray
5.32	.....Disk shaped ray
5.33	....Device also a ray anode or cathode
5.34	....Focusing and/or concentrating the ray
5.35	.....By magnetic field
5.36	....Device removable from its grids
5.37	....Device has particular grid structure
5.38	....With particular collector or anode structure
5.39	....Plural hollow devices
5.41	.....Accelerating or decelerating the ray between the hollow devices
5.42	.....Devices excited to accelerate the ray across their gaps, e.g., synchrotrons
5.43	.....Devices of different resonance frequency
5.44	.....Feed-back connection between the hollow devices
5.45	......Three hollow devices
5.46	.....Device tunable
5.47	......Gang tuned hollow devices
5.48	......Device has a flexible wall
5.49	.....Three hollow devices
5.51	....Plural gaps in the hollow device
5.52	....Device has a re-entrant portion surrounding the ray
5.53	....Device tunable
5.54	.....Device has a flexible wall
7	...Connected to the deflecting electrodes
8	.Compensating for stray deflecting fields
8.51	.Pulse storing
8.61	..Plural cathode ray tubes or ray type tubes
9	.Plural cathode ray tubes in the circuit
10	.With radiant energy sensitive control means
11	..With secondary emission stage in the cathode ray tube
12.1	.With secondary emission stage in the cathode ray tube
13.1	.Plural ray type tube
13.11	..Storage tubes
14	.Plural concentrating, accelerating and/or de-accelerating stages
15	..Three or more stages
16	...Intermediate stage at lower potential
17	..With ray deflecting stage interposed between plural concentrating or accelerating and/or de-accelerating stage or co-extensive with one such stage
364	.Cathode ray deflections circuits
365	..Symbol generator
366	..For flat cathode ray tube
367	..Including a digital to analog device
368	..Including color convergence control
369	..Target controls deflection circuit
370	..With ray deflection distortion correction or reduction
371	...By modulation of deflection waveform
372	..For cathode ray tube having plural targets
373	...Targets radially about cathode
374	...Targets in single plane
375	..For plural phosphor target tube
376	...With post deflection phosphor selection
377	..With marker
378	..Circular, spiral or radial sweeps
379	..With additional control of cathode ray
380	...Control only at turn-on or turn-off of circuit
381	....Circuits controls grid-cathode circuit of tube
382	...With focusing of ray
382.1	....For television
383	...Intensity control of ray
384	....Ray blanking
385	....Ray unblanking
386	....With ray control responsive to deflection circuit
387	..Including feedback circuit
388	...Plural feedback circuits
389	...Negative feedback
390	....Tube type circuit
391	..Plural deflection circuits
392	...Plural waveform display circuits
393	...Inter-connected sweep circuits
394	...Plural deflections in one plane
395	..Plural potentials or currents applied to deflection member
396	...Push-pull deflection circuit
397	....Coil type circuit
398	...With cathode ray centering
399	..Deflection coil circuit
400	...Including a saturable element
401	...Including a temperature responsive element
402	...Including a voltage dependent resistor
403	...Including an amplifier
404	....Tube type amplifier
405	.....With transformer connecting amplifier to coil
406	......With power recovery circuit
407	.....With diode or amplifier across coil
408	...Including solid state switch
409	..Including a discharge device
410	...With device discharging a condenser
30	.Ray modulation
411	.Power supply from deflection circuit source
32	COMBINED LOAD DEVICE OR LOAD DEVICE TEMPERATURE MODIFYING MEANS AND ELECTRICAL CIRCUIT DEVICE STRUCTURE
33	.Portable self-contained

COMBINED LOAD DEVICE OR LOAD DEVICE TEMPERATURE MODIFYING MEANS AND ELECTRICAL CIRCUIT DEVICE STRUCTURE
34 .With antenna
35 .Plural discharge device loads
36 ..Series connected discharge devices
37 ..Cathode-anode circuit connected to the discharge control electrode of another discharge device load (e.g., cascade)
38 ..Corresponding electrodes connected by a circuit impedance (e.g., push pull)
39 .Discharge device load with distributed parameter type transmission line (e.g., wave guide, coaxial cable)
39.3 ..Traveling wave type with delay type transmission line
39.51 .Distributed parameter resonator type magnetron
39.53 ..With output coupling means
39.55 ..Variable tuning
39.57 ...Electron emission type
39.59 ...Thermal or magnetic actuator
39.61 ...Movable tuning element (e.g., slug)
39.63 ..With control electrode, secondary emitter, or auxiliary anode or cathode
39.65 ..Having diverse size resonators
39.67 ..Tubular anode with eccentric or axially displaced cathode
39.69 ..With strapping for resonant structure
39.71 ..Magnetic field generating and pole structure
39.73 ..Interdigital electrode
39.75 ..Anode with plural cavities
39.77 ..With resonant cavity coupled to anode
40 .Electrode formed as inductive impedance
41 .Inductive impedance connected between electrodes of a discharge device load
42 ..Connected to plural anodes or plural cathodes
43 ..Connected to control electrode
44 ...With capacitive impedance connected to the control electrode
45 ..With diverse type impedance
46 .Filament, electric heater, or resistance in shunt with the discharge electrodes of a discharge device load
47 ..Automatic switch in the shunt circuit
48 ..Cathode or cathode heater in the shunt circuit
49 .Filament or electric heater in series with a discharge device load
50 .Load device temperature modifying means combined with or forming circuit impedance means
51 .Plural circuit elements
52 ..Plural impedance elements
53 ...Diverse types of impedances
54 ...Plural inductive impedances
55 .Electric generator or piezoelectric device
56 .Discharge device load
57 ..Discharge device and transformer
58 ..Discharge device and circuit impedance
59 ...Impedance connected between two electrodes
60 ....Impedance connected to an auxiliary starting electrode
61 ....Discharge control discharge device
62 ...Inductive impedance
63 ..Discharge control discharge load
64 .Multiple filament load devices
65 ..Automatic substitution of the filament
66 ..Series connected filaments
67 ..Diverse resistance filaments
68 ..Three or more controlled filament circuits
69 ..Plural filaments energized in parallel
70 .Load device and transformer
71 .Load device and impedance
72 .Load device and periodic electric switch
73 .Electric switch inside evacuated or gas filled envelope
74 .Automatic shunt circuit closing or cut-out switch
75 ..Shunt circuit closing
76 SPECIAL APPLICATION
77 .Vehicle
78 ..Vehicle motor or vehicle motion driven generator
79 ..Vehicle or engine speed controlled
80 ..Load device controller combined with vehicle controller
81 ...Steering mechanism controlled
82 ..Head light systems
83 ...Alternate circuit closing
84 .Door or closure controlled load device
84.51 PULSE STORING SYSTEMS OF THE GASEOUS DISCHARGE TUBE TYPE
84.61 .With plural cathode or anode tube
85 WITH ELECTROMAGNETIC WAVE RADIATION PREVENTING OR SHIELDING MEANS
86 AUTOMATIC SUBSTITUTION OF THE POWER SUPPLY
87 .With load device or electrode substitution
88 AUTOMATIC SUBSTITUTION OF THE LOAD DEVICE OR ELECTRODE
89 .Plural substitution of load devices or electrodes
90 .Plural load devices with selective substitution of load device or electrode
91 .Over-voltage or over-current controlled substitution
92 .Diverse type load device or electrode substituted
93 .With current shifting switch
94 WITH CATHODE OR CATHODE HEATER SUPPLY CIRCUIT
95 .Plural load device systems
96 ..Series connected cathodes or heaters
97 ..Pulsating or A.C. supply to the cathode or heater circuit
98 .Plural cathodes or heaters in the load device
99 ..Series connected cathodes or heaters
100 ...Thermostatic switch in the series circuit
101 .Discharge device and/or rectifier in the cathode or heater circuit
102 .Delayed application of the discharge potential
103 ..With surge generator in the discharge circuit
104 ..Thermostatic controlled delaying means
105 .Pulsating or A.C. supply to the cathode or heater circuit
106 ..Automatic cut-out or voltage regulator in the cathode or heater circuit
107 .Automatic cut-out or voltage regulator in the cathode or heater circuit
108 CONFINED GAS OR VAPOR TYPE LOAD DEVICE WITH PRESSURE REGULATING MEANS
109 .Auxiliary discharge type
110 .Valve controlled
111.01 DISCHARGE DEVICE LOAD WITH FLUENT MATERIAL SUPPLY TO THE DISCHARGE SPACE
111.11 .With tangential fluent material supply
111.21 .Plasma generating
111.31 ..With extraction electrode
111.41 ..With magnetic field

	DISCHARGE DEVICE LOAD WITH FLUENT MATERIAL SUPPLY TO THE DISCHARGE SPACE
	.Plasma generating
	..With magnetic field
111.51	...Induction type
111.61	...Acceleration
111.71	...Plasma containment
111.81	.Electron or ion source
111.91	..Gas ionization type (e.g., ion pump or gauge source)
112	WITH LOAD DEVICE TEMPERATURE MODIFIER
113	.Plural load device systems
114	..Electric heater for the load devices
115	.Electric heater for the load device
116	..Automatic cut-out or voltage regulator for the heater circuit
117	.Automatic control of the temperature modifier
118	.Load device circuit controlled by the temperature modifying medium
119	WITH AUTOMATIC SHUNT AND/OR CUTOUT
120	.Combined with signal, indicator or alarm
121	.Plural load device systems
122	..Series connected load devices
123	.Plural shunts and/or cut-outs
124	.Auxiliary electrode controlled
125	.Shunt circuit closing
126	..With compensating impedance
127	.Supply circuit current and/or potential actuated switch
128	..Plural switch operating means
129	WITH SIGNAL, INDICATOR OR ALARM
130	.Plural load device systems
131	..Selective indication of the load device
132	...Plural signals, indicators or alarms
133	.Plural signals, indicators or alarms
134	.Radiant energy responsive control type
135	.Discharge device and/or rectifier in the signal circuit
136	.Electrically operated switch controlling the signal circuit
137	POLYPHASE A.C. SUPPLY
138	.M phase to N phase (e.g., phase splitters)
139	..Polyphase supply circuit
140	...Phase multiplying
141	.Transformer in the supply circuit
142	..With interphase transformer in the supply circuit
143	..Convertible transformer connections
144	..Plural load devices
145	..Plural cathode and/or anode load device
146	.Plural discharge control discharge device load devices
147	.Plural cathode and/or anode discharge device load
148	..Discharge control discharge device
149	WITH RADIANT ENERGY SENSITIVE CONTROL MEANS
150	.Radiant energy responsive load device
151	.Load device irradiating the radiant energy responsive device
152	.Plural load devices
153	..Selective energization of the load devices
154	...Selective electric switch controlled by the radiant energy responsive device
155	.Plural radiant energy responsive devices
156	.Radiant energy control of an electric discharge device in the supply circuit the load device
157	.Discharge control discharge device load controlled by the radiant energy responsive device
158	.Radiant energy controlled regulation of the current supply for the load device
159	.Electric switch controlled by the radiant energy responsive device
160	PLURAL POWER SUPPLIES
161	.Plural load devices
162	..Diverse type load devices
163	...Simultaneous application of diverse type current supplies to a load device
164	..Series connected current supplies
165	..Diverse type current supplies
166	...Simultaneous application to a load device
167	.Plural cathode and/or anode load device
168	..Diverse type current supplies to auxiliary and principal electrodes
169.1	..Diverse type energizing or bias supplies to different electrodes
169.2	...Including shifting, of register, counter or display
169.3	...Electroluminescent device
169.4	...Gas display panel device
170	.Series connected current supplies
171	.Discharge device and/or rectifier in one of the supply circuits
172	.Periodic switch in one of the supply circuits
173	.Condenser in one of the supply circuits
174	.Plural diverse pulsating or A.C. supplies
175	.Diverse type current supplies
176	..Simultaneous application to the load device
177	LOAD DEVICE IN THE PRIMARY AND SECONDARY CIRCUIT OF THE SUPPLY TRANSFORMER
178	PLURAL DIVERSE TYPE LOAD DEVICES
179	.Series connected diverse type load devices
180	..Plural diverse discharge device load
181	...Asymmetrical discharge device load
182	.Electric discharge device load
183	..Plural diverse discharge device loads
184	THREE OR MORE LOAD DEVICES CONNECTED BETWEEN DIVERSE PAIRS OF PAIRED CONDUCTORS
185 R	PLURAL SERIES CONNECTED LOAD DEVICES
185 S	..Christmas lights
186	.Periodic switch in the supply circuit
187	.Condenser in the supply circuit
188	..Condenser in shunt to load and supply
189	.Discharge device loads
190	..Asymmetrical discharge device loads
191	.Convertible to parallel connected
192	.Combined with parallel connected load device
193	.Electric switch controlled load device
194	REGULATION OF THE CONTROL CURRENT AND/OR POTENTIAL APPLIED TO DISCHARGE CONTROL DISCHARGE DEVICE LOADS BY PHASE SHIFTING MEANS
195	.Plural load device systems
196	..Inverse parallel connected asymmetric load devices
197	...Discharge control discharge device in the control circuit
198	..Discharge control discharge device in the control circuit
199	.Discharge control discharge device in the control circuit
200 R	DISCHARGE DEVICE AND/OR RECTIFIER IN THE SUPPLY CIRCUIT
200 A	..Flashers
201	.Plural load device systems

	DISCHARGE DEVICE AND/OR RECTIFIER IN THE SUPPLY CIRCUIT
202	.Plural cathode and/or anode discharge device load
203	..Discharge device or rectifier in the auxiliary starting electrode circuit
204	...Discharge control discharge device in the auxiliary electrode circuit
205	.Plural discharge devices and/or rectifiers in the supply circuit
206	.Discharge device and/or rectifier in the primary circuit of the supply transformer
207	.Discharge device and/or rectifier in shunt to the load device
208	.Discharge control discharge device in the supply circuit
209 R	PERIODIC SWITCH IN THE SUPPLY CIRCUIT
209 T	..Transistorized ignition systems
209 CD	..Capacitor dischargeneous ignition systems
209 M	..Miscellaneous ignition systems
209 PZ	..Piezoelectric ignition systems
209 SC	..Silicon controlled rectifier ignition
210	.Plural load device systems
211	..Distributor type periodic switch means
212	...Transformer in the supply circuit
213	....Distributor switch means in the primary circuits of plural transformers
214	....With additional periodic switch in the primary circuit
215	...With additional periodic switch in the distributor switch means circuit
216	...Plural electrically operated switches
217	..Periodic switch selectively connectable to plural load device circuits
218	.Magneto-electric generator supply
219	.Periodic switch in the primary circuit of the supply transformer
220	..Plural transformers in the supply circuit
221	..Secondary conductively connected to the primary
222	..Plural interrupted transformer coil circuits
223	..Condenser or inductance in the primary circuit
224	.Impedance or current regulator in the supply circuit
225	.Periodic switch cut-out
226	.Plural periodic switches or multiple contact periodic switch
227 R	CONDENSER IN THE SUPPLY CIRCUIT
227 A	..Arc machining
228	.Plural load device systems
229	..Condenser connected to plural cathodes or anodes of asymmetrical discharge device loads
230	..Discharge control discharge device loads
231	..Plural series connected condenser and load device circuits
232	..Condenser in shunt to load and supply
233	.Plural cathode and/or anode discharge device load
234	..Condenser in the auxiliary starting electrode circuit
235	..Condenser connected to plural cathodes or anodes
236	.Electromagnetic influenced discharge device load
237	.Discharge control discharge device load
238	..Condenser in the control circuit
239	.Transformer in the condenser load device circuit
240	.Electric switch in the condenser circuit
241 R	.Condenser in shunt to the load device and the supply
241 P	...Photoflash
241 S	...Strobe lights
242	..With an inductance in the circuit
243	...Inductance in series with the load device, and the supply
244	.Inductance in the condenser circuit
245	.Resistance in the condenser circuit
246	PULSATING OR A.C. SUPPLY
247	.With power factor control device
248	.Induction type discharge device load
249	.Potential node type discharge device load
250	.Plural load device systems
251	..Inverse parallel connected asymmetrical discharge device loads
252	..Discharge control discharge device loads
253	..Full wave systems with asymmetrical discharge device loads
254	..Transformer in the supply circuit
255	...Plural transformers in the supply circuit
256	....Primaries in series
257	...With plural secondary or tapped secondary
258	..Inductance in the supply circuit
259	...Variable inductance
260	.Plural cathode and/or anode discharge device load
261	..Auxiliary starting electrode type discharge device load
262	...Transformer or auxiliary winding in the auxiliary electrode circuit
263	...Inductance or potential surge generator in the auxiliary electrode circuit
264	...Impedance in the auxiliary electrode circuit
265	..Full wave type system
266	...Transformer in the supply circuit
267	.Electromagnetic influenced discharge device load
268	.Discharge control discharge device load
269	..With plural discharge control devices
270	..Plural control potentials
271	...Plural pulsating and/or A.C. potentials
272	..Rectifier and/or discharge device in the control circuit
273	...With condenser in the control circuit
274	..Transformer in the control circuit
275	..Condenser in the control circuit
276	.Transformer in the supply circuit
277	..Plural transformers in the supply circuit
278	..Three or more coil type transformers
279	..Current regulator in the primary circuit
280	..Convertible to inductance
281	..Relatively movable core and coil type transformer
282	..Regulating transformer
283	.Inductance in the supply circuit
284	..Variable inductance
285	...Relatively movable core and coil type inductance
286	....Biased movable part with supply current controlled movement
287	.Periodic type current and/or voltage regulator in the supply circuit
288	THREE OR MORE WIRE DISTRIBUTION SYSTEMS
289	SURGE GENERATOR OR INDUCTANCE IN THE SUPPLY CIRCUIT

SURGE GENERATOR OR INDUCTANCE IN THE SUPPLY CIRCUIT
290 .Circuit interrupter in the inductance circuit
291 CURRENT AND/OR VOLTAGE REGULATION
292 .Keyboard operated or pattern controlled regulator
293 .Pre-selectable regulator systems
294 .Plural load device regulation
295 ..Regulator selectively connectable to plural circuits
296 ..Inverse control of load devices
297 ..Automatic regulation
298 ..Mechanically connected regulators
299 .Plural regulators
300 ..Current generator control
301 ..Plural automatic regulators
302 .Current generator control
303 ..Control of the prime mover
304 ..Plural field type generator
305 ...Three or more fields
306 .Regulator in shunt to the load device
307 .Automatic regulation
308 ..Regulator responsive to plural conditions
309 ..Thermal responsive regulator
310 ..Shunted impedance type regulator
311 ..Variable impedance type regulator
312 PLURAL LOAD DEVICE SYSTEMS
313 .Electric switch in the supply circuit
314 ..Pre-selectable switching systems
315 ...Electrically controlled load device switch
316 ..Keyboard or pattern controlled switch
317 ..Three or more controlled load device circuits
318 ...Group control systems
319 ....Four or more groups
320 ..Plural switches
321 ...Master circuit closing switch
322 ..Alternate circuit closing
323 .Sequential starting
324 .Plural discharge device loads
325 ..Discharge control discharge device loads
326 DISCHARGE DEVICE LOAD
327 .Discharge drawing type discharge device
328 ..Tilting discharge device
329 ...Electrically controlled tilting
330 ..Auxiliary starting electrode type
331 ...Movable auxiliary starting electrode
332 ....Automatic switch in the electrode moving device circuit
333 ..Automatic cut-out for the electrode moving device circuit
334 .Plural cathode and/or anode discharge device load
335 ..Auxiliary starting electrode type discharge device
336 ...Plural auxiliary starting electrode
337 ..Diverse potentials for the discharge electrodes
338 ..Electromagnetic influenced discharge device
339 ..Discharge control discharge device load
340 .With de-ionizing means in the cathodeanode circuit
341 .With plural discharge control devices
342 ..Diverse types
343 ..Plural electromagnetic devices
344 .Electromagnetic influenced discharge device
345 ..Rail type discharge device load
346 ..Plural current supply to the electromagnet
347 ..Series connected with the load device
348 ..Pulsating or A.C. supply to the electromagnet
349 .Discharge control discharge device load
350 ..Plural control currents and/or potentials
351 ...Plural pulsating or A.C. currents and/or potentials
352 ..Rectifier and/or discharge device in the control circuit
353 ...With condenser in the control circuit
354 ..Transformer in the control circuit
355 ..Condenser in the control circuit
356 ...Inductance in the control circuit
357 .Movable electrode discharge device
358 .Plural gases or vapors in the discharge device
359 PYRO-ELECTRIC DEVICE LOAD
360 TIME-CONTROLLED
361 PLURAL CONTROL STATIONS
362 ELECTRIC SWITCH IN THE SUPPLY CIRCUIT
363 MISCELLANEOUS SYSTEMS
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DIGESTS
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DIG 1 Fluorescent lamp circuits with more than two principle electrodes
DIG 2 High frequency starting operation for fluorescent lamp
DIG 3 Circuit for ion gauges and pressure gauges
DIG 4 Dimming circuit for fluorescent lamps
DIG 5 Starting and operating circuit for fluorescent lamp
DIG 7 Starting and control circuits for gas discharge lamp using transistors

1 ELECTRIC MOTOR WITH NONMOTOR DRIVING MEANS (E.G., AXLE DRIVE, MANUAL DRIVE)
2 .Manual driving means
3 WITH PARTICULAR MOTOR-DRIVEN LOAD DEVICE
4 .Plural, diverse or diversely controlled load device
5 ..Plural motor drive
6 .Tension-maintaining type of motor-control system
7 ..Plural, diverse or diversely controlled motors
8 .Plural, diverse or diversely controlled driving motors (e.g., driving differential gearing)
9 .Power- or motion-transmitting mechanism
10 ..Reversible drive mechanism
11 ..Variable speed mechanism
12 ...Gearing
13 ....Differential type
14 ..Motion-converting mechanism
15 ..Mechanical gearing
16 SUPPLIED OR CONTROLLED BY SPACE-TRANSMITTED ELECTROMAGNETIC OR ELECTROSTATIC ENERGY (E.G., BY RADIO)
17 PORTABLE-MOUNTED MOTOR AND/OR PORTABLE-MOUNTED ELECTRICAL SYSTEMS THEREFOR
560 POSITIONAL SERVO SYSTEMS (E.G., SERVOMECHANISMS)
561 .Adaptive or optimizing systems including "bang-bang" servos
562 .Time-sharing or multiplexing systems
563 .With protective or reliability increasing features (e.g., "fail-safe" systems)
564 .."Redundant" operating channels
565 ..Monitoring systems
566 ..Maneuver, force, or load-limiting
567 .Program- or pattern-controlled systems
568.1 ..With program recording or composing means
568.11 ...Multifunction manipulator (i.e., Robot)
568.12 ....Mobile robot
568.13 ....With particular program teaching method
568.14 .....Manual lead through
568.15 ....With particular interpolation means
568.16 ....With particular sensing device
568.17 ....With multimode control (e.g., course-fine, position-force, etc.)
568.18 .....Including velocity control
568.19 ....With particular coordinate transformation means
568.2 ....With plural control systems (e.g., the interaction of plural processors to control the plural joints of a single robot):
568.21 .....Including end effector (e.g., gripping jaw, micromanipulator, etc.)
568.22 ....With particular compensation (e.g., gain, offset, etc.)
568.23 .....Including program modification
568.24 ....With reliability enhancement means (e.g., monitoring, redundant circuits, etc.)
568.25 .....Including display device
569 ..Digital or numerical systems
570 ...Contouring systems
571 ....With "feed-rate" control
572 ....With "zero-offset" or tool radius correction
573 ....With interpolating means
574 ....Multiple axes point to point systems
575 ..Multiple axes analog systems
576 ...Nonmechanical line, seam or edge followers
577 ....Optical or photoelectric line followers
578 ...Cam or template followers
579 ...Multiple pass systems
580 .Vehicular guidance systems with single axis control
581 ..Radio-controlled
582 ..Celestial navigation
583 ..Landing systems
584 ..Altitude or pitch control
585 ..Roll control
586 ..Yaw control
587 ..Land vehicles
588 ..Marine vehicles
589 ...Submarine and torpedo systems
590 .Multiple mode systems
591 ..With mode-engagement features (e.g., manual to automatic)
592 ..Fine and coarse systems
593 ...Separate fine and coarse motors
594 ...Digital systems
595 ...Multiple speed synchro systems
596 ..Combined "on-off" and proportional control
597 ..Slewing systems
598 ...With a separate slewing motor
599 .Pulse-width modulated power input to motor (e.g., "duty cycle" systems)
600 .Digital or numerical systems
601 ..Digital comparison
602 ...Commutating switch-type encoder
603 ..Pulse-counting systems
604 ..Analogue comparison
605 ...Synchro or resolver (e.g., transmitter simulators)
606 .Frequency- or phase-modulated systems
607 ..Frequency comparison
608 ..Phase comparison
609 ."Reset" systems (P.I.)
610 ..With rate (P. I. D.) (e.g., reset windup prevention)
611 .With stabilizing features (e.g., anti-hunting, damping)
612 ..Electric braking near balance (e.g., dynamic)
613 ...D.C. in A.C. windings
614 ..Friction-braking near balance including magnetic or eddy current brakes
615 ..By auxiliary feedback loop
616 ...Rate feedback
617 ....Variable rate feedback
618 ....Tachometer feedback
619 ..Variable gain bandwidth
620 ..Nonlinear circuits
621 ..Lead or lag networks
622 ...A.C. networks
623 ..Load stabilization (e.g., viscous, magnetic or friction dampers)
624 ..By deadband at null (e.g., threshold circuits)
625 .Plural servomotors
626 .Limit or end-stop control
627 ..Secto-scanning systems
628 ."Feedback" systems
629 .Unwanted harmonic or voltage component elimination quadrature rejection systems
630 .Antibacklash systems (e.g., with unidirectional approach to balance)
631 .Antistatic friction features (e.g., "dither" voltage)
632 .With compensating features
633 .."Two-cycle error" compensation
634 ..Temperature compensation
635 .With signal-, voltage-, or current-limiting

POSITIONAL SERVO SYSTEMS (E.G., SERVOMECHANISMS)
636 ."Sampling" systems including miscellaneous "sampled data" control systems
637 .Analog computation
638 .With particular "error-detecting" means
639 ..Plural, diverse conditions
640 ..Photoelectric or optical-type measuring instruments
641 ..With particular temperature measuring instrument
642 ..With liquid level measuring instruments
643 ..With moisture content or wetness measuring instruments
644 ..With flow measuring instruments
645 ..With fluid pressure measuring instruments
646 ..With force or weight measuring instruments
647 ..With magnetic field measuring instruments
648 ..With inertial, direction or inclination measuring instrument
649 ...Stable platforms
650 ..With current, voltage or electrical power measuring instruments
651 ..With acceleration measuring instruments
652 ..With particular position measuring instruments
653 ...Magnetic transducers
654 ...Synchro control transmitter-transformer systems
655 ....With synchro differential
656 ...Differential transformer systems
657 ....Linear differential transformer
658 ...."E" type transformer
659 ...."Microsyn" type
660 ...."Inductosyn" systems
661 ....Resolver systems
662 ...Variable capacitor systems
663 ...Potentiometer systems including autotransformers and Wheatstone bridges
664 ....Minor arc seeking
665 ....Continuous rotation, unlimited range
666 ....Controlled tap and slidewire
667 ....With a bridge in the feedback circuit
668 .....Recalibrating systems
669 ...Standing wave
670 ...Contact resistance
671 .With particular motor control system responsive to the "actuating signal"
672 ..Discontinuous or "on-off" control
673 ...Seeking switch type
674 ...Wheatstone bridge type
675 ..One transmitter or controller element follows another
676 ..Transmitter or controller element returned (e.g., force balance systems)
677 ..With particular servoamplifier
678 ...Differential amplifier
679 ...Diverse types of amplifiers in different stage
680 ...Magnetic servoamplifiers
681 ...Solid-state servoamplifiers
682 ...Rotating amplifier (e.g., "Ward Leonard" control)
683 ..With particular phase discriminator
684 ..With particular modulator or detector (e.g., choppers)
685 .."Step-by-step" motors in closed-loop servos
686 ..Reciprocating or oscillating motors
687 ..Linear movement motors
688 ..Shaded pole motors
689 Torquing motors
690 SELF-SYNCHRONOUS TYPE OF MOTOR
691 .With means to amplify transmitter signals
692 .Having induction or "selsyn" type transmitter
693 .Having impedance-type transmitter
694 .Having commutated dynamoelectric machine transmitter
695 .Having commutating switch-type transmitter
696 OPEN-LOOP STEPPING MOTOR CONTROL SYSTEMS
34 PLURAL, DIVERSE OR DIVERSELY CONTROLLED ELECTRIC MOTORS
35 .Motors with diverse motions (e.g., reciprocating and rotary motors)
37 .Plural reciprocating or oscillating motors
38 .Plural linear-movement motors
39 .Work and feed motors (e.g., indexing)
40 .Motor biased against rotation
41 .Having electrical synchronizing interconnections
42 ..Between windings on auxiliary dynamo-electric machines
43 ..D.C. or A.C. commutator motors with slip rings
44 ..Between induction motor secondaries
45 .Mechanically coupled in fixed ratio of movement
46 ..Motors having unlike operating characteristics
47 ...Synchronous and nonsynchronous motors
48 ..Mechanically coupled in torque opposition
49 .Motors electrically connected in cascade or tandem
50 ..With means for effecting other motor interconnections
51 .Plural, diverse motor controls for different motors
52 .Slipping and/or racing control for electric motors
53 .Plural, diverse motor controls
54 ..Motor-reversing
55 ...With running-speed control
56 ....And braking
57 ...And braking
58 ...And acceleration control
59 ..Running-speed control
60 ...And braking
61 ...And acceleration control
62 ...And automatic starting and/or stopping and/or with time delay
63 ..Braking
64 ..Acceleration control
65 .Motor-reversing
66 .Running-speed control
67 ..Diverse speeds for different motors
68 ..Relative motor speed control
69 ...With speed-difference detector
70 ....Electrical-type detectors
71 .....Voltage and/or current difference detector
72 .....Dynamoelectric machine detector
73 .....Synchronously operated impedance detectors
74 .....Synchronously actuated switch detectors
75 ......Plural switches connected in series
76 ....Differential-gearing detector
77 ...Controlling motor speed in response to speed of another motor

PLURAL, DIVERSE OR DIVERSELY CONTROLLED ELECTRIC MOTORS
.Running-speed control
..Relative motor speed control
...Controlling motor speed in response to speed of another motor
78 ....Controlling A.C. frequency or rate of electrical impulses to other motor
79 ...Control of both armature (or primary) and field (or secondary) circuits
80 ...Armature or primary circuit control
81 ...Field secondary circuit control
82 ..Armature or primary circuit control
83 ...Series-parallel armature circuit connections
84 ..Field or secondary circuit control
85 .Synchronizing or phasing control
86 .Braking
87 ..Motor used as braking generator (dynamic braking)
88 ...Load or current division during braking
89 ...Motor as exciter for another motor
90 .Acceleration control
91 ..Accelerating motors in succession or selectively
92 ..Control of both armature (or primary) and field (or secondary) circuits
93 ...Series-parallel connected armature or primary circuits
94 ..Armature or primary circuit control
95 ...Series-parallel connections
96 ....With armature circuit impedance
97 ..Field or secondary circuit control
98 .Load control
99 ..Fixed ratio of load or current division
100 ...By field or secondary circuit control
101 .Starting and/or stopping
102 ..Sequential or successive starting and/or stopping
103 ..Selective starting and/or stopping
104 ..Armature (or primary) circuit control
105 .Plural, diverse or diversely controlled sources of armature (or primary) supply
106 ..Diverse sources
107 ...A.C. and D.C.
108 ....Different voltages
109 ...Different voltages
110 ...Different frequencies
111 .Series-parallel connected motors
112 .Parallel connected motors
113 .Series connected motors
114 IMPACT, MECHANICAL SHOCK, OR VIBRATION-PRODUCING MOTORS
115 MOTOR WITH DIVERSE MOTIONS (E.G., ROTARY AND RECIPROCATING)
116 NONMAGNETIC MOTOR
117 .Thermoelectric motor
118 MAGNETOSTRICTIVE MOTOR
119 RECIPROCATING OR OSCILLATING MOTOR
120 .Stopping after predetermined number of reciprocations or cycles (including single cycle)
121 .Having means to produce a progressing or traveling motor field flux
122 .Plural, diverse or diversely controlled motor windings
123 ..Polyphase or diverse or diversely controlled sources of motor supply
124 ...A.C. and D.C. sources
125 ..Unidirectionally conductive devices in energizing circuit
126 .Energizing winding circuit control
127 ..Automatic in response to predetermined position, movement or condition in or of the motor or driven device
128 ...Noise, sound, vibration, movement or position of motor
129 ..By means for producing periodic electrical pulses in the energizing circuit
130 ...Electrical oscillation or condenser charging and/or discharging circuits
131 ...Motor or escapement-controlled means
132 ..By space-discharge or unidirectionally conductive devices in energizing circuit
133 ..By impedance devices in energizing circuit
134 ..By circuit making and/or braking devices
135 LINEAR-MOVEMENT MOTORS
136 AUXILIARY MEANS FOR PRODUCING MECHANICAL STARTING OR ACCELERATING TORQUE
137 .By auxiliary motor
138 SPACE-DISCHARGE-DEVICE COMMUTATED MOTOR
139 BATTERY-FED MOTOR SYSTEMS
140 GENERATOR-FED MOTOR SYSTEMS HAVING GENERATOR CONTROL
141 .Automatic generator control and/or with time-delay means
142 ..Responsive to diverse conditions or with time-delay means
143 ...Plural electrical conditions
144 ..Armature or primary current of motor
145 ..Terminal voltage or counter e.m.f. of motor
146 ..Speed of motor or driven device
147 ..Speed or frequency of generator or its drive means
148 .Alternating-current-motor system
149 .With plural, diverse or diversely controlled generators
150 .With flywheel on generator or on motor
151 .Control of both the generator and the circuit to the motor
152 ..With motor control
153 .Control of both the generator and the motor
154 ..Control of excitation (field) circuit of both
156 .Plural, diverse or diversely actuated, generator control means
157 .Generator speed control
158 .Generator field circuit control
159 HAVING ROTOR ELEMENT BIASED AGAINST ROTATION
160 .By resilient biasing means (e.g., spring)
161 WITH FLYWHEEL OR MASSIVE ROTARY MEMBER
162 CONTROL BY PATTERNS OR OTHER PREDETERMINED SCHEDULE MEANS
163 .Motor running-speed control
164 ..Cyclically varying or repeated speed schedules
700 SYNCHRONOUS MOTOR SYSTEMS
701 .Hysteresis or reluctance motor systems
702 .Antihunting or damping
703 .Braking
704 .Pole changing motor winding circuits
705 .Synchronization systems
706 ..With armature power removal upon failure to synchronize or loss of synchronism
707 ...Upon failure to resynchronize
708 ...Responsive to thermal electrical element in system
709 ..Having different armature voltage prior to synchronism
710 ..With d.c. field removal

SYNCHRONOUS MOTOR SYSTEMS
.Synchronization systems
..With d.c. field removal
711 ...With electronic control element in system
712 ..With field excitation application
713 ...Responsive to slip voltage frequency in d.c. field winding
714 ...Responsive to armature current
715 ...Responsive to rotor speed or rotor driven member
716 .Field winding circuits
717 ..Responsive to a motor condition
718 ...Induced voltage in field winding
719 ...Speed responsive field power sources
720 .Armature winding circuits
721 ..Responsive to rotor shaft position or speed
722 ..Having electronic power conversion circuit
723 ..Having variable frequency supply
724 ..Having a plurality of windings or winding portions
725 REPULSION MOTOR SYSTEMS
726 .With added motor winding or convertible to series motor
727 INDUCTION MOTOR SYSTEMS
728 .Repulsion start
729 .Power-factor control
730 .With plural separately movable rotors
731 .With voltage source connected to motor secondary
732 ..Electronic device controls current in secondary circuit
733 ..Commutator connected to secondary winding
734 ..Slip rings connected to secondary winding
735 ...Rotor shaft coupled to dynamoelectric machine
736 ....Slip rings connected to dynamoelectric machine winding
737 .Self-cascaded motor windings
738 .With commutated winding
739 .Reversing
740 ..With diverse motor operation
741 ...With braking
742 ....Electromagnetic brakes
743 .....Generator action
744 .....Plugging
745 ..With controlled saturable reactor in primary circuit
746 ...Two phase motor
747 ..Two phase motor
748 ...With plural primary windings or winding portions having common connection
749 ..Operating from a single phase source
750 ...Shaded pole motor
751 ...Split phase motor with capacitor interchangeably connected in series with either primary winding
752 ....With controlled electronic device to provide the series connection
753 ...With de-energizable start winding
754 ....With separate winding or winding portion energized for each direction of rotation
755 ....Automatic current reversal on start winding
756 ..With controlled electronic switch for phase reversal
757 .Braking
758 ..With diverse operation
759 ..Dynamic braking
760 ...Direct current primary winding braking circuit
761 ....Rotating rotor controls braking current in primary winding
762 ....With a.c. to d.c. conversion circuit
763 ..Reversal of power to primary winding
764 ...Three phase power reversal
765 ..Eddy current braking circuits
766 .Primary and secondary circuits
767 .Primary circuit control
768 ..Three phase motor operated from single phase source
769 ...With dynamoelectric converter
770 ..Dual voltage motors
771 ..Delta-wye, plural wye, or plural delta connected primary windings
772 ..Plural speed
773 ...Pole changing
774 ....Single phase motor
775 .....Separate primary running winding for each pole number, alternately energized
776 .....Entire primary running winding energized for each running speed
777 ....Separate primary running winding for each pole number, alternately energized
778 ..Starting control
779 ...With speed control
780 ...Three phase motor with variable transformer to initially adjust voltage to motor windings
781 ...Operating from a single phase source
782 ....With protective features
783 .....Thermal starting and thermal overload protection
784 ....Impedance for reducing current during starting operation
785 ....Start winding removed during running operation
786 .....By electronic switch
787 ......With transformer for sensing the run winding current
788 ......With variable temperature coefficient resistor in switch control circuit
789 .....By electromagnetic switch
790 ......With relay coil in series with main winding
791 .....By thermal switch
792 ......With variable temperature coefficient impedance element
793 .....By centrifugal switch
794 ....Capacitor run motor with different capacitance at starting
795 .....With plural capacitors
796 ....Saturable winding in capacitor run motor circuit
797 ....Phase splitting using stator winding mutual inductance or saturable winding
798 ..Responsive to motor condition
799 ...Responsive to speed or rotation phase angle
800 ....With controlled power conversion
801 .....Including inverter
802 ......Responsive to an additional condition
803 ....With controlled a.c. to d.c. circuit in inverter supply
804 ....With controlled magnetic reactance
805 ...Responsive to motor voltage
806 ..Condition responsive
807 ..Frequency control
808 ...With voltage magnitude control
809 ...With voltage phase angle control
810 ...With voltage pulse time control
811 ....Pluse width modulation or chopping
812 ..Voltage control
813 ...With transformer

INDUCTION MOTOR SYSTEMS
.Primary circuit control
..Voltage control
814 ...With impedance control
815 ....Saturable reactor
816 ...Single phase, split phase motors
817 ....With capacitor
818 .Secondary circuit control
819 ..Open secondary member or portion thereof with means to open or close the circuit thereto
820 ..Closed secondary member or member portion with means to change electrical characteristics thereof
821 ..Impedance control of secondary circuit
822 ...Responsive to motor condition
823 ....Rotor speed or position responsive
824 .....Centrifugal force of rotor controls secondary circuit impedance
825 ....Induction motor current
826 .....Primary motor current
827 ....Frequency of secondary current
828 ....Secondary voltage
829 ...By manual operation
830 .With relatively movable cooperating motor parts to control energized motor
831 ..Axially movable cooperating parts
832 ..Dual stators, one or both angularly movable
244 ALTERNATING CURRENT COMMUTATING MOTORS
245 .Universal or A.C.-D.C. motors
246 SERIES MOTORS
247 .Convertible for nonseries motor operation
248 .With plural, diverse or diversely connected or controlled sources of e.m.f.
249 .Control by motor circuit impedance
250 ..Impedance in series with field windings and in parallel to armature winding
251 .Field circuit control
252 ..Plural, diverse or diversely connected or controlled field coils
253 HOMOPOLAR OR UNIFORM FIELD MOTORS
254 SELF-COMMUTATED IMPULSE OR RELUCTANCE MOTORS
255 PLURAL DIVERSE MOTOR CONTROLS
256 .Motor-reversing
257 ..With running-speed control
258 ...And braking
259 ....And acceleration control
260 ...And acceleration control
261 ..With braking
262 ...And acceleration control
263 ..With acceleration control
264 ..With automatic starting and/or stopping
265 ...Stopping upon predetermined movement of or position of motor or driven device
266 ....At limit-of-travel of motor or driven device
267 .....Dual control circuits alternately energized
268 .Running-speed control
269 ..With braking
270 ...And acceleration control
271 ..With acceleration control
272 ..With automatic starting and/or stopping
273 .Motor braking
274 ..With acceleration control
275 ..With automatic starting and/or stopping
276 .Acceleration control
277 ..With automatic starting and/or stopping
278 ...In response to an electrical condition
279 ....Automatic stopping means less responsive during acceleration
280 MOTOR-REVERSING
281 .Periodic- or intermittent-reversing
282 ..In response to movement or position (e.g., limit of travel) of motor or driven device
283 .Automatic and/or with time-delay means
284 ..With means to delay reversing until motor substantially stops
285 ..Instant of, or passage or predetermined time or having time-delay means
286 ..Movement or position of motor or driven device
287 .Armature or primary circuit control
288 ..Plural, diverse or diversely controlled armature windings
289 ...Phase-reversal
290 ...Selectively energized windings
291 ..Armature or primary current reversal
292 ...By shifting motor brushes or selecting appropriate set of brushes
293 ...Reversing polarity of current supplied to armature circuit
294 ....Wheatstone bridge type
295 ....Potentiometer-controlled
296 .Field circuit control
297 ..Plural, diverse or diversely controlled field windings
298 ...Simultaneous energization
299 ....With means for short-circuiting a winding
300 ..Field-circuit current reversed

CLASS 388 SUBCLASSES 800-841 ARE AN INTEGRAL PART OF CLASS 318 AS SHOWN BY THE POSITION OF THIS BOX. THIS PORTION OF CLASS 388 PROVIDES FOR SPEED CONTROL OF COMMUTATED DC MOTORS.

362 BRAKING
363 ."Spotting" or adjustment of braking controller during coasting
364 .Automatic and/or with time-delay means
365 ..Plural diverse conditions or with time delay
366 ..Condition of motor or driven device
367 ...Armature or primary current
368 ...Armature or primary circuit voltage or terminal or counter e.m.f. voltage
369 ...Speed, acceleration, movement or position of motor or driven device
370 .Plural, diverse or diversely controlled braking means
371 ..Including both friction braking "plugging" and/or dynamic braking
372 .Friction braking
373 ."Plugging" or application of reverse power to motor
374 ..Energy flow interrupted when motor stops
375 .Dynamic braking
376 ..Regenerative
377 ...With additional source of e.m.f.
378 ....In series with armature or primary circuit
379 ..Locally closed armature circuit
380 ...Closed through impedance or the like
381 ...With field or secondary circuit control

BRAKING
382 .By auxiliary electric generator or by magnetic attraction or repulsion devices
383 "ANTI-BRAKING" OR BRAKING-PREVENTION MEANS

CLASS 388 SUBCLASSES 842-860 ARE AN INTEGRAL PART OF CLASS 318 AS SHOWN BY THE POSITION OF THIS BOX. THIS PORTION OF CLASS 388 PROVIDES FOR ACCELERATION CONTROL OF COMMUTATED DC MOTORS.

430 MOTOR LOAD, ARMATURE CURRENT OR FORCE CONTROL DURING STARTING AND/OR STOPPING
431 .Initial, "cracking" or "starting from rest" torque control
432 CONSTANT MOTOR CURRENT, LOAD AND/OR TORQUE CONTROL
433 .Control of motor load or device driven
434 LIMITATION OF MOTOR LOAD, CURRENT, TORQUE OR FORCE (E.G., PREVENTING OVERLOAD)
436 NONRUNNING, ENERGIZED MOTOR
437 PHASING OR ANGULAR OR LINEAR POSITIONAL CONTROL OF MOVABLE ELEMENT OF THE MOTOR
438 POWER FACTOR CONTROL OF ARMATURE OR LINE CIRCUIT
439 MOTOR COMMUTATION CONTROL SYSTEMS
440 HAVING PLURAL, DIVERSE OR DIVERSELY CONTROLLED SOURCES
441 .A.C. and D.C.
442 .Different voltages
443 PERIODIC, REPETITIOUS OR SUCCESSIVE OPERATIONS CONTROL OF MOTOR, INCLUDING "JOG" AND "INCH" CONTROL
444 .Variable periods or intervals between controlling operations
445 AUTOMATIC AND/OR WITH TIME-DELAY MEANS (E.G., AUTOMATIC STARTING AND/OR STOPPING)
446 .With nonautomatic control means (e.g., manual)
447 .Nonresponsive or less responsive for limited periods
448 .Anti-hunting
449 .With respect to a fixed standard, master or reference device
450 ..Electrical detector
451 ..Mechanically vibrating device as reference device (e.g., tuning fork)
452 .Plural, diverse conditions or with time-delay means
453 ..Electrical condition
454 ...Plural, diverse electrical conditions
455 ....Voltage and current (e.g., watts)
456 .Rate-of-change of a condition
457 ..Interia-type detector
458 ..Electrical condition
459 .Terminal voltage or counter-electromotive force of controlled motor
460 .Sound, supersonic vibration or mechanical vibration
461 .Speed or rate-of-movement
462 ..Centrifugal-type detector
463 ..Tachometer-type detector
464 ...Electric generator tachometer
465 ..In excess of a predetermined valve
466 .Movement, position, or limit-of-travel
467 ..Plural sensing means for determining plural positions or plural limits-of-travel
468 ..Limit-of-travel control means
469 ...Overloading limit-of-travel-type control means
470 ..Magnitude of movement or revolutions
471 .Responsive to thermal conditions
472 ..Of motor control means
473 ..In or about the motor being controlled
474 .Motor load, armature or primary or secondary circuit current
475 ..Mechanical-type detector (e.g., by yielding spring devices)
476 ..In excess of a predetermined magnitude
477 ...Intentionally increased load
478 .Electrical conditions in circuit other than controlled motor circuit
479 ..Voltage
480 .Radiant energy
481 .Pressure in a fluid or granular material
482 .Level of fluid or granular material
483 .Moisture content or wetness
484 .Time or with time-delay means
485 ..Dash-pot or other mechanical delay means
486 ..Pilot- or servo-motors
487 ..Electromagnetic or inductive time-delay means
488 .Responsive to stress in body or material
489 .Responsive to direction, inclination or angular position of bodies
490 WITH SIGNALS, METERS, RECORDERS OR TESTING DEVICES
491 CONTROL OF BOTH MOTOR CIRCUIT AND MOTOR STRUCTURE
492 MOTOR MAGNETIC ENERGY DISSIPATION
493 CONTROL OF BOTH ARMATURE (OR PRIMARY) CIRCUIT AND FIELD (OR SECONDARY) CIRCUIT
494 ARMATURE (OR PRIMARY) CIRCUIT CONTROL
495 .Plural, diverse or diversely controlled, armature or primary windings
496 ..Polyphase windings
497 ..Series-parallel
498 ..Energized or controlled in predetermined sequence
499 ..Wound or energized in magnetic opposition
500 .Plural sources of voltage (including counter e.m.f. cells)
501 .By shunting armature or primary winding
502 .Variable length or tapped armature winding
503 .Frequency or pulsation control
504 .Voltage control
505 .By means to space-discharge devices
506 ..Plural, diverse or diversely connected or controlled space-discharge devices
507 ..Having discharge-control means (e.g., grids)
508 .Impedance-controlled
509 ..Plural, diverse or diversely controlled impedances
510 ...Including both reactor and condenser
511 ..Inherently or self-variable impedance
512 ..Inductive reactor controlled
513 ...Having auxiliary means for saturating reactor core
514 ..Resistor-controlled
515 ...Having short-circuiting means
516 ....Short-circuited step-by-step
519 .By armature or primary circuit-making and/or breaking
520 ..Electromagnetically actuated
521 FIELD OR SECONDARY CIRCUIT CONTROL
523 .Plural, diverse or diversely connected or controlled field windings

	FIELD OR SECONDARY CIRCUIT CONTROL
	.Plural, diverse or diversely connected or controlled field windings
524	..Convertible number-of-poles type (e.g., 4-pole or 6-pole)
525	..Differentially wound or energized windings
526	..Series-parallel
527	..Series field winding
528	..With means to short circuit a field winding
529	..Selectively energized
530	.Plural, diverse or diversely connected or controlled sources of field circuit voltage
531	.Variable length or tapped field winding
532	.By means of space-discharge device in field circuit
533	.Impedance-controlled
534	..Plural, diverse or diversely connected or controlled field circuit impedances
535	...Wheatstone bridge
536	.By field circuit making and/or breaking
537	..Intermittently operated
538	MOTOR STRUCTURE ADJUSTMENT OR CONTROL
539	.Both armature and field structures rotatable or adjustable
540	.Rotor element movable axially
541	.Brush or other current-collector control
542	..Having movement toward or from cooperating part (e.g., brush lifted from commutator)
543	THREE-OR-MORE-POSITIONS MOTOR CONTROLLER SYSTEMS
544	.With other motor control device
545	..Main line switch
546	.Plural, diverse or diversely controlled controllers
547	..Plural control stations
548	.Plural control stations
549	.Return to "off", "starting" or "neutral" positions
550	..Power-operated controllers
551	.Knee- or foot-operated controllers
552	.Power-actuated controllers
553	..Separately actuated controller contacts
554	...Electromagnetic actuated
555	..Electromagnetic actuated
556	...Reciprocating or oscillating electromagnetic means
557	...Intermittent or step-by-step operation
558	MISCELLANEOUS
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	DIGEST
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DIG 2	Windshield wiper controls

• CLASS 320 ELECTRICITY, BATTERY AND CONDENSER CHARGING AND DISCHARGING

DECEMBER 1990

1 CONDENSER CHARGING AND/OR DISCHARGING
2 BATTERY CHARGING AND/OR DISCHARGING
3 .Including dry cells or primary batteries
4 .."Recharging", depolarizing and/or reconditioning
5 .Combined charging and discharging
6 ..Plural, diversely treated batteries
7 ...Series-parallel connections thereof
8 ...Transposition between charging and discharging circuits
9 ..Combined regulation of charging source or circuit and discharging circuit
10 ..Charging source and/or circuit controlled by discharging circuit
11 ...Starting and/or stopping of battery charging
12 ...Charging generator control
13 ..Discharging circuit regulation
14 ..Alternately charging and discharging
15 .Plural, diversely treated, batteries
16 ..Series-parallel connections thereof
17 ..Series-connected batteries
18 ...Variable number in series
19 ..Periodic or intermittent charging or discharging
20 .High-rate, short-time charging systems
21 .Periodic or intermittent charging or discharging
22 .Plural rates of charging or discharging
23 ..Decreasing rates of charging
24 ...Three or more rates
25 .With polarity control
26 ..By means of reversing switches
27 .Combined control of source and charging circuit
28 ..Including charging circuit-making and/or breaking
29 .Combined circuit regulation and circuit-making and/or breaking
30 .Control responsive to predetermined conditions
31 ..Plural, diverse conditions and/or with time-delay means
32 ...Including voltage and current magnitudes
33 ....For battery circuit-making and/or breaking
34 ...For battery circuit-making and/or breaking
35 ..Thermal condition
36 ...For battery circuit-making and/or breaking
37 ..Instant of, or period of time
38 ...For battery circuit-making and/or breaking
39 ..Voltage or current magnitude
40 ...For battery circuit-making and/or breaking
41 ..Speed or centrifugal forces
42 ...For battery circuit-making and/or breaking
43 ..Condition of battery charge
44 ...Control by ampere-hour or watt-hour type of device
45 ....For battery circuit-making and/or breaking
46 ...Control by gas pressure-responsive means
47 ..For battery circuit-making and/or breaking
48 .With indicating, signaling and/or testing means
49 .Battery circuit control
50 ..With bucking and/or boosting e.m.f. in charging circuit
51 ..By impedance in charging or discharging circuit
52 ...Pressure-responsive type of impedance
53 ..Unidirectionally conductive devices in battery circuit
54 ..Battery circuit-making and/or breaking
55 ...Plural circuit makers and/or breakers
56 .Plural, diverse or diversely treated sources of supply for charging
57 .Rectifying systems for battery charging
58 ..Dynamoelectric-type rectifier
59 ..Unidirectionally conductive-type rectifier
60 ...Space-discharge devices
61 .Generation systems for battery charging
62 ..Physical starting and/or stopping of generator
63 ...Generator used as starting means
64 ..Generator field-winding circuit control
65 ...Plural, diversely treated field windings
66 ....Differentially related
67 ...Auxiliary source or field circuit e.m.f.
68 ...Field-winding circuit impedance
69 ....Step short-circuited type
70 ....Pressure-responsive type of impedance
71 ..Armature or generating circuit shorted or grounded
72 ..Generator structure control

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DIGESTS

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DIG 1 Transistor circuits which have specific uses as battery chargers
DIG 2 Silicon-controlled rectifier used as battery chargers

CLASS 322 ELECTRICITY, SINGLE GENERATOR SYSTEMS

DECEMBER 1990

1 PORTABLY MOUNTED
2 R NONMAGNETIC-TYPE GENERATOR
2 A ..Electrostatic
3 RECIPROCATING AND/OR OSCILLATING-TYPE GENERATOR
4 WITH FLYWHEELS OR MASSIVE MOVING PARTS
5 WITH GENERATOR POLARITY CONTROL
6 .By control of excitation
7 COMBINED CONTROL OF GENERATING MEANS AND LOAD CIRCUIT
8 .Including load circuit-making and breaking
9 PLURAL DRIVING MEANS
10 WITH PHYSICAL STARTING AND/OR STOPPING OF THE GENERATOR
11 .Automatic in response to predetermined conditions
12 .Connecting and/or disconnecting generator and driving means
13 .Electric motor as driving means
14 COMBINED CONTROL OF GENERATOR AND DRIVING MEANS
15 .Simultaneous control
16 ..Electric motor
17 AUTOMATIC CONTROL OF GENERATOR OR DRIVING MEANS
18 .With time-delay in the response
19 .Antihunting or rate of change
20 .Power factor or phase relationships
21 .With line-drop compensation
22 .Plural conditions
23 ..Including an electrical condition
24 ...Plural electrical conditions
25 ....Voltage and current
26 .Light or photosensitive control circuits
27 .Current output
28 .Voltage of generator or circuit supplied
29 .Speed or frequency of generator
30 ..Centrifugal of fly weight governor
31 ..Tachometer devices
32 ..Frequency responsive devices or networks
33 .Thermal conditions
34 ..In generator and/or driving means
35 .Fluid pressure including wind
36 .With respect to a reference or master device or quantity
37 .Electrical conditions in circuit other than that of generator being controlled
38 DRIVING MEANS CONTROL
39 .Electric motor control
40 POWER TRANSMITTING MECHANISM CONTROL
41 .Friction-type transmission
42 ..Belt drive
43 ...Slip control
44 GENERATOR CONTROL
45 .Combined diverse generator controls
46 .Combined permanent magnet and wound field structure
47 .Induction generator
48 .Acyclic or homopolar-type generator
49 .Magnetic structure
50 ..Magnetic shunt for field flux
51 ..Rotor element
52 ..Stator element
53 .Odd number of brushes (e.g., 3rd brush type)
54 .Adjustable current-collecting mechanism
55 ..Movable circumferentially
56 ...Continuously
57 .With nonexciting saturating means for generator structure
58 .With means for suppressing, eliminating or minimizing undesired frequencies
59 .With excitation winding and/or circuit control
60 ..Substitute or auxiliary starting source of excitation
61 ..Alternating current excitation
62 ..Plural sets of poles type of generator
63 ..Plural excitation windings
64 ...Differentially related
65 ...Interpole windings
66 ...Compensating windings
67 ..Series-wound generator
68 ..Short circuiting of field winding
69 ..Circuit interruption
70 ...Continuous make and break
71 ..Variable length field winding
72 ..Control by electric space discharge
73 ...Discharge control discharge device
74 ...Electric arc
75 ..Control by circuit impedance
76 ...Plural impedances
77 ....Bridge arrangements
78 ....Tuned or resonant
79 ...Unidirectionally conductive
80 ...Resistance
81 ....Thermally varied resistance
82 ....Pressure-varied resistance
83 ....Short-circuited
84 .....Continuous make and break
85 .....Step by step
86 ..Plural sources of excitation voltage
87 ...Dynamoelectric source
88 ...Battery source
89 .With armature or primary circuit control
90 ..Plural armature circuits or windings
91 ..Short-circuiting of windings
92 ...By auxiliary brushes diametrically opposed or 180 electrical degrees apart
93 ..Tapped or sectionalized
94 ..Circuit-making and/or breaking
95 ..By armature circuit impedance
96 ...Plural impedances
97 ...Resistance control
98 ....In circuit across brushes or in shunt to generator
99 WITH SIGNALS, INDICATORS, RECORDERS, TESTING, ETC.
100 MISCELLANEOUS

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DIGESTS

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DIG 2 Generator field current-responsive systems
DIG 5 Hall effects elements
DIG 6 Ripple sensitive

201 INCLUDING A DYNAMOELECTRIC MACHINE
202 .Balancer sets
203 .With plural sets of slip rings or brushes
204 .Condition responsive
205 FOR REACTIVE POWER CONTROL
206 .Using saturable inductor
207 .Using converter
208 .Using impedance
209 ..Switched impedance
210 ...Static switch
211 ....Digitally controlled
212 FOR PHASE SHIFT OR CONTROL
213 .By splitting and combining
214 .Using saturable inductor
215 .Using transformer
216 ..With movable structure or winding
217 .Using a three or more terminal semiconductive device
218 .Using impedance
219 ..In bridge
220 IN SHUNT WITH SOURCE OR LOAD
221 .Photo responsive
222 .Using choke and switch across source
223 .Using a three or more terminal semiconductive device
224 ..With additional series regulator
225 ..Plural devices
226 ..Linearly acting
227 .Using electronic tube
228 ..With additional series regulator
229 .Using diode
230 ..Inverse parallel
231 ..Zener
232 .Using inductor
233 .Using impedance
234 OUTPUT LEVEL RESPONSIVE
235 .Zero switching
236 ..Nonelectrical condition sensing
237 .Phase controlled switching using electronic tube or a three or more terminal semiconductive device
238 ..With soft start
239 ..Including single unidirectional element with bidirectional pass
240 ..Including saturable inductor in trigger circuit
241 ..With digital control
242 ..Including ramp generator or controlled capacitor charging
243 ...As input to comparator
244 ..With synchronization
245 ..With nonelectrical condition sensing
246 ..With plural condition sensing
247 .Using a transformer or inductor as the final control device
248 ..Ferroresonant
249 ..Controllably saturable
250 ...With specific core structure (e.g., gap, aperture, slot, permanent magnet)
251 ...With plural power windings
252 ....In bridge configuration or in bridge arm
253 ....On different cores
254 ...With electronic tube or a three or more terminal semiconductive device in control circuit
255 ..Having a variable length winding (e.g., tapped) as the final control device
256 ...With motor driven tap switch
257 ....Including an electronic tube or a three or more terminal semiconductive device in control circuit
258 ...With electronic tube or a three or more terminal semiconductive device as tap switch
259 ..Having a winding in series with the source and load (e.g., buck-boost)
260 ...With motor in control circuit
261 ...With saturable reactor in control circuit
262 ...Plural windngs in series
263 ...With electronic tube or a three or more terminal semiconductive device in control circuit
264 ..Having movable structure or winding
265 .Using a three or more terminal semiconductive device as the final control device
266 ..Including pre or post regulation
267 ..Including plural loads commonly controlled
268 ..Including plural final control devices
269 ...Linearly acting parallel connected
270 ...Linearly acting series connected
271 ...Switched (e.g., on-off control)
272 ....Parallel connected
273 ..Linearly acting
274 ...With threshold detection
275 ...With plural condition sensing
276 ....For protective system
277 .....With current sensor
278 ......Having base-emitter of transistor coupled across sensor
279 ....Including final control device parameter
280 ...With a specific feedback amplifier (e.g., integrator, summer)
281 ...With reference voltage circuitry
282 ..Switched (e.g., switching regulators)
283 ...Digitally controlled
284 ...With threshold detection
285 ...With plural condition sensing
286 ....Including filter sensing
287 .....In flyback path
288 ...With ramp generator or controlled capacitor charging
289 ...With base drive control dissipation
290 ...With inductor in control circuit
291 .Using an electronic tube as the final control device
292 ..With a three or more terminal semiconductive device in control circuit
293 .Using an impedance as the final control device
294 ..Hall effect device, magnetoresistor or thermistor
295 ..Pressure sensitive resistor
296 ..Liquid contact resistor
297 ..Plural selective resistors
298 ..Variable resistor
299 INPUT LEVEL RESPONSIVE
300 .Phase controlled switching using electronic tube or a three or more terminal semiconductive device
301 .Using a transformer or inductor as the final control device
302 ..Saturable
303 .Using a linearly acting final control device
304 SELF-REGULATING (E.G., NONRETROACTIVE)
305 .Using a transformer or inductor as the final control device
306 ..Ferroresonant
307 ...With plural cores
308 ...With core having an air gap or magnetic shunt
309 ....Including a ferrocapacitor across a tertiary winding
310 ..Controllably saturable

SELF-REGULATING (E.G., NONRETROACTIVE)
311 .Using a three or more terminal semiconductive device as the final control device
312 ..For current stabilization
313 ...To derive a voltage reference (e.g., band gap regulator)
314 ....With additional stage
315 ...Including parallel paths (e.g., current mirror)
316 ....With amplifier connected to or between current paths
317 ....With switched final control device
318 EXTERNAL OR OPERATOR CONTROLLED
319 .Zero switching
320 .Phase controlled switching using electronic tube or a three or more terminal semiconductive device
321 ..With soft start
322 ..With digital control
323 ..With interval timer
324 ..Using single unidirectional element with bidirectional pass
325 ..With a three or more terminal semiconductive device in trigger circuit
326 ...Including ramp generator or controlled capacitor charging
327 ..With passive element only in trigger circuit
328 .Using a transformer or inductor as the final control device
329 ..Controllably saturable
330 ...With permanent magnet
331 ...With core having a gap, aperture, or slot
332 ...With plural power windings
333 ....In bridge configuration or in bridge arm
334 ....On different legs of single core
335 ....On different cores
336 .....Multistage
337 .....Push-pull
338 ...With plural cores
339 ...Including an electronic tube or a three or more terminal semiconductive device in control circuit
340 ..Having a variable length winding (e.g., tapped) as the final control device
341 ...With motor driven tap switch
342 ...With other transformer
343 ...With a three or more terminal semiconductive device
344 ..Having a windng in series with the source and load (e.g., buck-boost)
345 ..Having a switch in series with winding
346 ..Having series-parallel connectable windings
347 ..Having movable structure or winding
348 ...Including rotary motion
349 .Using a three or more terminal semiconductive device as the final control device
350 ..Including plural final control devices
351 ..Switched (e.g., switching regulators)
352 .Using an impedance as the final control device
353 ..Resistor
354 ...Selective
355 INCLUDING A TRANSFORMER OR AN INDUCTOR
356 .With compensation
357 ..For current transformer
358 .Current transformer
359 .Potential transformer
360 .Superconductive
361 .Polyphase or plural transformers
362 .With core having permanent magnet or air gap
363 .Inductor with or in a bridge
364 INCLUDING AN IMPEDANCE
365 .In a bridge
366 ..Thermistor
367 ..Resistor only
368 .Hall effect device or magnetoresistor
369 .Thermistor or resistor
370 ..With capacitor
371 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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901 STARTING CIRCUITS
902 OPTICAL COUPLING TO SEMICONDUCTOR
903 PRECIPITATORS
904 TOUCH SYSTEMS
905 LAMP DIMMER STRUCTURE
906 SOLAR CELL SYSTEMS
907 TEMPERATURE COMPENSATION OF SEMICONDUCTOR
908 INRUSH CURRENT LIMITERS
909 REMOTE SENSING
910 TWO OF THREE PHASES REGULATED
911 MEDICAL ELECTRONICS

300 PARTICLE PRECESSION RESONANCE
301 .Using a magnetometer
302 ..To determine direction
303 .Using well logging device
304 .Using optical pumping or sensing device
305 ..Having particular optical cell structure
306 .Determine fluid flow rate
307 .Using a nuclear resonance spectrometer system
308 ..Including a test sample and control sample
309 ..To obtain localized resonance within a sample
310 ..By scanning sample frequency spectrum
311 ..With signal decoupling
312 ..By spectrum storage and analysis
313 ..Including polarizing magnetic field/radio frequency tuning
314 ..With conditioning of transmitter signal
315 ..With sample resonant frequency and temperature interdependence
316 .Using an electron resonance spectrometer system
317 ..Including a test sample and control sample
318 .Spectrometer components
319 ..Polarizing field magnet
320 ...With homogeneity control
321 ..Sample holder structure
322 ..Electronic circuit elements
323 OF GEOPHYSIC OF GEOPHYSICAL SURFACE OR SUBSURFACE IN SITU
324 .Including borehole fluid investigation
325 ..To determine fluid entry
326 .For small object detection or location
327 ..Using oscillator coupled search head
328 ...Of the beat frequency type
329 ..Using movable transmitter and receiver
330 .By aerial survey
331 ..For magnetic field detection
332 .With radiant energy or nonconductive-type transmitter
333 ..Within a borehole
334 ..With separate pickup
335 ...Employing multiple frequencies
336 ...To detect transient signals
337 ...To detect return wave signals
338 ...Within a borehole
339 ....By induction logging
340 .....To measure susceptibility
341 .....To measure dielectric constant
342 .....Using a toroidal coil
343 .....Using angularly spaced coils
344 .With radiant energy or nonconductive-type receiver
345 .By magnetic means
346 ..Within a borehole
347 .Using electrode arrays, circuits, structure, or supports
348 ..For detecting naturally occurring fields, currents, or potentials
349 ...Of the telluric type
350 ....Including magreto-telluric type
351 ...Within a borehole
352 ....Combined with artificial source measurement
353 ....With fluid movement or pressure variation
354 ..Coupled to artificial current source
355 ...Within a borehole
356 ....While drilling
357 ...Including separate pickup of generated fields or potentials
358 ....With three electrodes
359 ....With nonelectrode pickup means
360 ....Using a pulse-type current source
361 .....With mechanical current reversing means
362 .....To measure induced polarization
363 ....By varying the path of current flow
364 .....Using frequency variation
365 ....Offshore
366 ....For well logging
367 .....Using a pad member
368 .....Cased borehole
369 .....While drilling
370 .....Using surface current electrodes
371 .....Using plural fields
372 .....Between spaced boreholes
373 .....Using current focussing means
374 ......Including a pad member
375 ......Including plural current focussing arrays
376 OF SUBSURFACE CORE SAMPLE
377 .For magnetic properties
378 INTERNAL-COMBUSTION ENGINE IGNITION SYSTEM OR DEVICE
379 .With analysis of displayed waveform
380 .Electronic ignition system
381 ..With magnetically controlled circuit
382 ..With capacitor discharge circuit
383 .By simulating or substituting for a component under test
384 .Using plural tests in a conventional ignition system
385 .Distributor
386 ..Dwell (i.e., cam angle)
387 ..Condenser
388 .Coil
389 .Magneto
390 .Low or high tension lead
391 .Ignition timing
392 ..Using a pulse signal technique
393 .In situ testing of spark plug
394 ..With cathode-ray tube display
395 ..Using an illuminating device to indicate spark plug condition
396 ..With an air gap in series with spark plug to indicate spark plug condition
397 ..By shorting the plug to ground to indicate spark plug condition
398 ...With air gap in ground circuit
399 ..Wherein a measured electric quantity indicates spark plug condition
400 .Spark plug removed or tested in a test fixture
401 ..Using a pressure chamber
402 .Apparatus for coupling a measuring instrument to an ignition system
403 ELECTRIC LAMP OR DISCHARGE DEVICE
404 .Cathode-ray tube
405 .Vacuum tube
406 ..Plural tubes in the testing circuit
407 ..Testing circuit for diverse-type tube
408 ..Circuit for making diverse test
409 ..Testing discharge space characteristic (e.g., emission)
410 ...With application of current or potential to the discharge control means
411 ....Pulsating or alternating current or potential for the discharge control means
412 .....Pulsating or alternating current for the anode
413 ..Shock testing
414 .Electric lamp
415 ELECTROMECHANICAL SWITCHING DEVICE
416 .Voltage regulator
417 .Thermostat switch
418 .Relay
419 ..Reed switch
420 ..To evaluate contact chatter

ELECTROMECHANICAL SWITCHING DEVICE
.Relay
421 ..To evaluate contact resistance
422 ..To evaluate contact sequence of operation
423 ..To evaluate contact response time
424 .Circuit breaker
425 ELECTROLYTE PROPERTIES
426 .Using a battery testing device
427 ..To determine ampere-hour charge capacity
428 ...Including an integrating device
429 ..To determine load/no-load voltage
430 ..To determine internal battery impedance
431 ..With temperature compensation of measured condition
432 ..To determine battery electrolyte condition
433 ..To compare battery voltage with a reference voltage
434 ..To determine plural cell condition
435 ..Having particular meter scale or indicator
436 ..Including oscillator in measurement circuit
437 ..Including probe structure
438 .Using a pH determining device
439 .Using a conductivity determining device
440 ..Which includes a dropping mercury cell
441 ..Which includes a temperature responsive element
442 ..Which includes an oscillator
443 ..Having a bridge circuit
444 ..Which includes current and voltage electrodes
445 ..Having inductance probe structure
446 ..Having conductance probe structure
447 ...With movable or adjustable electrode
448 ...With concentric electrodes
449 ...With axially arranged electrodes
450 ..Which includes particular cell container structure
451 A MATERIAL PROPERTY USING THERMOLELECTRIC PHENOMENON
452 A MATERIAL PROPERTY USING ELECTROSTATIC PHENOMENON
453 .In a liquid
454 .Frictionally induced
455 .Corona induced
456 .For flaw detection
457 ELECTROSTATIC FIELD
458 .Using modulation-type electrometer
459 USING IONIZATION EFFECTS
460 .For monitoring pressure
461 ..Using a radioactive substance
462 ..Using thermionic emission
463 ..Using a magnetic field
464 .For analysis of gas, vapor, or particles of matter
465 ..Using electronegative gas sensor
466 ..Using a filter
467 ..Using test material desorption
468 ..Using thermal ionization
469 ..Using a radioactive substance
470 ..Using thermionic emission
200 MAGNETIC
207.11 .Displacement
207.12 ..Compensation for measurement
207.13 ..Having particular sensor means
207.14 ...Diverse sensors
207.15 ...Inductive
207.16 ....Electrically energized
207.17 .....Separate pick-up
207.18 .....Differential type (e.g., LVDT)
207.19 .....Differential bridge circuit
207.2 ...Hall effect
207.21 ...Magnetoresistive
207.22 ..Having particular sensed object
207.23 ..Plural measurement (e.g., linear & rotary)
207.24 ..Linear
207.25 ..Rotary
207.26 ..Approach or retreat
201 .Susceptibility
202 .Calibration
203 .Curie point determination
204 .Fluid material examination
205 .Permanent magnet tesing
206 .Movable random length material measurement
209 .Stress in material measurement
210 .Magnetic information storage element testing
211 ..Memory core storage element testing
212 ..Dynamic information element testing
213 .Magnetic recording medium on magnetized object records object field
214 .By paramagnetic particles
215 ..With pattern enhancing additive
216 ..Flaw testing
217 .Railroad rail flaw testing
218 ..Rail joint cutout
219 .Magnetic sensor within material
220 ..Sensor supported, positioned, or moved within pipe
221 ...Borehole pipe testing
222 .Hysteresis or eddy current loss testing
223 .Hysteresis loop curve display or recording
224 .With temperature control of material or element of test circuit
225 .With compensation for test variable
226 .Combined
227 .Plural tests
228 .With means to create magnetic field to test material
229 ..Thickness measuring
230 ...Layer or layered material
231 ...With backing member
232 ..Plural magnetic fields in material
233 ..With phase sensitive element
234 ..Electrically energized nonforce type sensor
235 ...Noncoil type
236 ...Oscillator type
237 ....Material flaw testing
238 ...Material flaw testing
239 ..Induced voltage-type sensor
240 ...Material flaw testing
241 ....Opposed induced voltage sensors
242 ....Plural sensors
243 ...Plural sensors
244 .Magnetometers
244.1 ..Optical
245 ..Plural sensor axis misalignment correction
246 ..With means to align field sensor with magnetic field sensed
247 ..Nonparallel plural magnetic sensors
248 ..Superconductive magnetometers
249 ..Thin film magnetometers
250 ..Electronic tube or microwave magnetometers
251 ..Hall plate magnetometers
252 ..Semiconductor type solid-state or magnetoresistive magnetometers
253 ..Saturable core magnetometers
254 ...Second harmonic type
255 ...Peak voltage type
256 ..Energized movable sensing coil magnetometers
257 ..Moving coil magnetometer
258 ..Fixed coil magnetometer
259 ..Movable magnet or magnetic member interacts with magnetic field

	MAGNETIC
260	.Magnetic field detection devices
261	..With support for article
262	.Magnetic test structure elements
263	.Current through test material forms test magnetic field
500	FAULT DETECTING IN ELECTRIC CIRCUITS & OF ELECTRIC COMPONENTS
501	.Using radiant energy
502	.In an ignitor or detonator
503	.In vehicle wiring
504	..With trailer
505	..Combined with window glass
506	.Combined with a flashlight
507	..With fuse testing attachment
508	.With electric power receptacle for line wire testing
509	.Of ground fault indication
510	..Of electrically operated apparatus (power tool, appliance, machine, etc.)
511	.Of electrically operated apparatus (power tool, appliance, machine, etc.)
512	.For fault location
513	..Where component moves while under test
514	...By exposing component to liquid or gas while under test
515	...Using a particular sensing electrode
516	....Metal chain
517	....Wire bristles
518	....Metal pellets or beads
519	..By capacitance measuring
520	..By frequency sensitive or responsive detection
521	..By phase sensitive or responsive detection
522	..By voltage or current measuring
523	...Of an applied test signal
524	...Polarity responsive
525	..By resistance or impedance measuring
526	...Using a bridge circuit
527	..By applying a test signal
528	...Tracing test signal to fault location
529	....Using a magnetic field sensor
530	....Using an electric field sensor
531	...At fault site
532	...Using time measuring
533	....Of reflected test signal
534	..By reflection technique
535	..By time measuring
536	..By spark of arc discharge
537	.Of individual circuit component or element
538	..Electrical connectors
539	..Multiconductor cable
540	...With sequencer
541	...For insulation fault
542	...Having a light or sound indicator
543	..Single conductor cable
544	...For insulation fault
545	..Armature or rotor
546	..Winding or coil
547	...Transformer
548	..Capacitor
549	..Resistor
550	..Fuse
551	..Insulation
552	...Bushing
553	...Oil
554	...Sheet material
555	.Instruments & devices for fault testing
556	..Having a lamp or light indicator
557	FOR INSULATION FAULT OF NONCIRCUIT ELEMENTS
558	.Where element moves while under test
559	.Where a moving sensing electrode scans a stationary element under test
600	IMPEDANCE, ADMITTANCE OR OTHER QUANTITIES REPRESENTATIVE OF ELECTRICAL STIMULUS/RESPONSE RELATIONSHIPS
601	.Calibration
602	.With auxilliary means to condition stimulus/response signals
603	..For excitation
604	...Including marker signal generator circuit
605	..For response signal evaluation or processing
606	...Including a signal comparison circuit
607	...Including a conversion (e.g., A->D or D-> A) process
608	...Including a ratiometric function
609	..For sensing
610	...Including a bridge circuit
611	...Including a remote type circuit
612	.Parameter related to the reproduction or fidelity of a signal affected by a circuit under test
613	..Noise
614	...Signal to noise ratio or noise figure
615	..Transfer function type characteristics
616	...Gain or attenuation
617	...Response time or phase delay
618	...Transient response or transient recovery time (e.g., damping)
619	...Selective type characteristics
620	..Distortion
621	...Envelope delay
622	...Phase
623	...Harmonic
624	...Intermodulation
625	...Dissymmetry or asymmetry
626	...Nonlinearity
627	..Shielding effectiveness (SE)
628	...Circuit interference (e.g., crosstalk) measurement
629	.Distributive type parameters
630	..Plural diverse parameters
631	..Using wave polarization (e.g., field rotation)
632	..Using particular field coupling type (e.g., fringing field)
633	..Using resonant frequency
634	...To determine water content
635	...To determine dimension (e.g., distance or thickness)
636	...With a resonant cavity
637	..Using transmitted or reflected microwaves
638	...Scattering type parameters (e.g., complex reflection coefficient)
639	...Where energy is transmitted through a test substance
640	....To determine water content
641	....To determine insertion loss
642	...Where energy is reflected (e.g., reflectometry)
643	....To determine water content
644	....To determine dimension (e.g., distance or thickness)
645	....Having standing wave pattern
646	....To determine reflection coefficient
647	..Using a comparison or difference circuit
648	...With a bridge circuit
649	.Lumped type parameters
650	..Using phasor or vector analysis
651	...With a bridge circuit
652	..Of a resonant circuit
653	..For figure of merit or Q value
654	..Using inductive type measurement
655	...Including a tuned or resonant circuit
656	...Including a comparison or difference circuit

	IMPEDANCE, ADMITTANCE OR OTHER QUANTITIES REPRESENTATIVE OF ELECTRICAL STIMULUS/RESPONSE RELATIONSHIPS
	.Lumped type parameters
	..Using inductive type measurement
	...Including a comparison or difference circuit
657	....Using a bridge circuit
658	..Using capacitive type measurement
659	...With loss characteristic evaluation
660	...With variable electrode area
661	...With variable distance between capacitor electrodes
662	....To determine dimension (e.g., thickness or distance)
663	...Where a material or object forms part of the dielectric being measured
664	....To determine water content
665	.....By comparison or difference circuit
666	......Including a bridge circuit
667	.....By frequency signal response, change or processing circuit
668	......Including tuned or resonant circuit
669	.....With compensation means
670	......For temperature variations
671	....To determine dimension (e.g., dielectric thickness)
672	....By comparison or difference circuit
673	.....Including a bridge circuit
674	....By frequency signal response, change or processing circuit
675	.....Including a tuned or resonant circuit
676	...With pulse signal processing circuit
677	....Including R/C time constant circuit
678	....Including charge or discharge cycle circuit
679	...With comparison or difference circuit
680	....Including a bridge circuit
681	...With frequency signal response, change or processing circuit
682	....Including a tuned or resonant circuit
683	...With phase signal processing circuit
684	...With compensation means
685	....For temperature variation
686	...With a capacitive sensing means
687	....Having fringing field coupling
688	....Including a guard or ground electrode
689	....To determine water content
690	....Including a probe type structure
691	..Using resistance or conductance measurement
692	...With living organism condition determination using conductivity effects
693	...With object or substance characteristic determination using conductivity effects
694	....To determine water content
695	.....Where the objects moves while under test
696	.....With a probe structure
697	....For interface
698	....To determine oil qualities
699	....To determine dimension (e.g., distance or thickness)
700	.....Including corrosion or erosion
701	....Where the object moves while under test
702	...With radiant energy effects
703	....Including heating
704	...With ratio determination
705	...With comparison or difference circuit
706	....Including a bridge circuit
707	...With frequency respsonse, change or processing circuit
708	....Including a tuned or resonant circuit
709	...With phase signal processing circuit
710	...With pulse signal processing circuit
711	....Including R/C time constant circuit
712	....Including a digital or logic circuit
713	...With voltage or current signal evaluation
714	....Including a potentiometer
715	....Including a particular probing technique (e.g., four point probe)
716	.....To determine dimension (e.g., distance or thickness)
717	.....To determine material composition
718	.....To detect a flaw or defect
719	...With semiconductor or IC materials quality determination using conductivity effects
720	...With compensation means
721	....For temperature variation
722	...Device or apparatus determines conductivity effects
723	....Potentiometer
724	....Using a probe type structure
725	.Using a particular bridge circuit
726	.Transformer testing (e.g., ratio)
727	.Piezoelectric crystal testing (e.g., frequency, resistance)
66	CONDUCTOR IDENTIFICATION OF LOCATION (E.G., PHASE IDENTIFICATION)
67	.Inaccessible (at test point) conductor (e.g., buried in wall)
160	ELECTRICAL SPEED MEASURING
161	.Speed comparing means
162	.With acceleration measuring means
163	.Including speed analog electrical signal generator
164	..Eddy current generator type (e.g., tachometer)
165	..With direction indicator
166	.Including speed-related frequency generator
167	..Including rotating magnetic field actuated indicator
168	..Including periodic switch
169	...In ignition system
170	....High voltage speed signal type
171	...With extent-of-travel indicator
172	..Including synchronized recording medium
173	..Including magnetic detector
174	...Permanent magnet type
175	..Including radiant energy detector
176	.Including object displacement varied variable circuit impedance
177	.Including motor current or voltage sensor
178	.Including "event" sensing means
179	..Magnetic field sensor
180	..Mechanically actuated switch
71.1	DETERMINING NONELECTRIC PROPERTIES BY MEASURING ELECTRIC PROPERTIES
71.2	.Erosion
71.3	.Beam of atomic particles
71.4	.Particle counting
71.5	.Semiconductors for nonelectrical property
71.6	.Superconductors
72	TESTING POTENTIAL IN SPECIFIC ENVIRONMENT (E.G., LIGHTNING STROKE)
72.5	.Voltage probe
73.1	PLURAL, AUTOMATICALLY SEQUENTIAL TESTS
74	TESTING AND CALIBRATING ELECTRIC METERS (E.G., WATT-HOUR METERS)
75	.By stroboscopic means

76 R	MEASURING, TESTING OR SENSING ELECTRICITY PER SE
76 A	..Integrating
77 R	.Analysis of complex waves
77 A	...Amplitude distribution
77 B	...Frequency spectrum analyzer
77 C	....Scanning-panoramic receivers
77 CS	.....Scanning, particular sweep
77 D	....Nonscanning
77 E	.....Parallel filters
77 F	......Logarithmic
77 G	.....Correlators
77 H	......With delay line
77 K	......Optical
77 J	......Physical
78 R	.Frequency of cyclic current or voltage (e.g., cycle counting)
78 D	...Digital output
78 E	...With energy storage
78 F	...With filtering
78 J	...Current output proportional to frequency
78 N	...Nulling system
78 Q	...Qualitative output
78 S	...With saturable device
78 Z	...Deviation measurement
79 R	..By frequency comparison (e.g., heterodyne)
79 D	....Digital
80	..Tuned mechanical resonator (e.g., reed piezocrystal)
81	..By tuning (e.g., to resonance)
82	..By phase comparison
83 R	.Phase comparison (e.g., between cyclic pulse voltage and sinusoidal current)
83 A	...Analogue output
83 D	...Digital output
83 Q	...Quadrature sensing
83 FE	...Feedback control, electrical
83 FM	...Feedback control, mechanical
84	..With waveguide (e.g., coaxial cable)
85	..With frequency conversion
86	..Polyphase (e.g., phase angle, phase rotation or sequence)
87	..With nonlinear device (e.g., saturable reactor, rectifier), discharge device (e.g., gas tube) or lamp
88	...Cathode ray
89	...Space discharge control means (e.g., grid)
90	..Electrodynamometer instrument
91	..Synchroscope type
92	.Fluid (e.g., thermal expansion)
93	..Conductive field (e.g., mercury)
94	...Electrolytic
95	.With waveguide or long line
96	.Using radiant energy
97	..Light beam type (e.g., mirror galvanometer, parallax-free scale)
98	.Balancing (e.g., known/unknown voltage comparison, bridge, rebalancing)
99 R	..Automatic
99 D	....Digital voltmeters
100	...With recording
101	.Non-rebalancing bridge
102	.Transient or portion of cyclic
103 R	.Demand, excess, maximum or minimum (e.g., separate meters for positive and negative power, peak voltmeter)
103 P	...Peak voltmeters
104	..Thermal (e.g., actuation)
105	.Thermal (e.g., compensation)
106	..Actuation
107	.Polyphase
108	..Positive, negative or zero sequence
109	.Electrostatic attraction or piezoelectric
110	.Meter protection or fraud combatting
111	.With storage means for voltage or current (e.g., condenser banks)
112	..Tape, sheet (e.g., disk) or wire (e.g., magnetic) storage
113	.Recording
114	.Plural meters (e.g., plural movements in one case)
115	.Plural ranges, scales or registration rates
116	..With register (e.g., discount type, demand penalty)
117 R	.Magnetic saturation (e.g., in field or in amplifier)
117 H	...Hall effect
118	.Modulator/demodulator
119	.With rectifier (e.g., A.C. to D.C.)
120	.With voltage or current conversion (e.g., D.C. to A.C., 60 to 1000)
121 R	.Cathode ray (e.g., magic eye)
121 E	...Magic eye indicators
122	.Gaseous discharge (e.g., spark gap voltmeter)
123 R	.With amplifier or space discharge device
123 C	...Feedback amplifiers
124	..Inverted amplifier
125	.Inertia control, instrument damping and vibration damping
126	.With coupling means (e.g., attenuator, shunt)
127	..Transformer (e.g., split core admits conductor carrying unknown current)
128	..Selective filter
129	.Polepiece (e.g., split) admits nonunitary input conductor
130	.Self-calibration
131	.Suppressed zero
132	.Nonlinear (e.g., Thyrite)
133	.Nonquantitative (e.g., hot-line indicator, polarity tester)
134	.With commutator or reversing or pulsating switch (e.g., D.C. watt-hour meter)
135	..Oscillating
136	.With rolling wheel or ball (e.g., transmission, integrating)
137	.Eddy current rotor (e.g., A.C. integrating wattmeter)
138	..With phase adjustment
139	.Motor-driven, time-controlled or oscillating (e.g., ratchet)
140 R	.Plural inputs (e.g., summation, ratio)
140 D	...Ratio
141	..Voltamperes (real or reactive)
142	..Watts
143	.Plural active motor elements (e.g., for rtwo crossed pointers)
144	.With electromagnetic field (e.g., dynamometer)
145	..Solenoid plunger type
146	..With permanent magnet (e.g., field, vane)
147	..Soft iron vane
149	.With probe, prod or terminals
150	.Eccentricallly pivoted coil
151 R	.With permanent magnet
151 A	...Permanent magnet core
152	..Drag magnet
153	.With register
154 R	.With rotor (e.g., filar suspension, zero set, balancing)
154 PB	...Pointer and bearing details
155	..With pivot (e.g., internal friction compensation, anticreep)
156	.Casings
157	.Combined
158 R	MISCELLANEOUS
158 D	..Diode testing

	MISCELLANEOUS
158 F	..Test fixtures
158 MG	..Motor-generator tests
158 P	..Probes
158 SC	..Silicon-controlled rectifier tests
158 SM	..Servomotor tests
158 SY	..Synchro tests
158 T	..Transistor tests

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CROSS-REFERENCE ART COLLECTION

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800	DIVINING RODS

1 WITH MEANS RESPONSIVE TO EXTERNAL NONELECTRICAL CONDITION
2 .Light responsive
3 .Temperature responsive
4 .Moisture responsive
5 .Responsive to approach or passage of an object
6 .Flame responsive (e.g., flame acts as a rectifier in circuit)
7 WITH PROTECTIVE DEVICES FOR PERSONNEL
8 WITH PROTECTIVE MEANS FOR TUBES (E.G., AGAINST OVERLOAD, POWER SURGE)
9 .With control means for plate voltage or current
10 .With means to limit grid voltage and/or current
11 .Temperature control
12 WITH DIVERSE-TYPE ART DEVICE
13 WAVE CONVERSION SYSTEM (E.G., SINE WAVE TO PULSE WAVE)
14 .With synthesizing or quantizing means
15 .Frequency conversion systems
16 ..Harmonic or subharmonic generating means
17 ...With plural outputs
18 ....Selectively
19 ...With particular tube and/or distributed parameter elements
20 ..Frequency doubling means
21 .A.C. wave input to A.C. wave output
22 ..With plural conversion means (e.g., sine wave to sawtooth) to sine wave
23 ..With harmonic adding means
24 ..With phase conversion means (i.e., M-phase to N-phase)
25 ..With frequency dividing means
26 .A.C. wave input to rectified output
27 .Pulse wave input to A.C. wave output
28 .A.C. wave input to complex or pulse wave output
29 ..With plural pulse train outputs
30 ..With frequency dividing means
31 ..With amplitude control and/or limiting means
32 ..With rectifier means
33 ..With saturable inductance means
34 .Pulse wave input to pulse wave output
35 ..Rectangular pulse to sawtooth pulse
36 ..With plural conversions (e.g., triangular to sawtooth to square wave)
38.1 ..With pulse frequency multiplying means (i.e., single pulse successive pulse output)
53 ..With amplitude variation means (i.e., one pulse height to another)
54 ...With limiting and/or clipping means
55 ..With pulse delay and/or phase control means
56 ...With passive delay line means
57 ..Plural pulse output with opposite polarities
58 ..With duration control means (e.g., pulse stretching)
59 PULSE GENERATING MEANS
60 .With plural paths in network
61 ..With common output
62 .With plural outputs
63 .With synchronizing or timing means
64 .With electron beam-type tube
65 .With electromagnetic pulse forming means
66 .Delay line and/or capacitor storage means charged or discharged through or by a relaxation oscillator-type circuit
67 .Delay line or capacitor storage means charges or discharges through a tube
68 ..With relaxation oscillator in input of discharge tube
69 CONTROL SYSTEMS
70 .Plurality of load devices
71 .With plural paths in circuits
72 .With timing and/or synchronizing means
73 ..Intermittent control
74 ..With pulse forming means
75 ..Sequencing means
76 .Electron switching tube discharge path in series with an electrical circuit
77 ..With timing means
78 ...Utilizing a plurality of capacitor charging and discharging means
79 ..Plural tubes complete plural separate circuit means
80 ..Plural tubes complete single circuit means
81 ...Tubes connected in inverse parallel
82 ..Single tube completes circuit
83 ...Responsive to plurality of control signals
84 ...Gaseous tube
85 .Electron tube controls external circuit control means
86 ..With timing means (closing means)
87 ...With mechanical switching means in control circuit of tube
88 ..Plural tubes with plural electromagnetic circuit control means
89 ..Plural tubes with single electromagnetic circuit control means
90 ..Single tube
91 .Electron tube gating means
95 ..Plural gating means
96 ...Parallel-connected
97 ...Selectively operated
98 ..With cathode follower output
99 ..With inhibiting means
100 ..Shunt-controlled
101 ..Plural tube gating means (single gate)
102 ..Single tube gating means
103 DISTRIBUTION AND COMBINING SYSTEMS
104 .Plural channel input to single channel output
105 .Single channel input to plural channel output
106 ..Plural tube stages successively or sequentially conducting
107 ..Single tube with plurality of outputs
108 PULSE CHARACTERISTIC SELECTING MEANS
109 .By time or phase relationship
110 ..With coincidence means
111 .By width
112 ..With plural paths in circuit
113 ..With shock-excited circuit
114 .By shape or slope
115 .By amplitude
116 ..With plural channels
117 ...With combining means in output
118 .By polarity
119 .With decoding means
120 .Missing pulse detecting means
121 STORAGE SYSTEMS INCLUDING A TUBE OR TUBES
122 .With plural cascaded stage storage means
123 .Cathode ray tube storage means
124 ..With storage scan and/or reading scan means
125 .Gas tube means
126 .With single tube storage means
127 INTEGRATING OR DIFFERENTIATING NETWORKS
128 .With single tube (e.g., Miller integrator type)
129.1 WITH TIME INTERVAL DETERMINING MEANS

	WITH TIME INTERVAL DETERMINING MEANS
130.1	.Plurality of intervals sequentially
131.1	.With electromechanical relay means
132	OUTPUT INDICATIVE OF RATE OF CHANGE OR INPUT VOLTAGE
133	OUTPUT IS A FUNCTION OF PHASE OR FREQUENCY DIFFERENCE BETWEEN PLURAL INPUT SIGNALS (E.G., SYNCHRONOUS DETECTORS)
134	.Fixed frequency reference compared with a variable frequency
135	OUTPUT IS A FUNCTION OF DIFFERENCE IN AMPLITUDE BETWEEN TWO CHARACTERISTICS OF OR POINTS ON A SINGLE INPUT WAVE
136	OUTPUT IS A FUNCTION OF A SPECIFIC OR PREDETERMINED NUMBER OF COMPLETE CYCLES OF AN A.C. INPUT WAVE
137	OUTPUT IS A SELECTED ONE OF A PLURALITY OF SIMULTANEOUSLY APPLIED INPUT SIGNAL WAVES
138	OUTPUT IS PRESENT ONLY AT A PREDETERMINED FREQUENCY OF A SIGNAL INPUT
139	OUTPUT IS A FUNCTION OF A PRESELECTED SIGNAL COMPONENT IN A COMPOSITE WAVE INPUT (E.G., SYNCHRONIZING PULSE SEPARATORS)
140	OUTPUT IS A FUNCTION OF FREQUENCY REPETITION RATE OR POLARITY OF A SINGLE INPUT
141	.Output proportional to the deviation from a reference frequency
142	WITH OUTPUT AS A NONLINEAR FUNCTION OF INPUT
143	.With plural channels in circuit
144	.Output indicative of square law function or input (as either square or square root)
145	.Output a logarithmic function of input
146	VOLTAGE SIGNAL AMPLITUDE COMPARISON MEANS
147	.With plural paths in circuit
148	.With indicating means
149	.With filter and/or detector means
150	WITH OUTPUT REPRESENTATIVE OF OR DEPENDENT UPON A PARTICULAR OR INSTANTANEOUS AMPLITUDE OF THE INPUT
151	.With sampling and/or storage means in circuit
152	CHANNEL SELECTING MEANS
153	.With single input, plural output
154	.With plural input, single output
155	PHASE CORRECTION OR CONTROL SYSTEMS
156	OUTPUT A COMPOSITE OF A PLURALITY OF INPUTS
157	.Pulse wave inputs
158	OUTPUT A RESULTANT FUNCTION OF A PLURALITY OF INPUTS
159	.Sum and carry systems (e.g., half adders)
160	.Output is product of plural inputs
161	.Output is quotient of plural inputs
162	DISTORTION MEASURING AND/OR CORRECTION MEANS
163	.With plural channels
164	.With pulse regenerating means
165	UNWANTED WAVE COMPONENT ELIMINATING MEANS
166	.Quadrature component selection or rejection
167	.With filter means
168	AMPLITUDE CONTROL MEANS
169	.With amplitude limiting means
170	..With tuned circuit means
171	..With rectifier and/or nonlinear impedance
172	.With means to control current in the output
173	.With means to maintain constant level output
175	..With feedback means
176	WITH BOOTSTRAP CIRCUIT MEANS
177	ELECTRON TUBE DELAY MEANS
178	WITH PARTICULAR WAVE OUTPUT
179	.With synchronizing means
180	.With plural outputs
181	.Sawtooth or triangular wave output
182	..With cathode follower
183	..With constant current means in circuit
184	..With linearization means
185	..With slope and/or duration control means
186	.With step wave output
187	.With TV signal or complex pulse wave output
188	.With test pattern waveform
189	.With marker pulse wave output
190	WITH PARTICULAR CIRCUIT MEANS
191	.Plural stages including multivibrator type
192	..With feedback means between stages
193	.Multivibrator type
194	..With control tube
195	..With gating means
196	..With particular pulsing or triggering means
197	..With further tube in output
198	..With transistor in tube circuit
199	..With diverse-type tubes
200	..With gross coupling through a tube or tubes
201	..With synchronizing means
202	..With tubes in series (e.g., cascade connected)
203	..With cathodes connected
204	..With output control means
205	..With three or more conditions of equilibrium
206	..Bistable type
207	..Monostable type
208	.With bridge circuit
209	.With particular feedback means
210	.With gaseous tube
211	..With particular electrode arrangement
212	.With diverse-type vacuum tubes
213	.With cathode follower
214	.Tube or tubes perform plural functions
215	.With oscillation prevention means
216	.With distributed parameter circuit
217	.With plate supply voltage variation compensation means
218	.With equipotential surface cathode heating means
219	.Control circuit utilizes internal tube structure
220	.With space charge grid (e.g., virtual cathode)
221	.With particular coupling or decoupling means
222	.With particular connecting means
223	.Including oscillatory or shock-excited circuit
224	.One tube acts as a standby for another
225	.With particular grid control means
226	.With particular bias means
227	.Including electron or other charged particle beam tube
228	..With beam focusing, centering or dispersing means
229	..With beam deflecting means
230	...Magnetic
231	..Cathode ray type
232	..Klystron type
233	..With particle accelerating or decelerating means
234	...Cyclotron type

WITH PARTICULAR CIRCUIT MEANS
.Including electron or other charged particle beam tube
..With particle accelerating or decelerating means
235 ...Synchrotron type
236 ...Bevatron type
237 ...Betatron type
238 ...Rotatron type
239 .With speaker field coil
240 .With hum or microphonic eliminating means
241 .Negative resistance type
242 ..Secondary emissive type
243 ..Electron multiplier type
244 ..Magnetic field-controlled type
245 .With retarding field means (e.g., Barkhausen-Kurz)
246 .Single tube
247 ..Triggered circuit
248 ...Bistable (e.g., phantastron)
249 WITH PARTICULAR TUBE STRUCTURE
250 .Gas tube
251 ..With particular electrode arrangement
252 .Vacuum tube type
253 ..Magnetically controlled
254 ..Beam tube structure
255 ...Cathode ray type
256 ...Electron or particle acceleration or deceleration type
257 ...Negative resistance type
258 WITH PARTICULAR SOURCE OF POWER OR BIAS VOLTAGE
259 .With protective means
260 .With A.C. or D.C. input selectively or alternately
261 .With oscillator and/or interrupter
262 .Fluctuating or A.C. source with rectifier and/or filter means
263 ..With particular filter means
264 ..With battery connected across rectifier means
265 .With hum or interaction prevention means
266 ..With means to supply separate out of phase voltages to plate and grid circuit
267 .With voltage regulating means
268 .Raw A.C. to plate and/or filament circuits
269 .With thermoelectric generating means
270 .With particular filament heating circuit means
271 MISCELLANEOUS

300 FREQUENCY SHIFT KEYING OR MINIMUM SHIFT KEYING DEMODULATOR

301 .Including discrete semiconductor device

302 .Input signal combined with local oscillator or carrier frequency signal

303 .Including logic element (e.g., logic gate or flip-flop

304 PHASE SHIFT KEYING OR QUADRATURE AMPLITUDE DEMODULATOR

305 .Including discrete semiconductor device

306 .Input signal combined with local oscillator or carrier frequency signal

307 ..Including phase or frequency locked loop

308 ...With parallel signal combiners (e.g., Costas loop)

309 ....Including logic element (e.g., logic gate or flip-flop)

310 .Including logic element (e.g., logic gate or flip-flop)

311 PULSE OR INTERRUPTED CONTINUOUS WAVE DEMODULATOR

312 .Pulse width demodulator

313 .Pulse position, frequency, phase or spacing demodulator

314 ..Including discrete semiconductor device

315 FREQUENCY MODULATION DEMODULATOR

316 .Plural demodulation

317 ..Including amplitude demodulation

318 .Having specific distortion, noise or other interference prevention, reduction or compensation

319 ..Using feedback to reduce distortion, noise or other interference

320 ..By cancelling distortion, noise or other interference

321 ..Using amplitude limiting within the demodulator

322 .Including microwave or distributed parameter structure

323 .Input signal combined with local oscillator or carrier frequency signal

324 ..Input signal applied directly to local oscillator

325 ..Including phase or frequency locked loop

326 ...Including discrete semiconductor device

327 .Input signal split into plural signals

328 ..Including piezoelectric resonant element

329 ..Using a transformer to split input signal

330 ...Signals taken from primary and secondary windings

331 ....Including plural detector diodes (e.g., ratio detector type)

332 ...Signals taken from plural secondary windings

333 ....Including plural detector diodes (e.g., ratio detector type)

334 .....Including resonant circuits tuned above and below input signal carrier frequency

335 ...Including plural detector diodes (e.g., ratio detector type)

336 ..Input signal combined with phase shifted or delayed portion of input signal

337 ...Including LC resonant phase shift circuit

338 ..Input signal split by LC resonant circuit

339 ...Including LC resonant circuits tuned above and below input signal carrier frequency

340 ..Including plural detector diodes (e.g., ratio detector type)

341 .Input signal converted to and processed in pulse form (e.g., pulse counter or digital type demodulator)

342 ..Including discrete semiconductor device

343 ..Including digital logic circuitry

344 .Including signal passed through single demodulating path including resonant circuit

345 PHASE MODULATION DEMODULATOR

346 .Input signal combined with local oscillator or carrier frequency signal

347 AMPLITUDE MODULATION DEMODULATOR

348 .Having plural demodulation outputs

349 .Having specific distortion, noise or other interference prevention, reduction or compensation

350 ..Automatic amplitude stabilization or control

351 ..Nonlinearity reduction or compensation

352 ..Temperature compensation

353 ..Noise reduction or compensation

354 .Including microwave or distributed parameter structure

355 ..With electron discharge device

356 .Suppressed carrier double sideband type

357 .Single or vestigial sideband type

358 .Input signal combined with local oscillator or carrier frequency signal (e.g., synchronous demodulator)

359 ..Input signal applied directly to local oscillator

360 ..Including phase or frequency locked loop

361 ..Including sampling, gating, or switching

362 ...With three or more terminal discrete semiconductor device

363 .Input signal split into plural signals

364 ..Including three or more terminal discrete semiconductor device

365 ..Including diode demodulator device

366 ...Plural diodes

367 .Including regenerative feedback in non-oscillating demodulator

368 .Electron discharge demodulator device having more than two electrodes (e.g., triode, tetrode etc.)

369 .Including three or more terminal discrete semiconductor demodulator device

370 .Including diode demodulator device

371 .Coherer type demodulator

372 MISCELLANEOUS

CLASS 330 AMPLIFIERS

DECEMBER 1990

1 R	WITH DIVERSE-TYPE ART DEVICE
1 A	..With process control system
2	WITH AMPLIFIER CONDITION INDICATING OR TESTING MEANS
3	WITH PLURAL DIVERSE-TYPE AMPLIFYING DEVICES
4	WITH MASER-TYPE AMPLIFYING DEVICE
4.3	.Optical or quasi-optical type (e.g., laser, laser modulator, iraser)
4.5	PARAMETRIC AMPLIFIERS
4.6	.Traveling wave type
4.7	..Electron beam device
4.8	.Gyromagnetic type (e.g., ferrite)
4.9	.Semiconductor type (e.g., with semiconductor diode)
5	WITH SOLID ELEMENT WAVE PROPAGATING AMPLIFYING DEVICE
5.5	.Phonon type (e.g., ultrasonic wave propagating device)
6	WITH HALL EFFECT TYPE MEANS
7	WITH CAPACITIVE AMPLIFYING DEVICE
8	WITH SATURABLE REACTOR-TYPE AMPLIFYING DEVICE
9	WITH PERIODIC SWITCHING INPUT-OUTPUT (E.G., FOR DRIFT CORRECTION)
10	MODULATOR-DEMODULATOR-TYPE AMPLIFIER
11	WITH D.C. REINSERTION CIRCUIT
250	WITH SEMICONDUCTOR AMPLIFYING DEVICE (E.G., TRANSISTOR)
251	.Including Class D amplifier
252	.Including differential amplifier
253	..Having field effect transistor
254	..Having gain control means
255	..Having push-pull amplifier stage
256	..Having temperature compensation means
257	..Having current mirror amplifier
258	..Having common mode rejection circuit
259	..Having D.C. feedback bias control for stabilization
260	..Having signal feedback means
261	..Having particular biasing arrangement
262	.Including push-pull amplifier
263	..Having complementary symmetry
264	...And field effect transistor
265	...And feedback means
266	...And temperature compensation
267	...And particular biasing arrangement
268	....To eliminate crossover distortion
269	..Having field effect transistor
270	..Having D.C. feedback bias control for stabilization
271	..Having signal feedback means
272	..Having temperature compensating means
273	..Having particular biasing arrangement
274	...To eliminate crossover distortion
275	..Having balanced to unbalanced circuitry and vice versa
276	..Having transformer
277	.Including field effect transistor
278	.Including gain control means
279	..And significant control voltage developing means
280	...With delay means
281	...With time constant means
282	..Having feedback means acting as variable impedance
283	...Having emitter degeneration
284	..Having attenuation means in signal transmission path
285	..Having particular biasing means
286	.Including distributed parameter-type coupling
287	..Of diode type
288	.Including current mirror amplifier
289	.Including temperature compensation means
290	.Including D.C. feedback bias control for stabilization
291	.Including signal feedback means
292	..Having compensation for interelectrode impedance
293	..Having negative feedback
294	..Having frequency-responsive means or phase-shift means in feedback path
295	.Including plural amplifier channels
296	.Including particular biasing arrangement
297	.Including particular power supply circuitry
298	.Including protection means
299	.Including combined diverse-type semiconductor device
300	..Bipolar or unipolar (FET)
301	.Including balanced to unbalanced circuits and vice versa
302	.Including frequency-responsive means in the signal transmission path
303	..Including an active device in the filter means
304	..And equalizing means
305	..And tuning means
306	..And bandpass, broadband (e.g., wideband) or sidepass means
307	.Integrated circuits
308	.Including atomic particle or radiant energy impinging on a semiconductor
309	.Involving structure of three diverse function electrode type
310	.Including plural stages cascaded
311	..Having different configurations
41	WITH GAS OR VAPOR TUBE AMPLIFYING DEVICE
42	WITH SECONDARY ELECTRON EMISSION TUBE AMPLIFYING DEVICE
43	WITH TRAVELING WAVE-TYPE TUBE
44	WITH ELECTRON BEAM TUBE AMPLIFYING DEVICE
45	.Having electrode coupled to cavity resonator
46	.Having deflecting means
47	WITH MAGNETICALLY INFLUENCED DISCHARGE DEVICE (E.G., MAGNETRONS)
48	.Having signal applied to magnetic means
49	WITH VACUUM TUBE HAVING DISTRIBUTED PARAMETER IMPEDANCE CHARACTERISTICS
50	WITH DUMMY TUBE
51	COMBINED WITH AUTOMATIC AMPLIFIER DISABLING SWITCH MEANS
52	WITH PILOT FREQUENCY CONTROL MEANS
53	WITH DISTRIBUTED PARAMETER-TYPE COUPLING MEANS
54	.Distributed amplifier
55	.Push-pull
56	.Waveguide, cavity, or concentric line resonator
57	.Artificial line
58	WITH ROTATING DYNAMOELECTRIC AMPLIFYING DEVICE
59	HAVING LIGHT-CONTROLLED OR ACTIVATED DEVICE (I.E., NOT LIGHT SIGNAL)
60	HAVING MAGNETOSTRICTIVE-TYPE AMPLIFYING DEVICE
61 R	WITH RESISTIVE-TYPE AMPLIFYING DEVICE
61 A	..Negative resistance amplifiers
62	.Magnetoresistive type
63	WITH MAGNETIC MEANS AMPLIFYING DEVICE
64	WITH SPACE CHARGE GRID TUBE
65	INVOLVING STRUCTURE OTHER THAN THAT OF TRANSFORMERS PER SE
66	.With printed circuits
67	.With capacitive structure
68	.With shielding means
69	SUM AND DIFFERENCE AMPLIFIERS
70	ANODE ENERGIZED THROUGH DISCHARGE PATH OF CONTROLLED VACUUM TUBE
71	.Plural discharge paths traversed by anode supply

ANODE ENERGIZED THROUGH DISCHARGE PATH OF CONTROLLED VACUUM TUBE
.Plural discharge paths traversed by anode supply
72 ..Amplifier devices in arms of a bridge
73 .Plural outputs
74 .Separate signal inputs to series devices
75 SIGNAL FEEDBACK
76 .Compensating for inter-electrode impedance (e.g., neutralization)
77 ..At least one push-pull stage
78 ..To or from electrode common to input and output
79 ..By transformer feedback
80 ..By coil in parallel to and resonating with inter-electrode capacity
81 .At least one push-pull signal stage
82 ..Positive and negative feedback
83 ..Including D.C. path for signal feedback
84 .Plural amplifier channels
85 .Amplifier in signal feedback path
86 .Variable impedance in feedback path varied by separate control path
87 .Cathode impedance feedback
88 ..Cascade amplifier stages with cathode-cathode feedback
89 ...Between adjacent stages
90 ..Combined with diverse-type feedback coupling
91 ...Diverse feedback to or from cathode
92 ....Feedback to cathode impedance of a prior stage
93 ...Including positive feedback
94 ..Frequency responsive means in cathode impedance feedback path
95 ..Nonlinear impedance means in cathode impedance feedback path
96 .Combined with control of bias voltage of signal amplifier
97 .Including D.C. path for signal feedback
98 .In cascade amplifiers
99 ..Multiple feedback
100 ...A feedback to input of a prior stage
101 .Positive and negative feedback in same path at different frequencies
102 .Current and voltage feedback
103 .Multiple feedback paths
104 ..Positive and negative feedback
105 .From impedance in series with output load (e.g., current feedback)
106 .In series with input source
107 .Phase shift means in loop path
108 .Potentiometer common to signal and feedback path
109 .Frequency responsive feedback means
110 .Nonlinear impedance element in loop path
111 .To or from an auxiliary grid or to the anode
112 .Positive feedback
113 POLYPHASE POWER SUPPLY (I.E., FOR AN ELECTRODE, CATHODE HEATER, OR FILAMENT)
114 UNRECTIFIED A.C. POWER SUPPLY FOR AN ELECTRODE (I.E., NOT THE HEATER)
115 .Applied to filamentary cathode
116 WITH BALANCED-TO-UNBALANCED COUPLING
117 WITH UNBALANCED-TO-BALANCED COUPLING
118 INCLUDING A PUSH-PULL STAGE
119 .Coupling to or from cathode in push-pull
120 .Interstage coupling between push-pull
121 ..D.C. coupling
122 .Input and/or output coupling for push-pull
123 .Power or bias supply circuits and control thereof
124 R WITH PLURAL AMPLIFIER CHANNELS (E.G., PARALLEL AMPLIFIER CHANNELS)
124 D ..Redundant amplifier circuits
125 .D.C. and A.C. amplifier channels
126 .Amplifying different frequencies in different channels
127 WITH CONTROL OF POWER SUPPLY OR BIAS VOLTAGE
128 .Control means for anode of screen grid circuit
129 .With control of input electrode or gain control electrode bias
130 ..Bias controlled by separate external control source
131 ..Control of bias on separate gain control electrode
132 ..Frequency selective means to select control signal from amplifier channel
133 ..Different bias control means for different stages of cascade amplifier
134 ..Plural different bias control voltages provided by separate means
135 ..Amplitude limiting or bias voltage
136 ..Bias control signal from input of amplifier
137 ..Oscillator supplies or controls bias
138 ..Bias controlled by biased rectifier or discharge device
139 ..Electronic tube controls bias
140 ..Rectifier in bias control circuit
141 ..Time constant circuit in bias control circuit
142 ..Cathode resistor supplies bias (e.g., self-biasing circuits)
143 THERMALLY RESPONSIVE IMPEDANCE
144 VARIABLE IMPEDANCE FOR SIGNAL CHANNEL CONTROLLED BY SEPARATE CONTROL PATH
145 .Electron tube or diode as impedance
146 WHEATSTONE BRIDGE WITH AMPLIFIER IN AT LEAST ONE ARM
147 PLURAL SIGNAL INPUTS
148 PLURAL SIGNAL OUTPUTS
149 HUM OR NOISE OR DISTORTION BUCKING INTRODUCED INTO SIGNAL CHANNEL
150 CASCADED SIMILAR AMPLIFYING DEVICE OF DIFFERENT CHARACTERISTICS
151 WITH AMPLIFIER BYPASS MEANS (E.G., FORWARD FEED)
152 CASCADED DIFFERENTLY COUPLED BETWEEN STAGES
153 .Including a cathode follower stage
154 .Transformer or resonant circuit in interstage coupling (e.g., stagger tuning)
155 UNICONTROL OF COUPLING OR THE CIRCUITS ASSOCIATED THEREWITH
156 BOOTSTRAP COUPLING
157 INTERSTAGE COUPLING
158 .Coupling to cathode
159 ..D.C. coupling
160 .Coupling to plate or auxiliary grid
161 ..D.C. coupling
162 .Output coupling from grid
163 ..D.C. coupling
164 .With electronic tube or diode in coupling circuit
165 .Transformer coupling
166 ..With additional reactive coupling
167 ..With additional impedance connected to "P" or "S" circuits
168 ..From cathode
169 ..With means for adjusting inductive coupling
170 ..With shielding

INTERSTAGE COUPLING
.Transformer coupling
171 ..With transformer structure
172 .Coupling from cathode
173 ..D.C. coupling
174 .With electromechanical transducer (e.g., piezoelectric crystal)
175 .With lattice or Wheatstone bridge network in coupling circuits
176 .With T, H, or Pi network in coupling circuit
177 .With coupling or blocking capacitor
178 ..With R or L in series between stages
179 ..L in anode or grid circuit
180 ..With R in anode and grid circuit (RC coupling)
181 .D.C. coupled
182 ..With series reactive element between stages
183 ..With nonlinear device
184 ..With series resistance between stages
185 INPUT NETWORKS
186 .To cathode
187 ..D.C. coupled
188 .Transformer coupled
189 ..With additional impedance connected to "P" or "S" circuits
190 ..With transformer structure
191 .D.C. coupled
192 OUTPUT NETWORKS
193 .From cathode
194 ..D.C. coupled
195 .Transformer coupled
196 ..With additional impedance connected to "P" or "S" circuit
197 ..With transformer structure
198 .D.C. coupled
199 WITH POWER OR BIAS VOLTAGE SUPPLY
200 .For plural stage amplifier
201 ..Filamentary cathodes heated by anode current or anode supply source
202 .For anode
203 ..And input electrode
204 .For input electrode
205 ..And filamentary cathode
206 .For filamentary cathode
207 R MISCELLANEOUS
207 A ..Class D
207 P ..Amplifier protection means

94.1	MOLECULAR OR PARTICLE RESONANT TYPE (E.G., MASER)
1 R	AUTOMATIC FREQUENCY STABILIZATION USING A PHASE OR FREQUENCY SENSING MEANS
1 A	..AFC with logic elements
2	.Plural oscillators controlled
3	.Molecular resonance stabilization
4	.Search sweep of oscillator
5	.Magnetron oscillator
6	.Klystron oscillator
7	..Plural controls
8	.Transistorized controls
9	.Oscillator with distributed parameter-type discriminator
10	.Plural A.F.S. for a single oscillator
11	..Plural comparators or discriminators
12	...With phase-shifted inputs
13	..Motor control of oscillator
14	.With intermittent comparison controls
15	.Amplitude compensation
16	.Tuning compensation
17	.Particular error voltage control (e.g., intergrating network)
18	.With reference oscillator or source
19	..Spectrum reference source
20	..T.V. sync type
21	...Lock to power line
22	..Plural significant heterodyne stages
23	..Sensing modulation (e.g., frequency modulation controlled oscillator
24	...With motor comparator
25	..Signal or phase comparator
26	...Plural diode type
27	...Plural active element (e.g., triodes)
28	...Unilateral element (e.g., diode)
29	...Electromechanical
30	.With stable heterodyne oscillator or source
31	..Plural significant heterodyne stages
32	..With particular discriminator (e.g., LPF and HPF)
33	...Plural diode type
34	.Particular frequency control means
35	..Electromechanical (e.g., motor)
36 R	..Reactance device (e.g., variable capacitors, saturable inductors, reactance tubes, etc.)
36 C	....Capacitor controlled AFC
36 L	....Inductor controlled AFC
37	BEAT FREQUENCY
38	.Plural beating
39	..Single channel
40	.Frequency or amplitude adjustment or control
41	.Frequency stabilization
42	.With particular signal combining means (e.g., cavity mixer)
43	..With filter in mixer output circuit
44	WITH FREQUENCY CALIBRATION OR TESTING
45	POLYPHASE OUTPUT
46	PLURAL OSCILLATORS
47	.Oscillator used to vary amplitude or frequency of another oscillator
48	.Adjustable frequency
49	.Selectively connected to common output or oscillator substitution
50	.Cascade or tandem connected
51	..Frequency dividers
52	..Semiconductor (e.g., transistor)
53	..Frequency multiplier
54	..Diverse-type oscillators
55	.Synchronized, triggered or pulsed
56	.Parallel connected
57	RING OSCILLATORS
58	PLURAL FUNCTIONS SIMULTANEOUSLY
59	CONVERTIBLE (E.G., OSCILLATOR TO AMPLIFIER, ETC.)
60	SINGLE OSCILLATOR WITH PLURAL OUTPUT CIRCUITS
61	.Plural outputs of diverse wave form
62	WITH OSCILLATOR CIRCUIT PROTECTIVE MEANS
63	PROTECTIVE OF SAFETY DEVICES FOR PERSONNEL
64	WITH INDICATOR, SIGNAL, OR ALARM
65	WITH DEVICE RESPONSIVE TO EXTERNAL PHYSICAL CONDITION
66	.Temperature or light responsive
67	WITH ELECTROMAGNETIC OR ELECTROSTATIC SHIELD
68	WITH OUTER CASING OR HOUSING
69	.With temperature modifier
70	WITH TEMPERATURE MODIFIER
71	RAW A.C. USED AS SOURCE OF POWER OR BIAS
72	ELECTRON-COUPLED TYPE
73	.Piezoelectric crystal resonator
74	COMBINED WITH PARTICULAR OUTPUT COUPLING NETWORK
75	.Space discharge or unilaterally conductive device in output network
76	..Harmonic producing or selecting network
77	.Wave filter
78	ELECTRICAL NOISE OR RANDOM WAVE GENERATOR
79	BEAM TUBE
80	.With beam sweeping or deflecting means
81	.With electron bunching or velocity variation means
82	..Traveling wave type
83	..Multicavity type (e.g., Klystron)
84	..Reflex type (i.e., with repeller electrode)
86	WITH MAGNETICALLY CONTROLLED SPACE DISCHARGE DEVICE (E.G., MAGNETRON)
87	.With particular pulsing means
88	.With frequency stabilization
89	.With secondary emissive electrode
90	.With frequency adjustment
91	.With undesired mode suppression or selection means
92	RETARDING FIELD TUBE-TYPE OSCILLATORS (E.G., BARKHAUSEN KURZ)
93	.With distributed parameter resonator
95	BUTTERFLY RESONATOR
96	WITH DISTRIBUTED PARAMETER RESONATOR
97	.Tube enclosed by resonator structure
98	..Disk seal tube (e.g., lighthouse, pencil tube)
99	.Parallel wire type
100	..Push-pull type
101	.Coaxial or shielded line type
102	..Push-pull type
103	TUBE STRUCTURE FORMS INDUCTIVE PART OF RESONANT CIRCUIT
104	TRANSIT TIME OSCILLATOR
105	WITH PARASITIC OSCILLATION CONTROL OR PREVENTION MEANS
106	WITH PERIODOIC OR REPETITIOUS AMPLITUDE VARYING MEANS (E.G., TREMOLO)
107 R	SOLID STATE ACTIVE ELEMENT OSCILLATOR
107 DP	..Significant distributed parameter resonator (e.g., cavity)
107 P	...Parallel-connected oscillator devices
107 SL	...Stripline type
107 C	...Coaxial type
107 A	..Acoustoelectric device oscillators
107 G	..Gunn-type bulk effect device oscillators
107 S	..Superconductive device oscillators
107 T	..Tunnel diode oscillators
108 R	.Transistors
108 A	...Use of complimentary-type transistors
108 B	...Phase shift oscillator
108 C	...Integrated circuit oscillators

	SOLID STATE ACTIVE ELEMENT OSCILLATOR
	.Transistors
108 D	...Integrated modules with discrete elements oscillators
109	..Amplitude stabilization and control
110	..Bridge type
111	..Relaxation oscillator
112	...Blocking oscillator type
113 R	...Multivibrator type
113 A	.....Saturable core controlled converters
113 S	.....Converter using silicon control rectifiers
114	..Push-pull
115	..Negative resistance
116 R	..Electromechanical resonator controlled
116 FE	....Field-effect transistor active element
116 M	....Electromechanical resonators other than piezoelectric crystals
117 R	..L-C type
117 FE	....Field-effect transistor active element
117 D	....Distributed parameter resonator transistor oscillators
126	GASEOUS SPACE DISCHARGE DEVICE
127	.Spark or open arc type
128	.Drives shock excited L.C. circuit
129	.Relaxation oscillator
130	..Plural gaseous devices
131	..Discharge device or rectifier in "C" or "L" charging or discharging circuit
132	NEGATIVE RESISTANCE OR NEGATIVE TRANSCONDUCTANCE OSCILLATOR
133	.Secondary emission (e.g., dynatron)
134	.Transitron type
135	PHASE SHIFT TYPE
136	.Zero phase shift
137	.With R.C. ladder-type phase shift network
138	BRIDGE TYPE
139	.Piezoelectric crystal in bridge
140	.R.C. or R.L. type
141	..Wien bridge
142	..Double T bridge
143	RELAXATION OSCILLATORS
144	.Multivibrators
145	..With sync, triggering or pulsing circuit
146	.Blocking oscillators
147	..Using discharge device with plural grids
148	..With 3 or more winding feedback transformers
149	..With sync, trigger, or pulsing circuit (e.g., self-pulsing)
150	.Output supplied to another discharge device circuit
151	.Involving resonant or inductive wave forming circuit or transformer
152	.Multi-grid discharge device in charged capacitor circuit
153	.With sync, trigger or pulsing circuit
154	ELECTROMECHANICAL RESONATOR
155	.With optical, piezoelectric or acoustic coupling means
156	.Vibrating reed or string type (e.g., tuning fork)
157	.Magnetostrictive
158	.Crystal
159	..Plural tube
160	..With means to limit crystal current or voltage
161	..With crystal substitution
162	..Plural crystals in circuit
163	..Crystal having three or more electrodes in circuit
164	..Anode or cathode to grid crystal circuit
165	SHOCK EXCITED RESONANT CIRCUIT
166	.With keying means of the active element type (e.g., burst generator)
167	L-C TYPE OSCILLATORS
168	.Plural tubes
169	.Anode to cathode coupled or connected resonant circuit
170	.Anode to grid coupled or connected resonant circuit
171	.Grid to cathode coupled or connected resonant circuit
172	WITH SYNCHRONIZING, TRIGGERING OR PULSING CIRCUITS
173	.Triggering or pulsing (e.g., burst generators)
174	..Self-quenched
175	FREQUENCY STABILIZATION
176	.Temperature or current responsive means in circuit
177 R	WITH FREQUENCY ADJUSTING MEANS
177 V	..With voltage sensitive capacitor
178	.Cyclic frequency sweeping means (e.g., vibrato)
179	.Step-frequency change (e.g., band selection, frequency-shift keying)
180	.Reactance tube type
181	.Variable inductance device (e.g., saturable core or adjustable vane inductor)
182	AMPLITUDE CONTROL OR STABILIZATION
183	.Automatic
184	HAVING DISCHARGED DEVICE OR PARTICULAR CONSTRUCTION
185	WITH PARTICULAR SOURCE OF POWER OR BIAS VOLTAGE
186	.Regulated
187	MISCELLANEOUS OSCILLATOR STRUCTURES
	******************************
	DIGESTS
	******************************
DIG 2	Phase locked loop having lock indicating or detecting means
DIG 3	Logic gate active element oscillator

CLASS 332 MODULATORS

100 FREQUENCY SHIFT KEYING MODULATOR OR MINIMUM SHIFT KEYING MODULATOR
101 .Including logic element (e.g., logic gate or flip-flop)
102 .Including discrete semiconductor device
103 PHASE SHIFT KEYING MODULATOR OR QUADRATURE AMPLITUDE MODULATOR
104 .Including logic element (e.g., logic gate or flip-flop)
105 .Including discrete semiconductor device
106 PULSE OR INTERRUPTED CONTINUOUS WAVE MODULATOR
107 .Including stabilization or alternatively distortion, noise or other interference prevention, reduction or compensation
108 .Plural modulation
109 .Pulse width modulator
110 ..Including discrete semiconductor device having three or more electrodes
111 ..Including electron discharge device
112 .Pulse position, frequency, phase, or spacing modulator
113 ..Including discrete semiconductor device having three or more electrodes
114 ..Including electron discharge device
115 .Pulse amplitude modulator
116 ..Including discrete semiconductor device having three or more electrodes
117 FREQUENCY MODULATOR
118 .Including measuring or indicating
119 .Plural modulation
120 ..Including amplitude modulation
121 ...Including electron discharge device
122 ..Including electron discharge device
123 .Including stabilization or alternatively distortion, noise or other interference prevention, reduction, or compensation
124 ..Nonlinearity reduction or compensation
125 ..Automatic amplitude stabilization or control
126 ..Automatic frequency stabilization or control
127 ...Phase or frequency locked loop
128 ....Modulating signal applied to plural elements of the loop
129 .Including microwave or distributed parameter structure
130 ..With discrete semiconductor device
131 ..With electron discharge device
132 ...Magnetron type
133 ...Klystron type
134 ...Travelling wave type
135 .Including discrete semiconductor device
136 ..With varactor
137 .Including electron discharge device
138 ..Particular oscillator circuit
139 ...Crystal oscillator type
140 ....With separate modulator tube (e.g., reactance tube)
141 ...L-C oscillator type
142 ....With separate modulator tube (e.g., reactance tube)
143 .....Plural modulator tubes
144 PHASE MODULATOR
145 .Including amplitude modulator
146 .Including discrete semiconductor device
147 .Including electron discharge device
148 ..Push-pull circuit
149 AMPLITUDE MODULATOR
150 .Including measuring or indicating
151 .Plural modulation
152 ..Including discrete semiconductor device
153 ..Including electron discharge device
154 ...Push-pull circuit
155 .Percent modulation control or automatic amplitude control of carrier or modulating signal
156 ..Overmodulation prevention
157 ..Average carrier amplitude controlled by modulating signal
158 ..Carrier output suppressed during absence of modulating signal
159 .Including stabilization or alternatively distortion, noise or other interference prevention, reduction or compensation
160 ..Reduction or compensation of nonlinearity in modulation characteristic
161 ..Reduction of carrier phase or frequency variations or modulation
162 ..Using feedback to reduce distortion, noise or other interference
163 .Including microwave or distributed parameter structure
164 ..With discrete semiconductor device
165 ..With electron discharge device
166 ...Magnetron type
167 .Suppressed carrier double sideband type
168 ..Including discrete semiconductor device
169 ..Including electron discharge device
170 .Single or vestigial sideband type
171 ..Including electron discharge device
172 .Modulating signal applied to a bridge circuit
173 .Magnetic field varied by modulating signal
174 .Resistive or dissipative device controlled by modulating signal (e.g., loss modulator)
175 .Variable reactance controlled by modulating signal
176 .Nonlinear device controlled by modulating signal
177 ..Nonlinear discrete semiconductor device
178 .Including discrete semiconductor device
179 .Including electron discharge device
180 ..Push-pull circuit
181 ..Plate circuit modulation
182 ..Grid circuit modulation
183 MODULATION CONVERTER HAVING PRE-MODULATED INPUT (E.G., FM TO AM)
184 .Between diverse pulse modulation types
185 MISCELLANEOUS

CLASS 333 WAVE TRANSMISSION LINES AND NETWORKS

DECEMBER 1990

1	PLURAL CHANNEL SYSTEMS
1.1	.Nonreciprocal gyromagnetic type (e.g., circulators)
2	.With automatic control
3	..Line substitution
4	.With balanced circuits
5	..Plural balanced circuits
100	.Having branched circuits
101	..Including switching means
102	...Having gyromagnetic operating means
103	...Having semiconductor operating means
104	....Using TEM lines
105	...Having mechanical switching means
106	....Using rotary switching means
107	.....For TEM lines
108	.....For waveguide
109	..Using directional coupler
110	...For providing frequency separation
111	...For providing adjustable coupling
112	...Having lumped parameters or impedances
113	...Having parallel-guide waveguide
114	...Having crossed-guide waveguide
115	...Having TEM lines
116	....Using stripline
117	..Including hybrid-type network
118	...Having lumped parameters or impedances
119	....Using transformer coil
120	...Having hybrid ring junction
121	...Having hybrid-T (e.g., magic-T)
122	....Using waveguide
123	...Having coaxial element
124	..With impedance matching
125	...Including long line element
126	....For providing frequency separation
127	....Using TEM lines
128	.....Stripline
129	...For providing frequency separation
130	...Using resistors only
131	...Using coupled windings
132	..For providing frequency separation
133	...Utilizing electromechanical transducer
134	...Utilizing long line element
135	....Including waveguide element
136	..Including long line element
137	...Using waveguide
12	TRANSMISSION LINE INDUCTIVE OR RADIATION INTERFERENCE REDUCTION SYSTEMS
13	RESONATOR-TYPE BREAKDOWN DISCHARGE SYSTEMS (E.G., T-R OR R-T SYSTEMS)
14	AMPLITUDE COMPRESSION AND EXPANSION SYSTEMS (I.E., COMPANDERS)
15	PILOT LINE-CONTROLLED SYSTEMS
16	PILOT CURRENT-CONTROLLED SYSTEMS
17.1	AUTOMATICALLY CONTROLLED SYSTEMS
17.2	.Limiting of amplitude
17.3	.Impedance matching
18	.With control of equalizer and/or delay network
19	DIFFERENTIATING OR INTEGRATING SYSTEMS
20	WAVE-SHAPING
21 R	WAVE MODE CONVERTERS
21 A	..Polarization converters
22 R	DISSIPATING TERMINATIONS FOR LONG LINES
22 F	..Fluid-cooling
23	ARTIFICIAL LINES
24 R	COUPLING NETWORKS
24 C	..Capacity coupling
24.1	.Nonreciprocal gyromagnetic type (e.g., directional phase shifters)
24.2	..Nonreciprocal attenuators or isolators
24.3	..Nonreciprocal polarization rotators
25	.Balanced to unbalanced circuits
26	..Having long line elements
27	.Interlinking long line
28 R	.Equalizers
28 T	...Audio tone control
138	.Delay lines including a lumped parameter
139	..Variable parameter
140	..Physical structure
141	.Delay lines including elastic bulk wave propagation means
142	..Multipath propagation
143	...Spurious signal reduction
144	..Variable delay
145	..Nonuniform propagation path
146	..Helical propagation path
147	..Propagation path has significant chemical or physical properties
148	..Including magnetostrictive transducers
149	..Significant transducer structure
150	.Delay lines including elastic surface wave propagation means
151	..Spurious signal or mode cancellation means
152	..Variable delay
153	..Including discontinuities within propagation means
154	..Significant transmitting or receiving transducer structure
155	..Temperature stabilization or compensation
156	.Delay lines including long line elements
157	..Waveguide
158	...Including ferrite means
159	...Having mechanically movable delay control means
160	..Coaxial line
161	..Planar line structure (e.g., stripline)
162	..Helical line structures and lines developed from a helical structure
163	...Having plural concentric helices
164	..Control of delay with semiconductive means
32	.With impedance matching
33	..Having long line elements
34	...Tapered
35	...Quarter-wave transformer type
165	.Frequency or time domain filters and delay lines utilizing charge transfer devices
166	.Time domain filters
167	.Frequency domain filters utilizing only lumped parameters
168	..Including recurrent sections
169	..Wheatstone or lattice type
170	..Bridge type
171	...With variable response
172	..RC or RL type
173	..Synchronous filters
174	..With variable response
175	..Resonant, discrete frequency selective type
176	...Including specific frequency rejection means
177	..Transformer coupled
178	...Including bandwidth adjusting, shaping, or stabilization means
179	...With permeability tuning means
180	...With variable coupling means
181	..Smoothing type (e.g., direct current power supply filters or decoupling filters)
182	...Feedthrough type
183	....Resiliently mounted components
184	...Monolithic structure
185	..Having significant physical structure
186	.Electromechanical filter
187	..Using bulk mode piezoelectric vibrator
188	...With means for varying response
189	...Plural coupled vibrators

	COUPLING NETWORKS
	.Electromechanical filter
	..Using bulk mode piezoelectric vibrator
	...Plural coupled vibrators
190	....Lattice structure
191	....Monolithic structure
192	.....With electrical coupling
193	..Using surface acoustic waves
194	...Including spurious signal prevention or reduction means
195	...With wave-modifying means (e.g., reflectors, resonators, diffractors, multistrip couplers, etc.)
196	...With response weighting means
197	..Plural mechanically coupled bar, plate, or rod-type resonating means
198	...Plural interresonator coupling paths
199	...Plural mechanically coupled disk resonators
200	..Reed- or fork-type resonators
201	..Magnetostrictive wave transmission path
202	.Wave filters including long line elements
203	..Digital structure
204	..Stripline or microstrip
205	...Tunable
206	..Coaxial
207	...Tunable
208	..Waveguide
209	...Tunable
210	...Including evanescent guide sections
211	...Including frequency selective absorbing means
212	...Including directly coupled resonant sections
213	NEGATIVE RESISTANCE OR REACTANCE NETWORKS OF THE ACTIVE TYPE
214	.Simulating specific type of reactance
215	..Using gyrator
216	.Having negative impedance
217	..Providing negative resistance
81 R	ATTENUATORS
81 A	..Coaxial or microstrip
81 B	..Waveguide type
218	FREQUENCY MULTIPLIERS
219	RESONATORS (DISTRIBUTED PARAMETER TYPE)
219.1	.Dielectric type
219.2	.Magnetic type
220	.Open wire or Lecher line
221	..With tuning
222	.Coaxial or shielded
223	..With tuning
224	...Having movable element
225	....Using movable shorting means
226	....Using plunger, rod, or piston
227	.Cavity resonator
228	..With mode suppressor
229	..With temperature compensation
230	..With coupling
231	..With tuning
232	...Having movable element
233	....Using movable wall
234	.Temperature compensated
235	.With tuning
236	LONG LINES
237	.Leaky lines
238	.Strip type
239	.Waveguide type
240	..Surface wave
241	..Flexible
242	..Circular or helical structure
243	.Shielded type
244	..Including spaced, electrically compensated, internal support means
245	LONG LINE ELEMENTS AND COMPONENTS
246	.Strip type
247	..Semiconductor mounts
248	.Waveguide elements and components
249	..Bend
250	..Active element mounting
251	..Mode suppressor
252	..Window
253	..Including variable impedance
254	..Connectors and interconnections
255	...Quick disconnect
256	...Movable
257	....In line
258	..Switch
259	...Mechanically movable
260	.Connectors and interconnections
261	..Rotary coupling
262	.Switch
263	.Including variable impedance
99 R	MISCELLANEOUS
99 S	..Superconductive
99 PL	..Plasma
99 MP	..Multipactor applications

CLASS 334 TUNERS

DECEMBER 1990

1	COMBINED DIVERSE-TYPE TUNERS
2	.With plural diverse disk or plural diverse cylinder-type turret tuners
3	.With mutual tuning element
4	MAGNETIC FIELD-RESPONSIVE TUNER
5	CONDITION-RESPONSIVE (E.G., TEMPERATURE COMPENSATION)
6	.With condition-responsive inductor or capacitor
7	PUSH BUTTON AND/OR LEVER-TYPE MECHANICALLY OPERATED TUNER
8	REMOTELY CONTROLLED TUNER
9	.With electromagnetic operator
10	..Solenoid or relay operator
11	TUNER UNIT DIRECTLY RESPONSIVE TO VOLTAGE AND/OR CURRENT VARIATION
12	.Saturable core-type inductor
13	..Automatic frequency-centering circuit
14	.Reactance tuning
15	..Semiconductor reactance circuit
16	..Automatic frequency-centering circuit
17	TUNER UNIT WITH ELECTROMAGNETIC OPERATOR
18	.Band scanning or selector circuit
19	..Solenoid or relay-operated tuner means
20	..Motor-operated
21	...Predetermined frequency selector
22	...With reversing means
23	...Clutch means
24	...Relay-controlled
25	....Plural relays
26	.Automatic frequency-centering circuit
27	..Tool-driven aligning apparatus
28	..Plural signal sources
29	.Predetermined center frequency selector (e.g., push-button control)
30	WITH RESONANCE INDICATOR
31	.Meter type
32	..With optical and/or shading device
33	.Cathode ray type
34	..Magic eye
35	...Plural shadows
36	.Lamp type
37	..Glow discharge
38	WITH REACTOR ELEMENT WINDING AND UNWINDING COMBINED
39	COMBINED
40	SENSITIVITY OR "Q" ADJUSTMENT MEANS IN TUNED CIRCUITRY
41	WITH RESONANT LINE ELEMENTS
42	.Plural-operated tuning units
43	..With shaft operator
44	.Deformable
45	.With lumped capacitor in tuned circuit
46	WITH COMPRESSIBLE OR DEFORMABLE-TYPE TUNER
47	WITH SWITCHING MEANS
48	.Tuner switch rockable for fine tuning
49	.Disk-type turret tuner
50	.Drum or cylinder-type turret tuner
51	..With vernier tuning means
52	.Switch operated by variable tuning means
53	..Rectilinearly operated switch
54	.Rectilinearly operated switch
55	.Capacitor only modified or substituted by switching
56	.Inductor only modified or substituted by switching
57	..With vernier tuning means
58	...Variable capacitor
59	.Tuned transformer circuit substituted by switching
60	..Tuned circuit shorted by switch
61	MUTUAL INDUCTANCE VARIABLE MEANS
62	.Variometer
63	.Plural coils having common adjustable core
64	SERIES TUNED CIRCUIT
65	INDUCTOR AND CAPACITOR BOTH VARIABLE
66	.With variable inductor and capacitor structure in common
67	..Butterfly-type tuner
68	..Rectilinearly movable reactance adjusting elements
69	.Inductor and capacitor simultaneously varied
70	..Core tuned inductor
71	VARIABLE INDUCTOR TUNED
72	.Movable contact adjustable over length of inductor
73	..With capacitor-type contact
74	.Adjustable core type
75	..With inductor wound in particular shape
76	..With particular shape and/or type of core
77	..Gang-operated
78	VARIABLE CAPACITOR TUNED
79	.Straight-line frequency type
80	.With variable spacing between plates
81	.Rectilinearly sliding plates
82	.With particular shape and/or arrangement of plates
83	.Gang-operated capacitors
84	.Capacitor drive means
85	WITH SHIELDING OR HOUSING MEANS
86	WITH INDICATOR
87	.Band-switching
88	WITH STOP OR POSITIONING MEANS (E.G., DETENTS)
89	MISCELLANEOUS

CLASS 335 ELECTRICITY, MAGNETICALLY OPERATED SWITCHES, MAGNETS AND ELECTROMAGNETS

1 COMBINED DIVERSE SWITCHES (E.G., MANUAL-ACTUATED AND ART TYPE)
2 ELECTROMAGNETICALLY ACTUATED SWITCHES
3 .Utilizing magnetostrictive elements
4 .Radio frequency switch (e.g., T/R switch)
5 ..With coaxial components
6 .Automatic circuit-interrupting devices (e.g., circuit-protective devices)
7 ..Responsive to plural diverse circuit conditions (e.g., voltage and current)
8 ..Multipole or polyphase
9 ...With individual latch or trip means in each leg
10 ...With common latch or trip means
11 ..Plural switches
12 ..With shunting contacts
13 ..With auxiliary switch means (e.g., for energizing coil)
14 ..With direct connected contact separating means
15 ..With contact biasing, holding or pressure control means
16 ...Magnetic or electrodynamic (e.g., blowon or blowoff)
17 ..With switch condition signalling, indicating or alarm means
18 ..Responsive to predetermined or abnormal current condition (e.g., direction, phase angle or amplitude)
19 ...Zero current
20 ..Voltage responsive (under, over or no voltage)
21 ..With latch or trip means
22 ...Plural latch or combined latch operating means for single latch
23 ....With diverse-type actuating means (e.g., magnetic and thermal)
24 ...Trip-free (i.e., cannot be manually reclosed while overload exists)
25 ....With disabling means (for contact-actuator)
26 ...Reclosing or resetting
27 ....Automatic combined with manual
28 ....Automatic combined with timing or delay means
29 .....Fluid-controlled
30 .....Mechanical motor-controlled (e.g., clock movement)
31 .....Thermally actuated
32 .....With counting or integrating means (e.g., repetitive for given number of reclosures)
33 ......With means providing for operation after variable intervals or fixed intervals of different duration (e.g., first reset occurs) instantaneously, with other at longer intervals)
34 ......With lockout
35 ...Plural trips or combined operating means for single trip (e.g., magnetic with thermal)
36 ....With common structural elements
37 ....With thermal element comprising magnetic flux source
38 ...Magnetic
39 ....With time delay (e.g., thermal)
40 .....Responsive to or proportional to degree of overload condition
41 ....With magnetic flux winding directly in series with main contacts
42 ....With adjusting or calibrating means
43 ...Thermal
44 ....Including ambient temperature compensating means
45 ....With regulating, adjusting or calibrating means
46 ..With contact rebound or other undesirable motion prevention means
47 .Utilizing conductive liquid (e.g., mercury)
48 ..Comprising three or more electrodes or circuit-completion means
49 ..With liquid-displacement means
50 ...Comprising plural interconnected liquid containers
51 ...Magnetic
52 ....Piston or plunger
53 .....Combined with timing or delay means
54 ...Tiltable or rotating liquid chamber
55 ..Armature structure
56 ...Comprising freely movable floating slug or mass
57 ..Contact or electrode structure
58 ...Mercury or mercury wetted
59 .Retarded or delayed type
60 ..Plural sets of contacts alternately, consecutively or selectively opened or closed
61 ..With pneumatic delay means (e.g., dashpot, etc.)
62 ..With hydraulic delay means
63 ..With magnetic or electromagnetically actuated delay means
64 ..With mechanical delay means
65 ...Motor or motor-controlled (e.g., clockwork)
66 ..Electrothermal delay means
67 ..Adjustable or regulatable
68 .With motor
69 ..Reversible or oscillatable
70 ..Frequency-responsive or synchronous
71 ..Contact actuating structure
72 ...Plural contacts
73 ...Eccentric or cam
74 ...Including brake, clutch or detent
75 ....Magnetically actuated
76 ...Comprising energy storage means (e.g., wound spring)
77 ..With locking, latch or tripping structure
78 .Polarity-responsive
79 ..Storage or memory type (e.g., bistable)
80 ..Armature structure
81 ...Freely movable within coil or magnetic field between poles
82 ...Floating (i.e., no fixed pivot)
83 ..Contact structure of composition
84 ..Magnetic structure (e.g., saturable)
85 ...Pole structure
86 ..With adjusting means
87 .Periodic (e.g., vibrators)
88 ..Plural periodic switches or with plural pairs of contacts
89 ...Selectively, alternately, or consecutively actuated
90 ..With vibrating or oscillating element damping, frequency adjusting or vibration control
91 ..Actuating magnet structure or material
92 ...Plural magnets
93 ..Vibratory reed or other periodic contact actuator
94 ...Tuned or resonant at a particular frequency
95 ..Armature
96 ...Adjustable
97 ..Contact arrangement or composition
98 ...Adjustable contacts
99 .Alternating or fluctuating current type

ELECTROMAGNETICALLY ACTUATED SWITCHES
.Alternating or fluctuating current type
100 ..Induction or eddy current (e.g., vane or closed conductive loop)
101 ..Preselected or synchronous frequency responsive
102 ..Polyphase
103 ..With plural magnetic-actuating structures
104 ..With chatter, bounce or vibration-prevention means
105 ..With damping or adjustment means
106 .Multiple contact type
107 ..Contacts-selectively, sequentially, alternately, or intermittently actuated
108 ...Automatic telephone type
109 ....Plural or multidirection mechanical selector motions
110 .....With motion-conversion means
111 .....Selector structure
112 ......Crossbar type
113 ....With holding, locking or latching means
114 ....Rotary selector motion
115 ....Reciprocating selector motion (e.g., sliding)
116 ....With reset or selector-restoring means
117 ....With operational mode-varying means
118 ....Motor-driven
119 ...Plural armatures
120 ....With interlocking or mechanical connection
121 ...Contact-actuation means
122 ....With rotary or compound motion device (e.g., rack and pinion)
123 .....Pawl and ratchet
124 ....Armature structure
125 .....Rotary armature
126 ....Reciprocating or linearly sliding
127 ..Simultaneously actuated
128 ...By pivotal or rockable armature
129 ....Movable contacts or slidable card bar or comb
130 ....Movable contacts on circular card or comb structure
131 ...By reciprocating armature
132 ..With adjustable, replaceable or interchangeable structural features
133 ..Contact structure or arrangement
134 ...Grid or coordinate
135 ...In pile or stack
136 ..With plural magnet or coil means
137 ...Of diverse type
138 .Step-by-step type (e.g., closure responsive to predetermined number of control pulses
139 ..With timing or indexing means (e.g., clock mechanism)
140 ..Ratchet and pawl-type actuator
141 .With electrothermal-actuating means (e.g., expansible wire)
142 ..Fusible element
143 ..Independently operative
144 ..With armature positioning or adjusting
145 ..Bimetallic element
146 ..Thermomagnetic (e.g., device whose magnetic permeability changes with temperature)
147 .Electrodynamically actuated
148 ..Moving coil type
149 ...Plural coils
150 ...With reset or restoring means
151 .Vacuum or hermetically sealed type (e.g., reed switch)
152 ..Plural
153 ..With permanent magnet structure
154 ..Armature, contact or contact-actuating means (e.g., sealed reed)
155 .With predetermined current or voltage value-responsive actuator
156 .With protective means for switch or contacts
157 .With operation-inhibiting means (shock resistant)
158 ..From open position
159 .Plural independently operable switches
160 ..Interlocking
161 ...With cooperative-actuating means
162 ..With unitary housing, support or flux path
163 ..With unitary or common magnetic flux source
164 .Manually or gravity-operated latch with electromagnetic trip
165 .Contact-actuating means unitary with latch or trip
166 .With latch- or trip-reset means
167 .Latching means
168 ..With positive lock (against movement)
169 ..Plural or with auxiliary latch
170 ..Magnetically operated
171 ..Including spring-biasing or energy-storage means
172 .Tripping means
173 ..Plural diverse (e.g., manual plus electromagnet)
174 ..Magnetically operated
175 ...Utilizing hammer or other impacting means
176 ...With adjusting or regulating means
177 .Plural magnets or flux sources
178 ..Of diverse electrical characteristics
179 ..Of diverse magnetic characteristics (e.g., permanent plus electromagnet)
180 ..With common core or single armature
181 ...Pivoted armature
182 ...Magnetic fields opposing (e.g., differential)
183 ..Magnetic fields or torques acting alternately in opposite directions
184 ..With plural reciprocating armatures aligned or rigidly connected
185 .Contact-actuating means
186 ..Plural or combined (e.g., manual with other)
187 ..Unitary with armature
188 ..Snap-action
189 ..Mechanical linkage
190 ...Including cam, roller or eccentric means
191 ...Compound motion device (e.g., toggle)
192 ..With biasing means (open or closed)
193 ..With vibration-, bounce- or chatter-prevention means
194 ..With pressure-maintaining or adjusting means
195 ...Magnetic or electrodynamic force
196 .Contact composition or structure
197 ..Adjustable or readily detachable
198 ...Convertible from normally open to normally closed and vice versa
199 ..Printed circuit
200 ..Pivoted or relatively movable independently of the armature
201 .With arc-suppression or extinguishing means
202 .With housing or support means
203 .With armature structure
204 .Through conductor type (i.e., conductor field actuates armature)
205 PERMANENT MAGNET-ACTUATED SWITCHES
206 .Plural switches

PERMANENT MAGNET-ACTUATED SWITCHES
207 .Plural magnets
208 .Thermomagnetic
209 MAGNETS AND ELECTROMAGNETS
210 .Electron or ion beam deflecting type
211 ..With magnetic shunt
212 ..With adjustable magnetic element (e.g., to change the air gap, or its position on the cathode ray tube)
213 ..With coil structure
214 ...With electric or magnetic-shielding means
215 .Magnetostrictive-type device
216 .Superconductive type
217 .Temperature-responsive type (e.g., temp. compensation means)
218 ..With time-delay means
219 .Combined with diverse-type art device
220 .With magneto-mechanical motive device (e.g., electromagnet with armature)
221 ..Frequency-responsive type
222 ..With relatively movable coil and permanent magnet (e.g., D'Arsonval type)
223 ..With relatively movable conductors (e.g., dynamometer)
224 ...Induced current-type movable conductor (e.g., eddy current member)
225 ....Rotating disk
226 ....Short-circuited winding
227 ..Saturable magnetic type
228 ..With motion-conversion means (e.g., reciprocating to rotary motion)
229 ..With permanent magnet
230 ...Polarized electromagnet
231 ....Varying alternating current amplitude responsive
232 ....With plural armatures
233 .....With armature-locking means
234 ....With reversible magnetic flux-type movement (e.g., bistable type)
235 ....With vibrating reed or spring bar-type armature
236 ..With a shunt path for magnetic flux
237 ...Adjustable
238 ..With auxiliary armature-movement control means (e.g., manual)
239 ..With time delay armature-movement control means
240 ...Dashpot type
241 ...Auxiliary control coil
242 ...With plural armatures selectively retarded
243 ..Alternating current type
244 ...Flux phase displacement or varying means
245 ....Shading coil
246 ....Plural winding type
247 ...With chatter- or noise-preventing means
248 ....Spring or cushion-type vibration absorber
249 ....Special armature construction or mounting means (e.g., to assure positive seating of armature)
250 ...Coil construction or mounting means
251 ...With plunger-type armature
252 ...With vibrating armature
253 ..With armature latch means (e.g., means to retain armature in open or closed position
254 ...With latch-control winding
255 ..With plunger-type armature
256 ...Plural coils controlling a single armature
257 ...With shock-absorbing means (e.g., means to absorb the shock of armature or plunger)
258 ...With armature stroke adjustment
259 ...Plural plungers
260 ...With sealed enclosure (e.g., dust or moistureproof)
261 ...Armature structure or material
262 ....With centering or aligning or guiding means
263 ....With plunger rotation preventing means (e.g., means to prevent undesired rotation of the plunger during movement)
264 ....Sectional plunger
265 ..Plural armatures actuated by single electromagnetic coil
266 ..Plural coils or magnets control armature movement
267 ...With plural armatures
268 ...Coils or magnets being separately or selectively controllable
269 ..With dynamically balanced armature
270 ..Armature-mounting means
271 ...With armature bounce or vibration-preventing means
272 ...Rotating disk or cylindrical armature
273 ...With armature-adjusting means (e.g., means to adjust the relative distance between core and armature)
274 ...With armature-biasing means or bias-adjustment means
275 ...Hinge joint type armature-mounting means
276 ...Pivot support type armature-mounting means
277 ..With shock absorption, vibration or bounce-preventing means
278 ..With casing or enclosure
279 ..Armature shape, structure or material
280 ..Balls, filings or granular material
281 ..Core or pole shape, structure or material
282 ..Coil shape, structure or material
283 .Blade sharpening or conditioning type magnets
284 .For magnetizing or demagnetizing
285 .Work or object holding type
286 ..With workpiece to magnet adapted or fixture (e.g., to bridge flux)
287 ...Angularly adjustable fixture
288 ..Rotary-type magnetic chuck (permanent or electromagnet type)
289 ..Electromagnet type (e.g., electromagnetic chuck)
290 ...With circuit control means
291 ...Lifting or attracting type (e.g., for lifting pigiron or pulling hairpins)
292 ....Hermetically sealed or moisture-proofed
293 ....Hand-held type
294 ....With outer casing or housing
295 ..With magnetic-hold control means (e.g., means to control the hold strength)
296 .Magnet structure or material
297 ..Core structure
298 ...Movable or adjustable cores
299 ..Coil structure or material
300 ...With cooling means
301 ..With electric- or magnetic-shielding means
302 ..Permanent magnets
303 ...Enclosed in flexible plastic, cloth or tape
304 ...With flux leakage-reducing means

MAGNETS AND ELECTROMAGNETS
.Magnet structure or material
..Permanent magnets
305 ...Magnetic plug type (e.g., crankcase plug)
306 ...Plural magnets

5	POLYPHASE
10	.ADJUSTABLE INDUCTOR
12	.Interconnected windings
15	WITH COIL WINDING AND/OR UNWINDING
20	WITH DEFORMABLE OR DISTORTABLE COIL AND/OR CORE
30	WITH CONDITION-RESPONSIVE INDUCTANCE ADJUSTING MEANS (E.G., BY ELECTROMAGNET)
40	ADJUSTABLE BY MAGNETIC FORCE BETWEEN RELATIVELY MOVABLE PARTS OF THE INDUCTOR
41	.Weight-counterbalanced coil or core
45	WITH MOVABLE ELEMENT POSITION INDICATOR
55	WITH TEMPERATURE MODIFIER
57	.With inductor insulating fluid circulating means
58	.Liquid insulating medium
59	.Vented casing
60	.Ventilating passages (e.g., by coil section or core part spacers)
61	.Heat exchanging surfaces
62	.Hollow conductor coil
65	WITH MOUNTING OR SUPPORTING MEANS (E.G., BASE)
66	.Handle
67	.Bracket
68	.Suspension
69	WITH COIL CAPACITANCE MODIFYING MEANS
70	.With surge potential gradient modifying means
73	WITH CLOSED COIL OR CONDUCTOR MEMBER
75	.Movable with respect to another coil
77	..With magnetic portion
79	..Angularly movable
82	COIL FORMS PROTECTIVE CASING
83	CORE FORMS CASING
84 R	WITH ELECTRIC AND/OR MAGNETIC SHIELDING MEANS
84 C	..Conductive
84 M	..Magnetic
87	.Adjustable inductor
90	WITH OUTER CASING OR HOUSING
92	.Internal inductor support
94	.Fluid insulation
96	.Potted type
98	.Exposed core portions
100	WITH VIBRATION CONTROL
105	COMBINED
107	.With connector
110	WITH PERMANENT MAGNET
115	RELATIVELY MOVABLE COILS
116	.With means to change coil length and/or connections
117	.With core
118	..Relatively movable core and coils
119	..Coil and core movable as a unit
120	...Angularly movable
121	.Angularly and linearly movable coils
122	.Angularly movable
123	..About axis parallel to or coaxial with the other coil axis
124	..Nonsymmetrically pivoted coil movable on axis transverse to other coil axis
125	..About axis normal to other coil axis
126	...Plural coils movable with respect to a coil
127	...Similar spherical-shaped coils
128	...Tubular stationary coil
129	.Movable along or parallel to other coil axis
130	RELATIVELY MOVABLE CORE AND COIL
131	.Plural coils with plural cores
132	.Plural relatively movable core parts
133	..Adjustable magnetic shunt
134	..Adjustable air gap
135	...Angularly movable
136	.Telescoping magnetic body and coil
137	WITH MEANS TO CHANGE COIL LENGTH OR CONNECTIONS
138	.Parallel-spaced conductors or coils bridged by movable connector
139	.Contactor following helical conductor
140	..Plural movable contactors
141	..With contactor guide track
142	.Coil connections changed by moving coil (e.g., coil substitution)
143	.With connection reversing means
144	.With variable number of short-circuited turns
145	.Plural coils (e.g., transformers)
146	..Inductance change in plural coils
147	..Plural coils or coil portions connected in parallel or in series and parallel
148	..Autotransformers
149	.Contactor slidable on coil winding
150	.Series change (e.g., tap change)
155	INDUCTIVE REGULATORS WITH NO RELATIVELY MOVING PARTS
160	.With magnetic shunt to increase leakage reactance
165	..Air gap in magnetic shunt
170	THREE OR MORE WINDINGS
171	.Noninductively related windings
172	COIL TURN LINKS PORTION OF CORE ACROSS SECTION (E.G., FRACTIONAL TURN)
173	INTERLINKED COILS OR WINDINGS (E.G., CURRENT TRANSFORMER)
174	.Coil surrounding linear conductor
175	CORE SURROUNDING LINEAR CONDUCTOR
176	.Hinged core
177	WITH COIL OR MAGNETIC MATERIAL
178	WITH CLOSED CORE INTERRUPTED BY AN AIR GAP
179	COILS WITH TEMPERATURE COMPENSATING MEANS
180	WINDING FORMED OF PLURAL COILS (SERIES OR PARALLEL)
181	.Wound to reduce external magnetic field (i.e., fieldless winding)
182	.Two windings (e.g., transformer)
183	..Coils of different windings interposed
184	.Coils having different axis or on different core legs
185	.Coil supports or spacers
186	COIL FORMED OF PARALLEL CONNECTED CONDUCTORS
187	.Crossed or transposed conductors
188	TWO WINDINGS WITH MUTUALLY CROSSED WINDING TURNS
189	COIL WITH CROSSED TURNS
190	.Bank or universal wound coils (e.g., honeycomb, random wound)
191	.Basket weave (single layer)
192	WINDING WITH TERMINALS, TAPS, OR COIL CONDUCTOR END ANCHORING MEANS
195	COIL SUPPORTED WITHIN GROOVED OR HOLLOW COIL CONDUCTOR OF ANOTHER COIL
196	WITH SUPPORTING AND/OR SPACING MEANS BETWEEN COIL AND CORE
197	.Coil clamps or wedges
198	.Preformed insulation between coil and core (e.g., spool)
199	COIL OR COIL TURN SUPPORTS OR SPACERS
200	.Printed circuit-type coil
205	.Coil turns cemented to support or embedded in plastic
206	.Flexible filament, strip or sheet insulation
207	.With coil turn spacer
208	.Coil on a preformed suport or mount
209	COIL WRAPPER ON BINDER
210	WITH CORE CLAMPS, WEDGES OR FASTENERS
211	CONCENTRIC OR NESTED CORE ELEMENTS

212 PLURAL PART CORE
213 WOUND CORE
214 MULTIPLE MAGNETIC PATHS
215 .Three or more
216 CORE JOINT STRUCTURE
217 .Overlapping laminations (e.g., "Break Joint")
218 MAGNETIC ORIENTATION (I.E., DIRECTIONALLY PRESTRESSED CORE MATERIAL)
219 CORE INSULATION (E.G., BETWEEN CORE PARTS)
220 TWO WINDINGS
221 COIL AND CORE
222 WINDINGS
223 .Having conductor of particular shape (e.g., tapered longitudinally or of noncircular cross section)
224 .Nonuniformly spaced turns
225 COILS OF SPECIAL CONFIGURATION
226 .Figure "8" section
227 .Polyhedral section
228 ."D" section
229 .Toroidal
230 .Spherical
231 .Conical
232 .Planar type
233 CORE (E.G., COMPRESSED POWDER)
234 .Laminated type (includes bundles of rods or wires)

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DIGESTS

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DIG 1 Superconductive
DIG 2 Separable

CLASS 337 ELECTRICITY, ELECTROTHERMALLY OR THERMALLY ACTUATED SWITCHES

1	WITH DIVERSE ART-TYPE DEVICE
2	WITH SEPARATE DISTINCT DIVERSE ART-TYPE SWITCHING DEVICE (E.G., FLUID-OR MECHANICAL-ACTUATED)
3	.Bimetallic device with other
4	.Fusible element device with other
5	..Diverse art-type switching device responsive to the condition of fusible element
6	..With automatic circuit-interrupting device
7	...Multiphase of multipole
8	..Manually operable mechanical device
9	...Knife or blade switch
10	...Rotary or reciprocating mechanism
11	..With multiple circuit connector device (e.g., multiple mechanical)
12	WITH DIVERSE ART-TYPE ACTUATOR FOR SINGLE SWITCH
13	.Bimetallic with other
14	ELECTROTHERMALLY ACTUATED SWITCHES
15	.Shunt or short circuit completion devices
16	..Bimetallic means
17	..Fusible material combined with gap
18	...Gaseous space discharge gap (e.g., air gap)
19	..Gap with thin film dielectric (e.g., voltage-responsive)
20	..With significant housing or casing structure
21	.Conductive fluid devices
22	.Fluorescent lamp-starting devices
23	..With significant heating means
24	...With shunt or short-circuiting means (for resistor)
25	..Electric discharge means (e.g., electron-emissive)
26	..With significant contact structure or composition
27	...Bimetallic element
28	.Space discharge device (gaps, lightning arrester, etc.)
29	..Plural
30	..With explosive or combustible material
31	..With fusible element (e.g., cutout means)
32	...With grounding means
33	...With common structural elements (e.g., fuse provides support or element of spark gap structure
34	..Housing, casing, mounting or support means
35	.Plural diverse similar art-type devices in single switch
36	.With bimetallic elements (i.e., motion takes place in a plane at right angles to its major axis)
37	..With manual or other mechanical contact controlling means
38	...Plural elements combined with single mechanical means
39	....Independently operative bimetallic elements
40	....Individually responsive to diverse conditions or diverse characteristics
41	...Multiple contact or plural circuit control means
42	....Plural switches
43	.....With interlocking means
44	....Selectively or alternately actuated
45	....Single multipole or polyphase control device
46	.....With common mechanical actuating or tripping means
47	.....With separate latching or tripping means in each phase
48	......With common trip-bar means
49	.......Slidable or reciprocal bar
50	.......Rotatable
51	...Cyclically or periodically actuated
52	...With spring or other energy storage device
53	....Snap-action
54	.....With magnetic flux source (e.g., magnetic armature)
55	.....With latching or holding means
56	.....With reclosing or reset means
57	.....With adjusting or calibration means
58	....Compound motion means
59	.....Toggle
60	.....Floating lever
61	....Rotary or oscillatory motion device (e.g., spring motor)
62	....Reciprocating or slidable motion device
63	.....With lost motion coupling means
64	.....With camming or wedging means
65	.....With contact guiding or alignment means
66	.....With push-button actuating means
67	...With contact pressure maintaining or adjusting means
68	...With direct contact separating means (e.g., plunger camming means)
69	...Independently operative (nontrip-free)
70	...Latch or latch-release means
71	....Plural or responsive to diverse effects
72	....With reclosing or reset means
73	.....Automatic
74	....Trip-free
75	....Bimetallic element unitary with or comprising latch means
76	....Performs dual functions (e.g., main contact)
77	....With external or auxiliary heater
78	....Utilizing plural bimetallic elements
79	...With signal or indicating means
80	...With mercury or other conductive liquid circuit completion means
81	...Retarded or delayed action type
82	...With operating range calibration or adjustment means
83	....Comprising electric shunt or short-circuiting means
84	....Comprising mechanical means
85	..Bimetallic element unitary with or directly actuates movable contact means
86	...Plural contacts or external circuit connection means
87	....Alternately or selectively actuated
88	...Retarded or delayed type
89	...Snap-action
90	....With magnetic armature or holding means
91	....With reset means
92	...Cyclic or repetitively operative (e.g., flashing)
93	....With interval predetermining or adjustment means
94	...With operating range, calibration or adjusting means
95	...With plural or combined elements
96	....Responsive to diverse conditions or of diverse operative characteristics
97	..With switch structure protective means
98	..With contact operation inhibiting means (e.g., meltable or magnetic)

ELECTROTHERMALLY ACTUATED SWITCHES

.With bimetallic elements (i.e., motion takes place in a plane at right angles to its major axis)
99 ..With voltage or ambient temperature compensation means
100 ...Auxiliary heating means
101 ...Bimetallic means
102 ..With external or auxiliary heating means
103 ...With heater-adjusting, shunting or short-circuiting means
104 ...Plural heating means
105 ...With electrical power supply or current control means
106 ....Inductive means (e.g., tansformer)
107 ...Significant heating element structure or composition
108 ....Arc or spark gap
109 ..Contact composition or structure
110 ..With arc-suppression or blowout means
111 ..Bimetallic structure or composition of material
112 ..Housing, casing or support means
113 ...With external circuit connection means
114 .Expansible or vaporizable fluid-actuated (e.g., mercury vapor)
115 ..With manual or other mechanical contact actuating means
116 ...Cyclically or periodically operative
117 ...Utilizing diaphragm or bellows means
118 ...With restoring or resetting means
119 ..Utilizing capillary tube or bore means
120 ..With external heating means (external from fluid; may be the container)
121 ..With housing or casing
122 ..With contact or electrode structure or material (e.g., carbon)
123 .With longitudinally expansible solid element (e.g., rod, wire strip, etc.)
124 ..With voltage or ambient temperature compensation means
125 ..With electrical shunting or short-circuiting means
126 ..With manual or other mechanical contact actuating means
127 ...With delayed action or timing means
128 ...Latching or tripping means
129 ....With adjustment or calibration means
130 ....With reset or reclosing means
131 ...Snap-action (e.g., bistable)
132 ....With toggle spring
133 ....With stop means (e.g., motion limiting)
134 ....With magnetic biasing or holding means
135 ....With flexible vane or plate
136 .....With preset deformation
137 ..Contact structure or composition
138 ..Cylically or periodically operated (e.g., flasher)
139 ..With significant expansible element structure or composition of material
140 ...Wire or other stranded element
141 ..With external or auxiliary heating means
142 .Fusible element actuated
143 ..With manual or other mechanical contact control means
144 ...Plural fuses combined with single mechanical means
145 ...Multiple contact or plural circuit control means
146 ....Multipole or polyphase
147 ...Snap-action mechanical device
148 ...Reciprocal or rectilinear sliding motion actuating means (e.g., spring-loaded plunger or striker pin)
149 ...Rotary or oscillatory motion device
150 ...Latching trip or holding means (actuated by condition by fuse element)
151 ....Ratchet and pawl
152 ....Thin film or resoldering (e.g., eutetic alloy)
153 ....With external or auxiliary heating means
154 ....Tripping or release means
155 ...With reclosing or reset means
156 ...Manually operated shunting, disconnect or load-break device
157 ....Mechanical fuse link rupturing means
158 ..Current limiting devices (e.g., high voltage fuses)
159 ...Comprising significant fuse link or element structure or arrangement
160 ....With fusible metal overlay (e.g., alloy-forming)
161 ....Plural elements
162 .....With diverse characteristics
163 ..Delayed action (i.e., time lag)
164 ...Utilizing plural fusible elements
165 ...With biased direct circuit opening means
166 ...With heat absorption, conducting or storage means
167 ..Convertible (e.g., fused to nonfused)
168 ..Cutout or disconnect type (an assembly) of a fuse support and fuse holder with or without a fuse link)
169 ...With kickout means
170 ....Fusible element controlled
171 ...With dropout features (i.e., the fuse tube will be separated, or drop away from, at least on the main circuit contacts)
172 ....Utilizing combined mechanical motions (e.g., sliding with pivotal)
173 ....Utilizing sliding or reciprocating motions
174 ....With holding, latch or trip means
175 .....Combined latch or trip
176 .....Fusible element controlled
177 ......With fuse link extracting means
178 ......Spring biased
179 ......With delayed action
180 ...Line terminal or contact structure
181 ....Directly connected by fusible element (e.g., in line-type fuse)
182 ..With external or auxiliary heating means
183 ...Resistive heater
184 ....Directly in series with or completing controlled circuit
185 ...Comprising or including heat storage or accumulator means
186 ..Housing, casing or support means
187 ...With external circuit connection means
188 ....Plural conductor connector means
189 .....Distribution or load center type (e.g., plural outputs)
190 ....With fuse element tensioning or clamping means
191 ....Cable or busbar attachment means
192 .....Socket or thimble
193 .....Line tap, hook or clamp
194 ....With relatively movable cooperative elements (e.g., pull out)
195 .....With spring biasing means

ELECTROTHERMALLY ACTUATED SWITCHES
.Fusible element actuated
..Housing, casing or support means
...With external circuit connection means
....With relatively movable cooperative elements (e.g., pull out)
196 .....Door or closure controlled
197 .....Plural diverse (e.g., male and female connectors)
198 .....Prong or blade (e.g., plug-type housing)
199 ...With electrical ground, shield or barrier
200 ...Ceiling block fixture type (e.g., Rosette)
201 ...With plural interfitting or interlocking sections
202 ...Bushing or insulator
203 ...With gaseous venting or expulsion means (from the housing)
204 ...With oil or other liquid
205 ...With locking, sealing or guard means
206 ...With operational condition indicating means
207 ...With external support or attaching means (e.g., hook)
208 ...With fuse carrier attachment means
209 ....Adaptor means
210 ....Combined with lockout or other circuit closure prevention means
211 ....With pull out or ejector means (for tube)
212 ....Door-supported
213 ....Peculiarly adapted for cartridge fuse
214 .....With clamping, latch, or other attachment means
215 ......Spring clip
216 ....Peculiarly adapted for plug-type fuse carrier (e.g., fuse block)
217 ..Fuse link extraction or expulsion means
218 ...Combined with contact structure
219 ...Spring means
220 ...Pressure responsive
221 ..With electrical shunt circuit means (may also be fusible)
222 ..With switch protective means (for fuse structure)
223 ...Against shock or recoil
224 ...Against corona (e.g., shield)
225 ..With overfusing or tamper prevention means
226 ...Special adaptor or other selective means
227 ..Fuse link carrier or holder
228 ...Cartridge or tube
229 ....With plural fuse links or elements
230 .....Selectively or successively insertable in common circuit
231 ....With fuse link attaching support or securing means
232 .....Soldered or brazed joint
233 .....Rigid bar means
234 .....Locking or clamping means
235 .....Threaded screw or stud
236 .....Wedging or camming means
237 .....Replaceable or readily interchangeable
238 ....With fuse link tensioning means
239 .....Spring or other energy storage means
240 ......With strain member
241 ....With indicating or inspection means
242 .....Glow lamp
243 .....Chemical means
244 .....Movable or displaceable element (e.g., plunger or semaphore)
245 ....With handle or other manipulating means
246 ....Cartridge or tube structure or material of construction
247 .....Plural tubes (e.g., telescoping)
248 ....Ferrule, cap or other seal means
249 ....With gas expulsion means
250 .....Venting, cooling or deionizing
251 ....Contact or terminal structure
252 .....Attaching or securing means (to the tube or to the fusible element)
253 ......Locking, clamp or wedge means
254 ....Knife blade contact with slotted disk
255 ...Plug
256 ....Plural fusible elements in a single carrier
257 .....Selectively or successively insertable in protected circuit
258 ......Selection means
259 ....Rotatable relatively movable
260 ....With fuse element attachment or securing means
261 .....Resilient biasing or retaining means
262 .....Particularly adapted for specific fuse element
263 ......Cartridge or capsule enclosed
264 .....Readily replaceable or detachable element
265 ....With indicating means
266 .....Glow lamp or other incandescent means
267 .....Plunger or semaphore type
268 ....Contact or terminal structure
269 .....Plural diverse (e.g., male and female)
270 ....Structure or composition of material
271 .....Part of or structurally adapted for use with particular socket means
272 .....With venting means
273 ..With arc suppression or extinguishing means
274 ...Plural (e.g., auxiliary fuse)
275 ...With draw-out rod
276 ...Dielectric filler material or compound (e.g., quartz)
277 ....Liquid (e.g., hydrocarbon)
278 ....Dielectric gap or barrier means (e.g., wedging dielectric)
279 ...Deionizing gas or vapor generating material
280 ...Cooling, condensing or absorbing means
281 ...Blowout means (e.g., gaseous)
282 ...Arcing chamber or passage structure
283 ..Plural independent fuses
284 ...Selectively or sequentially inserted in same protected circuit
285 ....Automatic selective means (e.g., repeater type)
286 .....With delayed action selective means
287 ......Hydraulic or pneumatic
288 .....Transfer or interlock means
289 ....Rotary selector means
290 ..Fusible link or element structure or material
291 ...With strain-relief means
292 ...Plural series-connected conductive elements forming a single link
293 ...Plural parallel fusible elements
294 ...Continuous strand adapted for successive insertion in protected circuit

	ELECTROTHERMALLY ACTUATED SWITCHES
	.Fusible element actuated
	..Fusible link or element structure or material
295	...With particular geometrical shape or configuration
296	...Composite (e.g., with overlay)
297	...With nonconductive core (e.g., printed circuit)
298	THERMALLY ACTUATED SWITCHES
299	.Plural diverse actuating means in single switch
300	.Responsive to plural external conditions (e.g., temperature and humidity)
301	.With mechanical timing means (e.g., clockwork)
302	..Periodic or cyclically operative
303	...With predetermined operative cycle adjusting means
304	..With predetermined operative temperature range
305	...Utilizing cam or eccentric
306	.Expansible or vaporizable fluid actuated
307	..Plural expansible elements with single switch
308	...Individually responsive to diverse conditions or of diverse characteristics
309	..Multiple contacts or external circuit completion means
310	...Plural independent switches
311	...Selective, sequentially or alternately actuated
312	..With manual or other mechanical contact control means
313	...Combined or compound motion device
314	...Reciprocating or sliding motion
315	....Piston or plunger
316	...Rotary or oscillatory motion device
317	...With spring or other energy storage means
318	....Snap-action
319	.....With adjusting, calibrating or compensating means
320	..With diaphragm or bellows structure
321	...Combined with capillary tube or bore
322	..With bourdon tube
323	..With operating range calibration or adjustment means
324	..With auxiliary heater
325	..With latching, locking or holding means
326	..Fluid or fluid pressure generating means
327	..Housing, casing or support means
328	...With pressure relief (e.g., venting)
329	..Contact structure or composition of material
330	...With relative position adjustment means
331	...Comprising conductive liquid (e.g., mercury)
332	..With signaling, alarm or visual indicator means
333	.With bimetallic element
334	..With manual or other mechanical contact control means
335	...Plural elements combined with single mechanical means
336	....Individually responsive to diverse conditions or of diverse operating characteristics
337	...Multiple contact or plural circuit control means
338	....Plural separate switches
339	.....With interlocking
340	....With contacts selectively, alternately or sequentially actuated
341	...With time-delay means
342	...With spring or other energy storage means
343	....Snap-action
344	.....With magnetic flux source (e.g., magnetic armature)
345	.....With toggle linkage
346	.....With frictional coupling or lost motion means
347	.....With adjusting or calibration means
348	.....With reset or reclosing means
349	...With contact biasing, pressure control or adjusting means
350	...Compound motion means
351	...Rotary or oscillatory motion means
352	....With frictional clutch drive means
353	....Including cam and follower
354	...Reciprocating or slidable motion means
355	...Independently operative
356	...Latch or latch-release means
357	....Adjustable
358	....With reclosing or reset means
359	....With bimetallic element comprising or unitary with latch
360	..With operating range calibration or adjustment means
361	...Utilizing cam or roller
362	..Bimetallic element unitary with or directly actuates contacts
363	...Multiple contacts or external circuit control means
364	....Alternately or selectively actuated
365	...Snap-action
366	....With magnetic flux source
367	....With reset means
368	....With adjustment or calibration means
369	...Cyclically or repetitively operative
370	...With plural bimetallic elements
371	....Of diverse operating characteristics or responsive to diverse conditions
372	...Element attachment or mounting means
373	..Contact structure or composition of material (e.g., mercury)
374	...With position adjusting means
375	....Leaf spring with direct thrust element
376	..With signal or indicating means
377	..With auxiliary heating means
378	..With compensation means (e.g., ambient temperature)
379	..Bimetallic element structure or composition of material
380	..Housing, casing or support structure
381	...With significant external circuit connection means
382	.With longitudinally expansible solid element
383	..With plural contacts or external circuit completion means
384	..With manual or other mechanical contact control means
385	...Latching or tripping means
386	...Comprising mechanical advantage or force multiplying means
387	...Comprising frictional clutch or lost motion means
388	...With spring or other energy storage means
389	....Comprising resilient leaf spring
390	....Snap-action
391	.....With flexible vane or plate

THERMALLY ACTUATED SWITCHES
.With longitudinally expansible solid element
392 ..With operating range calibration or adjusting means
393 ..Expansible solid structure or composition of material
394 ...Rod, tube or cylinder
395 ...Wire or stranded material
396 ...Diaphragm, strip or ribbon
397 ..Plural deformable elements in single switch
398 ..Housing, casing or support means
399 ..Contact or terminal structural or composition of material
400 ...With position adjustment means
401 .With fusible, combustible or explosive material
402 ..With manual, gravity-actuated or other mechanical contact control means
403 ...Automatic cutout or disconnect type
404 ....With fusible element directly connecting contacts
405 ....With fusible element opening the circuit (no mechanical contacts)
406 ...Multiple contacts or plural circuit control means
407 ...Utilizing spring or other energy
408 ....Reciprocating or slidable motion device
409 .....Plunger or piston
410 ....Rotatable
411 ...Latch, trip or holding means
412 ..Plural independent fuse elements with single circuit completion means
413 ..Contact structure or composition of material
414 ..Housing, casing or support means
415 ...Flexible or resilient
416 ..Fusible, link or element structure or composition of material
417 DETAILS

CLASS 338 ELECTRICAL RESISTORS

1 COHERER TYPE
2 STRAIN GAUGE TYPE
3 .With temperature compensation
4 .Fluid- or gas pressure-actuated
5 .Dynamometer type
6 .Extensometer type
7 RESISTANCE VALUE TEMPERATURE-COMPENSATED
8 .Temperature-compensated actuator
9 .With additional compensating resistor or resistance element
10 ..Filament or wire resistance elements
11 REFLECTOR DIRECTS HEAT ON ELEMENT
12 MOVABLE MAGNET ACTUATES RESISTOR THROUGH HOUSING OR PARTITION
13 RESISTANCE VALUE RESPONSIVE TO A CONDITION
14 .Plural conditions
15 .Photoconductive (e.g., light sensitive)
16 ..With vibration control
17 ..Plural resistance elements (e.g., mosaic)
18 ..Infrared radiation
19 ..With transparent housing
20 .Current and/or voltage (e.g., ballast resistor)
21 ..Voltage surge-responsive or lightning arrester type
22 R ..Thermistor type
22 SD ....Semiconductor
23 ...Indirectly heated
24 ..Indirectly heated
25 .Ambient temperature
26 ..Cable or tape type (e.g., fire-detecting cable)
27 ..Liquid contact or element
28 ..Probe type
29 ...Mechanically adjustable or variable
30 ...Terminal forms casing or housing
31 ..Mechanically adjustable or variable
32 R .Magnetic field or compass (e.g., Hall effect type)
32 H ...Hall effect
32 S ...Superconductors
33 .Float actuator
34 .Gas, vapor, or moisture absorbing or collecting
35 ..Humidity
36 .Fluid- or gas pressure-actuated
37 ..Vehicle tire inflation
38 ..Liquid resistance element or contact
39 ..Piston
40 ..Bourdon tube
41 ..Bellows or capsule
42 ..Diaphragm
43 .Gravity stabilized or inertia actuator
44 ..Liquid resistance element or contact
45 ..Centrifugal
46 ..Pendulum
47 .Force-actuated
48 PLURAL SEPARATE DIVERSE RESISTORS
49 SHUNT TYPE
50 MOUNTED ON WHEELS OR VEHICLE
51 WITH HEAT DISSIPATING PROJECTIONS (E.G., VANES)
52 .Granular, powdered, or transversely stacked resistance element
53 WITH COOLING GAS OR LIQUID CIRCULATION
54 .Element granular, powdered, or stacked between terminals
55 .With cooling liquid circulation
56 ..Liquid resistance element circulates
57 .Vented or ventilating casing or housing
58 .Ventilated helical or zigzag element
59 WITH HEAT-STORING
60 WITH CAPACITY-REDUCING
61 WITH INDUCTANCE-REDUCING
62 .Helical or wound element
63 ..Bifilar
64 WITH ELECTRICAL SHIELD
65 .Mechanically variable resistor
66 IGNITION INTERFERENCE SUPPRESSOR TYPE
67 WITH DIVERSE NONELECTRICAL DEVICE (E.G., MECHANICAL OR CHEMICAL)
68 MECHANICALLY VARIABLE (E.G., RHEOSTAT)
69 .Musical instrument playing key actuated
70 .In or on lamp socket
71 ..Resistor surfaces pressed together (e.g., compressible type)
72 ..Resistor with intervening connector between contact and element (e.g., taps)
73 ..Resistor with contact angularly slidable on element
74 ..Resistor with contact rectilinearly slidable on element
75 .With resistor cleaner
76 .Interchangeable resistors of different resistance value
77 .Plug boxes
78 .With current reversing (e.g., reversing rheostat)
79 .With element winding and/or unwinding
80 .Liquid resistance element
81 ..Electrode separable from liquid element for switching
82 ..Adjustable insulating barrier between electrodes
83 ..Variable electrode separation
84 ...Plural ganged electrodes
85 ...Electrode rotatable
86 ..Level of liquid element adjustable on electrodes (e.g., electrodes move up and down in element)
87 .Contact adjustably inserted into resistance element (e.g., penetrating type)
88 ..Powdered element
89 .Mathematical function (e.g., sine-cosine potentiometer)
90 ..With slab or card-type resistance element
91 ..With mechanical converter
92 .Resistance element adjustably short-circuited
93 ..Compressible spring type
94 ..Liquid contact
95 ..With intervening structure between element and short-circuiting means (e.g., taps)
96 ..Spring contact strip progressively pressed along element
97 ..Unitary movable contact electrically bridges resistance portions
98 .With motion or vibration damping means (e.g., dashpots)
99 .Surfaces pressed together (e.g., compressible type)
100 ..Granular
101 ..Pile type
102 ...With contactor moving along pile
103 ...With electromagnetic operator (e.g., electric motor)
104 ....Force applied at both ends of pile
105 ....With diaphragm-type biasing spring
106 ....With initial pressure adjustment
107 ...With electromagnetic holder
108 ...Pedal- or treadle-operated
109 ...With initial pressure adjustment
110 ...With switch actuated by resistor actuator
111 ...With intervening conducting structure
112 ...Contact surface area of piles variable
113 ...With resilient pressure-applying linkage
114 .Deformable

MECHANICALLY VARIABLE (E.G., RHEOSTAT)
115 .Element in piled or stacked layers
116 .With electromagnetic operator (e.g., electric motor)
117 .Slidable coextensive helical and linear contacts
118 .Movable contact electrically adjustable over length of resistance element
119 ..With contact position indicating lamp
120 ..Additional resistor adjustably shunts part of resistance element (e.g., varifunction type
121 ..With nonlinearity correction
122 ..Coarse and fine resistance elements
123 ...Plural elements and plural contacts
124 ....Contacts interlinked (e.g., lost motion type)
125 ..Unitary movable contact electrically bridges plural resistance elements
126 ...Elements or taps in parallel
127 ...Contact rotates between circularly arranged elements or taps
128 ..Plural
129 ...Sequentially operated
130 ...Ganged
131 ....Resistors individually adjustable
132 ....Resistors in tandem along rotary shaft or coupling
133 ....Rectilinearly operated
134 ...Individually operated concentric shaft type
135 ..With zero setting or phasing
136 ..Contact clamped on resistance element
137 ..Plural contacts adjustable over single resistance element
138 ..Element tapered
139 ...Portion of element shorted
140 ...With intervening connector between contact and element (e.g., taps)
141 ...Helical or wound
142 ...Element forms a coating
143 ..Contact moves along turns of helical resistance element
144 ...Contact lifts element from core
145 ...Helical resistance element moves
146 ...With helical collector parallel to helical element
147 ...Resistor formed as a flat spiral
148 ...With helical screw for moving the contact
149 ...With contact stop
150 ..Resistance element moves
151 ...With liquid contact
152 ...With knob mounting or enclosing the element
153 ..Contact operated by pedal or treadle
154 ..With a flexible conductive strip separating the movable contact and the resistance element or taps
155 ..Contact rocks along element or taps
156 ..With liquid contact
157 ..Contact rolls along element or taps
158 ...Contact rolls rectilinearly
159 ..With heat conducting or distributing path
160 ..Contact slides along in contact with element
161 ...With element casing open over contact track
162 ...Contact angularly slidable
163 ....With knob forming casing or covering
164 ....Hermetically sealed housing
165 ....With elongated rectilinear resistance element
166 ....With removable actuating shaft or key
167 ....Spring-loaded contact
168 ....With flexible lead-in to contact
169 ....Contact pressure adjustable
170 ....With contact biasing spring on contact arm or carrier
171 ....With plural contact portions
172 ....With switching
173 .....Contact separable from resistance element
174 ....With collector ring
175 .....Ring, a shaft-bearing
176 ...Contact rectilinearly slidable
177 ....Contact surrounds resistor
178 ....Contact separable from element for switching
179 ....With series switch
180 ....Screw-operated
181 .....Screw, a fine-adjustment
182 ....With contact lock
183 ....With collector bar
184 ..With housing
185 ..With intervening connector between contact and element (e.g., taps)
186 ...Connector formed as severed helical turns or as comb teeth
187 ...With arc suppressor
188 ...With collector bar or ring
189 ...With magnetic holder for controller arm
190 ...Angularly movable contact
191 ....With switch
192 ....Resistance element enclosed
193 .....Enclosure formed on and hardened on element
194 ...Rectilinearly movable contact
195 .Resistance value varied by removing or adding material
196 .With resistor actuator position indicator
197 .With support
198 .With switch actuated by resistor actuator
199 .With housing
200 .With switch
201 ..Switch connects plural elements in parallel
202 MOVABLE CONTACT STRUCTURE
203 READILY SEVERABLE INTO INDEPENDENT RESISTORS
204 ELEMENT IN LAYERS PILED OR STACKED BETWEEN TERMINALS
205 .With intervening conducting layer
206 EXPANDED METAL TYPE
207 ELEMENT AND BASE PERMANENTLY FOLDED OR ROLLED
208 MESH, WOVEN, OR BRAIDED RESISTANCE ELEMENT
209 EXTENSIBLE
210 FLEXIBLE OR FOLDING
211 .Element coated on flexible base
212 .Tape or sheet
213 .Beaded
214 .Cable type
215 WITH SWITCH
216 IN COAXIAL TRANSMISSION LINE OR WAVE GUIDE
217 TAPERED ELEMENT
218 .Helical or wound
219 IN OR ON LAMP SOCKET OR BASE
220 IN DETACHABLE ELECTRICAL CONNECTOR
221 DETACHABLE PLUG-TYPE RESISTOR UNIT
222 WITH LIQUID ELEMENT
223 GRANULAR OR POWDERED ELEMENT
224 .Granular or powdered mixtures
225 .Carbon particles
226 INCASED, EMBEDDED, OR HOUSED
227 .With resistance value indicator
228 .Casing extends through plate
229 .Probe type

INCASED, EMBEDDED, OR HOUSED
230 .Metal casing or housing cast around element
231 .In liquid
232 .Casing or housing readily openable and/or separable from element
233 ..Elongated casing or housing with plug, disc, or cap at end
234 .With gaseous or vacuum spacing between element and casing or housing
235 ..Plural elements or resistors
236 ..Spacing of uniform thickness over length of element
237 ...Hermetically sealed
238 .Element inpowdered insulation with outer metallic sheath
239 ..Plural elements or resistors
240 ..Terminals or leads adjacent
241 ...Sheath only outside looped element
242 ..Shape of sheath
243 .Element in insulation with outer metallic sheath
244 ..Insulation coated on conducting liner
245 ..Entire insulation or sheath formed as a coating
246 ..With insulation and sheath external and internal to element
247 ..Plural part sheath
248 ...Insulation formed and hardened in situ (e.g., molded)
249 ...Parts formed as flat sheets
250 ..Insulation formed and hardened in situ (e.g., molded)
251 ..Sheath embraces or folds over insulation
252 .Element embedded or enclosed in groove or recess
253 ..With filling hardened in situ
254 .Flattened resistance element between flat layers
255 ..Layers coalesced or fused together
256 ..Casing or housing formed in plural layers external to element
257 ..One layer a coating
258 .Resistance element formed as a coating on interior of casing or housing
259 .Wound, braided, or woven casing or housing
260 .Plural resistors
261 ..Helical or wound element
262 .Casing or housing formed as a coating
263 ..Helical or wound element
264 ...Element coiled on a core
265 ....Terminal or leads at one end of core
266 ....Terminal surrounds element and/or core
267 .Helical or wound element
268 ..Preformed sleeve engaging over element
269 ..Casing or housing formed on and hardened on resistor (e.g., molded)
270 ..Element coiled on a core
271 .Terminal forms casing or housing
272 .Terminal or lead surrounds and secured to casing or housing
273 .Terminal or lead extends into end of elongated casing or housing
274 ..With sealing plug, disc or cap
275 .Casing or housing formed on and hardened on resistor (e.g., molded)
276 .Terminal or lead extends through casing or housing wall
277 WITH PROTECTING STRUCTURE SPACED FROM ELEMENT OR TERMINAL
278 EDGEWISE COILED HELICAL STRIP RESISTANCE ELEMENT
279 RIBBON RESISTANCE ELEMENT BENT OR CURVED ON FLAT SIDE
280 .Zigzag or sinuous
281 ..Element includes integral stiffening structure
282 .Helical or wound
283 ZIGZAG OR SINUOUS RESISTANCE ELEMENT
284 .Element includes integral stiffening structure
285 .Element extends along groove in base
286 .Helical
287 .Compound or multiple zigzag
288 ..Element includes conductive jumpers or spacers
289 .Element includes conductive jumpers or spacers
290 .Element projects in or through an opening or a slot in a support or frame
291 .With transaverse element stiffening or reinforcing rod or strip
292 .Element forms a coating
293 .Planar
294 .Cylindrical
295 PLURAL RESISTANCE ELEMENTS CONNECTED BY A JUMPER OR SPACER
296 HELICAL OR WOUND RESISTANCE ELEMENT
297 .Flat spiral winding
298 .Compound helix or winding
299 .Plural supported helices or windings
300 .Element forms a coating
301 .Element coiled on flat or ribbon base
302 .Element coiled on cylindrical or prismatic core
303 ..In helical groove on core
304 .Element on frame or support
305 ..Element extends in or through openings or grooves in frame or support
306 WITH BASE EXTENDING ALONG RESISTANCE ELEMENT
307 .Resistance element and/or terminals printed or marked on base
308 .Resistance element coated on base
309 ..Terminal coated on
310 .Resistance element extends through base
311 .Resistance element mounted in a groove in base
312 .Terminal extends in or through base
313 .Terminal embraces base
314 .Resistance element and base formed in layers
315 WITH MOUNTING OR SUPPORTING MEANS
316 .Compensates for or permits resistor
317 .Threading or projecting through the support
318 .Extending between supports
319 ..Plural resistors
320 .Plural resistors
321 RESISTANCE ELEMENT CORES AND FRAMES
322 WITH TERMINAL
323 .Terminal tapped on resistance element
324 .Diverse terminals
325 .With three or more terminals
326 .Terminals adjacent (e.g., looped resistor)
327 .Terminal coated on resistance element
328 .Terminal and resistance element disposed in flat layers
329 .Welded or soldered
330 .Terminal and resistance element integral
331 .Resistance element surrounds terminal
332 .Terminal embraces or surrounds resistance element
333 PARTICULAR CONFIGURATION AND/OR DIMENSION
334 MISCELLANEOUS

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DIGEST

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DIG 1 Worm gear drive

850	UNDERWATER
851	.Ship guidance system
852	.Electrodes and electrode systems
853	WELLBORE TELEMETERING
854	.By electromagnetic energy
855	..Radio frequency
856	.By electricity
857	..Using a common transmission medium
858	...Time multiplexed
859	...Frequency Multiplexed
860	.Depth recording
861	.Pulse transmission
870.01	CONTINUOUSLY VARIABLE INDICATING (E.G., TELEMETERING)
870.02	.With meter reading
870.03	..Having plural transmitters
870.04	.With calibration
870.05	.With calculation
870.06	..Plural transmitter (e.g., ratio)
870.07	.Combined (TM system with other system)
870.08	..Radio dial
870.09	..With alarm or annunciator (concurrent with TM)
870.1	.For radio sonde
870.11	.Plural transmitters
870.12	..Frequency division multiplex
870.13	..Time division multiplex
870.14	...Using particular sync
870.15	..With plural receiver
870.16	.Condition responsive
870.17	..Temperature
870.18	.Using a particular modulation (e.g., phase, frequency, or amplitude)
870.19	..Pulse
870.2	...Pulse repetition
870.21	...Analog to digital function converter
870.22	...Permutation code
870.23	...Increase pulses plus decrease pulses
870.24	...Pulse duration (e.g., pulse train)
870.25	.Phase variation
870.26	.Frequency variation
870.27	.Plural circuits, each for particular magnitude
870.28	.Via radiant energy beam (via particular energy)
870.29	..Photoelectric cell pickup
870.3	.With particular transmitter (e.g., piezoelectric, dynamo)
870.31	..Inductive transmitter
870.32	...Mutual inductance
870.33	....Flux valve type (e.g., with movable saturating magnet)
870.34	....Self-synchronous type
870.35	....Differential type
870.36	.....Linear variable differential transformer (LVDT)
870.37	..Capacitive transmitter
870.38	..Resistive transmitter
870.39	.With supply voltage regulation or compensation
870.4	.With particular receiver (e.g., ratiometer)
870.41	..Plural receivers
870.42	..With feedback (e.g., reflex along line)
870.43	...Follow-up (e.g., circuit rebalanced when upset)
870.44	..With discharge device (e.g., CRT)
901	EXTERNAL CONDITION VEHICLE-MOUNTED INDICA ATOR OR ALARM
902	.Transmitter in another vehicle (e.g., emergency vehicle)
903	..Relative distence between vehicles (e.g., collision alert)
904	.Transmitter in one vehicle only
905	.Highway information (e.g., weather, speed limits, etc.)

906	OVERRIDE OF TRAFFIC CONTROL INDICATOR BY COMMAND TRANSMITTER
907	TRAFFIC CONTROL INDICATOR
908	.Portable
908.1	..Barricade marker
909	.Plural intersections under common central station control
910	..Central station responsive to traffic detectors
911	...Central station ceontrols offset (time between beginning of same phase at adjacent intersections)
912	..Standby cycling implemented if invalid trasmission received or loss of transmission occurs
913	..Offset control
914	..Split control
915	..Central station includes display of status of indicators
916	.Intersection normally under local controller
917	..Controller responsive to traffic detectors
918	...Controller, when changing right of way, alters or skips normal "go" cycle of street having no traffic detected
919	...Plural cross highways at intersection each have traffic detectors
920	....Density determines split
921	.....Extension of time
922	...Density determines split
923	...Extension of time
924	..Local controller can be supercaeded by central station controller
925	..Pedestrian control
926	..Manual setting of cycle length and split times
927	..Rotating cam structure (specific structure required)
928	.Combined (e.g., toll systems, oneway)
929	.Indication of time remaining before change of phase
930	..Electromechanical movable auxiliary indicator
931	.Traffic control or local controller failure indicator
932	.Pacing (e.g., vehicle keeps pace with sequentially activated lights)
932.1	.Pivoted
932.2	VEHICLE PARKING INDICATORS
933	VEHICLE DETECTORS
934	.Density
935	.Descriminates vehicle direction
936	.Speed and overspeed
937	.With camera
938	.Compensation for vehicle remaining at sensor position
939	.Environmental or drift compensation
940	.With pneumatic
941	.Inductive
942	.Photoelectric
943	.Sonic or ultrasonic
944	PEDESTRIAN GUIDANCE
945	AIRCRAFT ALARM OR INDICATING SYSTEMS
946	.Nonairplane (e.g., balloon or helicopter)
947	.Land based landing guidance
948	..Aircraft actuation of land based landing guides
949	..Wind direction
950	..Movable (e.g., rotatable) guide
951	..Phased landing guidance (e.g., runway approach, landing, touchdown)
952	..Particular energy guide source (e.g., sound, electric field, radio)
953	...Visual source
954	....Alignment of plural sources

AIRCRAFT ALARM OR INDICATING SYSTEMS
.Land based landing guidance
..Particular energy guide source (e.g., sound, electric field, radio)
...Visual source
955 ....Plural colors
956 ....Modulated light source
957 ...Magnetic field guide
958 .Docking guidance
959 .Takeoff indicator
960 .Landing gear indicator
961 .Potential collision with other aircraft
962 .Icing indicator
963 .Flight alarm
964 ..Phased warnings for same flight condition
965 ..Tactile
966 ..Stall
967 ..Attitude (including yaw, angle of attack, roll, pitch, glide slope)
968 ..Wind shear
969 ..Speed
970 ..Altitude
971 .Nonalarm flight indicator
972 ..Runway presentation
973 ..Indicator of at least four flight parameters (altitude, speed, etc.)
974 ..Attitude
975 ...Roll or pitch
976 ...Glide slope or path
977 ..Altitude
978 ..Speed
979 ..Heading (includes deviation from desired course)
980 ..Indicator visible in pilot's line of sight through windscreen
981 .Aircraft beacons
982 ..Lights communicate (e.g., direction, altitude, reference position to observer
983 .Obstruction beacon
984 WATERCRAFT ALARM OR INDICATING SYSTEMS
985 .Navigation guides (e.g., channel lights)
986 .Anchor movement
987 .Rudder position indicator
988 VEHICLE POSITION INDICATION
989 .At remote location
990 ..With map display
991 ..Position indication transmitted by vehicle after receipt of information from local station
992 ..Position indication transmitted at periodic intervals (e.g., distance travelled)
993 ..Position indication transmitted by local station to remote location
994 ..Vehicle's arrival or expected arrival at remote location along route indicated at that remote location (e.g., bus arrival systems)
995 .Map display
996 .Prerecorded message describes position
425.5 LAND VEHICLE ALARMS OR INDICATORS
426 .Of burglary or unauthorized use
427 ..Of motorcycles or bicycles
428 ..Responsive to changes in voltage or current in a vehicle electrical system
429 ..Responsive to inertia, vibration or tilt
430 ..With entrance/exit time delay
431 .For trailer
432 .For bicycle
433 .For school bus
434 .For taxi
435 .Of relative distance from an obstacle
436 .Of collision or contact with external object
437 ..Curb
438 .Internal alarm or indicator responsive to a condition of the vehicle
439 ..Operation efficiency (e.g., engine performance, driver habits)
440 ..Tilt, imbalance or overload
441 ..Speed of vehicle, engine or power train
442 ..Tire deflation or inflation
443 ...By indirect detection means (e.g., height measurement)
444 ....Relative wheel speed
445 ...With particular telemetric coupling
446 ....Acoustic wave
447 ....Radio wave
448 ....Inductive
449 ..Temperature
450 ..Fluid level
450.1 ...Of hydraulic brake fluid
450.2 ...Of fuel
450.3 ...Of lubricant (e.g., engine oil)
451 ..Fluid pressure
452 ...Of brake fluid
453 ..Brake or clutch condition
454 ...Wear
455 ..Battery charging system condition
456 ..Gear position
457 ..Reminder
457.1 ...Of seat belt application
457.2 ...Of headlight energization
457.3 ...Of parking brake application
457.4 ...Of service interval expiration
458 ..Lamp or lamp circuit condition
459 ..Plural conditions
460 ...With voice warning
461 ...With particular display means
462 ....Digital
463 .External alarm or indicator of movement
464 ..Plural indications (e.g., go, slow, stop)
465 ..Turning or steering
466 ..Speed
467 ..Acceleration or deceleration
468 .External signal light system
469 ..With two or more intensity levels (e.g., day or night)
470 ..Pass - no pass
471 ..Hazard warning or distress signalling
472 ...Auxiliary signal permanently attached to vehicle
473 ...Portable signal
474 ..With audible signal
475 ..Turn signal
476 ...With automatic cancelling
477 ....By predetermined time interval or distance
478 ...With plural bulbs sequentially flashed
479 ..Brake light
480 .Electromagnetically actuated mechanical signal
481 ..Wigwag type
482 ..Normally encased
483 ...Plural concurrent indicators
484 ...Sliding sign or shutter
485 ...Window exhibited sign or shutter
486 ....Drum
487 ..Pivoting
488 ...Multiple indicators
489 ...Three or more positions
490 ....Vertical axis
146.2 DIGITAL COMPARATOR SYSTEMS
500 CONDITION RESPONSIVE INDICATING SYSTEM
501 .With particular system function (e.g., temperature compensation, calibration)

CONDITION RESPONSIVE INDICATING SYSTEM
.With particular system function (e.g., temperature compensation, calibration)
502 ..Acknowledgement
503 ...With ringback
504 ..Answer-back
505 ..Interrogator-responder
506 ..Alarm system supervision
507 ...Fail-safe
508 ...Redundant (e.g., added circuit or loop)
509 ...Plural or diverse current sources
510 ...Bridge or potential divider
511 ...Threshold or window (e.g., of analog electrical level)
512 ...Pulse
513 ...Diode
514 ..Testing
515 ...Simulation of condition
516 ...Automatic (e.g., periodic, start-up)
517 ..Selection from a plurality of sensed conditions
518 ...Scanning
519 ...Worst condition
520 ...First sensed exclusively indicated
521 ...Plural diverse conditions
522 ....Combined for response
523 ...Particular sequence of conditions
524 ...Condition position indicator
525 ....Display board
526 ..Predetermined rate of occurrence
527 ..Time delay
528 ...Entrance/exit
529 ...Condition persistence
530 ....Capacitor
531 .With particular coupling link
532 ..Having particular safety function
533 ..Wired
534 ...Coded message
535 ....Mechanical code means (e.g., coded disc)
536 ...Noninterfering
537 ...With impedance level coding
538 ...Combined with power line
539 ..Radio
540 .Specific condition
541 ..Intrusion detection
542 ...Lock
543 ....Permutation
544 ...Disturbance of fluid pressure
545 ...Door or window movement
546 ....Portable
547 ....Magnetic sensor
548 ....Plug or cord tension sensor
549 ....Rotatable sensor
550 ...Partition penetration
551 ...Disturbance of magnetic field
552 ...Disturbance of electromagnetic waves
553 ....Standing waves
554 ....Doppler effect
555 ....Light
556 .....Beam
557 ......Laser
561 ...Disturbance of electric field
562 ....Capacitance
563 .....With bridge
564 .....Fence
565 ...Responsive to intruder energy
566 ....Vibration
567 ....Electromagnetic energy
568 ..Article placement or removal
569 ...Mailbox
570 ...Drawer
571 ...Alarm on protected article
572 ...Detectable device on protected article
573 ..Human or animal
574 ...Holdup
575 ...Sleep
576 ...Drive capability
577 ..Flame
578 ...By radiant energy
579 ...By ionization or conductivity
580 ..Ice formation
581 ...Thermal
582 ...Vibratory
583 ...Photoelectric
584 ..Thermal
585 ...Refrigerated storage
586 ...Portable
587 ...False alarm resistant
588 ...Time-temperature relationship (e.g., overtemperature exceeds predetermined interval or time-temperature integral)
589 ....Rate of temperature change
590 ...Fusible, frangible, or destructible sensor
591 ....Containing pressurized fluid
592 ...Expanding fluid sensor
593 ...Switch sensor
594 ....With bimetallic element
595 ...Current modifier or generator
596 ....Cable or elongated probe
597 ....Curie point sensor
598 ....Barrier-layer sensor
599 ....Bridge circuit
600 ..Radiant energy
601 ..Meteorological condition
602 ...Moisture or humidity (e.g., rain)
603 ..Fluent material
604 ...Wetness
605 ...Leakage
606 ...Flow rate
607 ....Filter clogging
608 ....Stoppage
609 ....Counting
610 ....Vane in flow path
611 ....Pressure
612 ...Material level
613 ....Weight in container
614 ....Pressure
615 ....Moving sensor (e.g., impeller)
616 ....Overflow
617 ....Pulverant material (e.g., bin)
618 ....Liquid
619 .....Optical sensor
620 .....Electrode probe
621 .....Having sonic sensor
622 .....Having heat sensor
623 .....Float sensor
624 ......Vertically reciprocable
625 ......Pivoted arm
626 ...Pressure
627 ...Particle suspension in fluid
628 ....Smoke
629 .....Ionization
630 .....Photoelectric
631 ....Lubricant
632 ...Gas
633 ....Catalytic detector
634 ....Semiconductor detector
635 ..Condition of electrical apparatus
636 ...Battery
637 ...Watt-hour meter
638 ...Fuse or circuit breaker
639 ....Plural
640 ...Heater element
641 ...Signalling light element
642 ....Plural bulbs or filaments
643 ....Thermal or magnetic current sensors
644 ...Switch or relay
645 ...Rectifier
646 ...Transformer
647 ...Insulation

	CONDITION RESPONSIVE INDICATING SYSTEM
	.Specific condition
	..Condition of electrical apparatus
648	...Motor
649	...Condition of intentional grounding circuit
650	...Undesired circuit ground or short
651	....For plural circuit conductors
652	...Breaking of circuit continuity
653	...Electronic circuit or component
654	...Circuit energization
655	....Heating circuit
656	....Electricl socket
657	..Electrical characteristic
658	...Phase or frequency
659	...Pulse or surge
660	...Voltage
661	....Comparison
662	....Overvoltage
663	....Undervoltage
664	...Current
665	..Force or stress
666	...Weight
667	....On seat
668	...Tension
669	..Acceleration
670	..Velocity
671	...Angular
672	....Direction of shaft rotation
673	..Article transport
674	...Discrete articles
675	...Web, film, or strip
676	....Conveyer belt
677	...Strand
678	..Of geometrical gauge
679	..Machine condition
680	...Machine tool
681	...Synchronization
682	...Bearings
683	...Vibration
684	...Agricultural
685	...Cranes
686	..Position responsive
687	...Connected or disconnected
688	...Meter dial
689	...Tilt
690	...Geophysical (e.g., fault slip)
691	.Specified indicator structure
692	..Sound reproducer
693	.Specified power supply or housing
700	SELECTIVE VISUAL DISPLAY COMMUNICATION SYSTEMS
701	.Having selectable colors
702	..Using optical means external to display element
703	..Using display element color bit selection
704	..Using control amplitude selection
705	.Image superposition by optical means (e.g., heads-up display)
706	.Having specified input means
707	..Including light pen
708	...With pen controlling scan distinct from display scan
709	..Cursor mark position control (e.g., joystick)
710	...With mouse
711	..Including keyboard
712	...Display array defines keyboard
713	.With control of condition of display array elements (e.g., heater, priming)
714	..Structure including priming means
715	.With specified image of abnormal data
716	.Tandem display systems (e.g., one display cascaded with another diverse display array)
717	.Plural viewing point systems (e.g., plural terminals)
718	.Having control circuit means physically integral with display
719	..Having common base or substrate
720	.Cathode-ray tube display system
721	..Having simultaneous diverse messages
722	..Bar graph (e.g., analog data shown as variable length line)
723	..With specified image control
724	...With means for moving image (e.g., position)
725	....Animation
726	....Creep, crawl, slither and dither
727	....Rotation
728	...With interpolation means
729	...With perspective or shadow
730	...Character border
731	...Size
732	..Having specified generator means
733	...Including delay line
734	...Simulated overlay
735	...Font change
736	...Data responsive deflection generator
737	....Including magnetic element array
738	....Including impedance array
739	....Stroke or vector
740	.....With up/down counter
741	.....With normalization
742	.....With intensity compensation
743	....Lissajous
744	...Data responsive intensity generator (e.g., with repetitious scan)
745	....Combined plural generators
746	....Including magnetic element array
747	....Graphical
748	....Alphanumeric
749	.....Including counter or frequency divider
750	.....Including register, storage, or memory
751	....Calligraphic
752	.Specified plural element physical array (e.g., n by m visible elements)
753	..Linear image (e.g., bar graph of analog value)
754	...Plural (e.g., stacked, adjacent)
755	..Simulated array (e.g., physically moved array)
756	..Monogram or character area array
757	...With optical means in viewing path
758	...Using fluid light emitter elements (e.g., gas, plasma, or liquid)
759	....With particular mask or electrode shape
760	...Using solid body light emitter elements (e.g., incandescent or electroluminescent
761	....Using selective shunt circuit control
762	....Light emitting diodes
763	...Using specified light-controlling elements (e.g., shutter)
764	....Plural mechanically movable element
765	....Using liquid crystal elements
766	..Using specified light emitting elements
767	...Using brightness control (e.g., duty cycle)
768	...With shifting means
769	....Specified plasma coupling path
770	....Radiant energy coupling
771	...Using fluid light emitter (e.g., gas, plasma, or liquid)
772	....With phosphor excited by fluid response
773	....With particular discharge path

SELECTIVE VISUAL DISPLAY COMMUNICATION SYSTEMS
.Specified plural element physical array (e.g., n by m visible elements)
..Using specified light emitting elements
...Using fluid light emitter (e.g., gas, plasma, or liquid)
774 ....With shaped electrode or mask (e.g., nixie tube)
775 ....With more than two electrodes per element
776 ....Including means for combining selective and sustain signals
777 .....By specified network (e.g., charge storage diode)
778 ......Including transformer
779 ....With electrode insulated from fluid medium
780 ...Incandescent
781 ...Electroluminescent (e.g., with phosphor)
782 ...Using solid body light emitter (e.g., LED)
783 ..Using specified light controlling elements (e.g., goose bumps)
784 ...Liquid crystal elements
785 ...Electrochromic elements
786 ...Thermochromic elements
787 ...Particle suspensions (e.g., electrophoretic)
788 ...Fluid or pulverent materials in display
789 .With specified control circuitry
790 ..With control of indicia library
791 ..Special effects (e.g., antismear)
792 ...With message shifting means (e.g., traveling image)
793 ...With image intensity control (e.g., gray scale)
794 ..Using selective display to drive display (e.g., as nondisplay character generator)
795 ...With optical system
796 ....Specified mask
797 ...With cathode-ray tube as a storage means
798 ..Having specified storage means
799 ...Including memory
800 ...Including shift register data store
801 ....With routing logic
802 ..Having sequential or multiplexed data
803 ..Using logic
804 ...Decoder
805 ..Having generator of specified waveform coupled to display
806 ..Using patterned mechanical control means
807 ...Plural, interrelated switches (e.g., x by y)
808 ...Cam or card edge control
809 ...Belt drum or disc control
810 ....Optical path in control means
811 .Having specified display energizing means
812 ..Compensation of display elements (e.g., size of bits)
813 ..With regulation means
814 ..Synchronizing means
825 SELECTIVE
825.01 .Spare channel
825.02 .Tree or cascade
825.03 .Channel selection
826 ..Plural stage matrix system (e.g., path finding)
827 ...Alternate routing
825.04 ..Code or pulse responsive
825.05 .Loop
825.06 .Monitoring and control (e.g., supervisory)
825.07 ..With addressing
825.08 ...Polling or roll call
825.09 ..Quiescent
825.1 ..Scanning
825.11 ...Continuous
825.12 ...Interrupted
825.13 ....Automatic
825.14 ..Synchronization
825.15 ..With storage or recording
825.16 ..Fault condition
825.17 ..With indicator
825.18 ..Relay
825.19 .Communication or control for the handicapped
825.2 .Synchronizing
825.21 ..With addressing
825.22 .Program control
825.23 ..Machine tool
825.24 ..Of audio system
825.25 .Audio system (e.g., by pulse signal)
825.26 .Stock quotation
825.27 ..With information storage
825.28 .Space allocation (e.g., vehicle seat, hotel reservation)
825.29 ..Remote terminal
825.3 .Intelligence comparison
825.31 ..Authorization control (e.g., entry into an area)
825.32 ...With alarm or indication of improper access
825.33 ...Credit
825.34 ..Authentication (e.g., identity)
825.35 ..Commodity (e.g., vending)
825.36 .Having indication or alarm (e.g., location indication)
825.37 ..Additional to other selective control
825.38 ..Party line
825.39 ...Selection by means of frequency
825.4 ...Selector or indicator per se
825.41 ...Step by step impulse
825.42 ....Polarity controlled
825.43 ...Amplitude or polarity controlled
825.44 ..Code responsive (e.g., paging)
825.45 ...Distress signal alarm
825.46 ...Vibratory (tactual) alarm
825.47 ...Group call
825.48 ...Tone code
825.49 ..Location indication
825.5 .Lockout or priority (programmed or variable)
825.51 ..Designated priority
825.52 .Addressing
825.53 ..Plural part (e.g., digit) or repetitions
825.54 .Interrogation response
825.55 ..Printout (e.g., logging) or display
825.56 .With multidigit encoder
825.57 .Pulse responsive actuation
825.58 ..Phase or frequency shift keying
825.59 ..Polarity
825.6 ..Pulse pairs
825.61 ..Having delay line
825.62 ..Serial
825.63 ...Pulse width
825.64 ...Pulse spacing (e.g., pulse repetition rate)
825.65 ...Counting
825.66 ....Relay
825.67 ....Counting chain
825.68 ...Shift register
825.69 ...Radio link
825.7 .Phase responsive actuation
825.71 .Frequency responsive actuation
825.72 ..Wireless link
825.73 ..Plural frequencies
825.74 ...Simultaneous

	SELECTIVE
	.Frequency responsive actuation
	..Plural frequencies
825.75	...Permutation
825.76	...Corresponding to distinct functions
825.77	.Amplitude responsive actuation
825.78	..Divided resistor
825.79	.Matrix
825.8	..Plural stage
825.81	..Electroluminescent elements
825.82	...Light emitting diode
825.83	..Programmable
825.84	...Having fusible element
825.85	..Semiconductor crosspoint
825.86	...Integrated circuit
825.87	...Logic
825.88	...Bistable
825.89	...Switching element
825.9	...Transistor
825.91	....Field effect transistor
825.92	....Four or more element
825.93	....Plural
825.94	...Diodes
825.95	....Charge storage
825.96	....Plural diodes at crosspoint
825.97	.Having electron beam device
825.98	.System having rectifier
286.01	SYSTEMS
286.02	.Network signaling
286.03	..Speaking tube including circuit
286.04	.Manual alarm telegraph e.g., other than signal box type
286.05	..Fire
286.06	.Call station
286.07	..Hospital
286.08	..Hotel
286.09	..Restaurant
286.11	.Annunciator
286.12	..Drop annunciator
286.13	.Mimic
286.14	..Mapping
287	.Signal box type (e.g., to call messenger, plural fire alarm boxes)
288	..Combined (e.g., alarm circuit over power line)
289	...With fire extinguisher (e.g., CO2)
290	...Engine house apparatus controlling (e.g., releases horses, starts motor)
291	..Repeaters (e.g., from central to plural fire houses or to siren)
292	..Circuit maintenance (e.g., fault alarm, faulty circuit substitution)
293	..Variable signal (e.g., police and fire, first and third alarm)
294	...Dial selector for variable signal
295	..Non-interferring (prevents break-in by another box during transmission)
296	...Key obstruction type
297	..With signal at box (e.g., preliminary signal to combat false alarms)
298	...Answer back signal acknowledges transmitted signal
299	...Simultaneous (e.g., actuated by transmitted signal)
300	...Lamp at box (e.g., to call patrolman)
301	..Portable box actuating key (e.g., key must be released by signal from central)
302	...Frangible guard or protector for key
303	..Frangible element must be broken to send signal
304	..False alarm combating (e.g., detention devices)
305	..Local circuit to actuate box
306	...Watchman's local circuit
307	..Transmitters
308	...Controlled by door of signal box
309	...With make and break wheel
309.15	.Timer controlled
309.2	..With non-electrical indicator or exhibitor
309.3	..With diversely controlled indicator
309.4	..Selectively or sequentially actuated indicators
309.5	...With independent manual controller
309.6	..Circuit maker-breaker in series
310 R	.Combined (e.g., signal over power line)
310 A	...Power
310 CP	...Coupling-plug
311.1	.Paging
313	.Answer back
314	..Non-correspondence alarm (e.g., if acknowledgment is incorrect)
315	.Selsyn type
316	.Rebalancing at receiver
317	..Automatic rebalancing
318	.Synchronous distributor at transmitter and receiver
319	.Plural electromagnets or plural motors receiver
320	.Via fluid conduit (e.g., fire hose)
321	.Portable self-contained (e.g., movie usher's signalling flashlight)
322	.Self-cancelling after fixed time
323 R	.Game reporting
323 B	...Bowling
326	.Plural (e.g., concurrent auxiliary) single indications (e.g., light flashes when bell rings)
327	..With sounder signal cut-off
328	.Audible signals (e.g., bell rings softly first and then loudly)
329	..Intermittent
330	.In and out indicators (e.g., doorbell button flashes "out" sign)
331	.Periodic or flashing
332	.Signal light systems
333	.With specific power supply (e.g., power substitution)
425	REPEATER IN UNSPECIFIED TYPE COMMUNICATIONS LINE OR CHANNEL
815.01	VISUAL INDICATOR
815.02	.Three or more messages
815.03	..Using light emitting diode
815.04	..Monogram or character area array
815.05	...With electromagnetic actuation
815.06	..Transparent display element
815.07	...With optical system
815.08	..Including motor positioner
815.09	...Having mechanical coupling
815.1	.Multiple color
815.11	.Audio responsive lamp
815.12	.Switchboard or panel type (e.g., bullseye)
815.13	..Pushbutton
815.14	..Housing
815.15	.With lamp enclosed in housing
815.16	..Combined
815.17	..Light source modifier
815.18	..Readily movable
815.19	..Moving light source
815.2	..Assembly details
815.21	.Concurrent or auxiliary indications
815.22	..Bell
815.23	.Plural (e.g., grouped drop annunciators with single restorers)
815.24	.Moving
815.25	..Semaphore
815.26	..Rotary
815.27	..Array or matrix of elements
815.28	..Circuit closing type
815.29	..Electromagnet releases latch (e.g., drop annunciator)
815.3	.Self canceling after fixed time
815.31	.With light piping

	VISUAL INDICATOR
815.32	.False signal prevention (e.g., anti sunlight)
815.33	.Signal lense
384 R	AUDIBLE (E.G., SIMULATED NOISE IN TRAINERS)
384 E	..Electronic
385	.Explosive
386	..Successive
387	.Weatherproofing
388	.Diaphragm (e.g., horn)
389	..Phonograph type
390	..Rotary actuator
391	..Supports
392	.Percussion-type sound producers (e.g., signal chimes)
393	..Combined or plural (e.g., manual and electric, bell and buzzer)
394	...With unitary battery
395	..Suspended (e.g., locomotive bell)
396	..Gong encases striking mechanism
397	..Polarized
398	..With linkage between operator and clapper (e.g., church bell)
399	..Rotary clapper
400	..Single stroke for single impulse
401	...Alternating current type
402	..Details (e.g., clapper)
403	...Interrupter details
404	.Pneumatic-type sound producer (e.g., horn with electromagnetic valve)
405	..Siren
406	..Whistle
407	MISCELLANEOUS (E.G., TACTUAL SIGNALS)

CLASS 341 CODED DATA GENERATION OR CONVERSION

DECEMBER 1990

1 DIGITAL PATTERN READING TYPE CONVERTER
2 .Plural denominationally related carriers (e.g., coarse/fine geared discs)
3 .Plural types of codes on single carrier
4 .According to nonlinear function
5 .For X or Y coordinate determination (e.g., stylus-pad)
6 .With directional discrimination
7 .Antiambiguity feature
8 .Real and complementary patterns
9 .Having combined (e.g., denominational, combination code) coding pattern
10 ..Constant distance code
11 .Incremental
12 .Cathode ray
13 .Optical
14 ..Having optical waveguide
15 .Magnetic, inductive or capacitive
16 .Brush and contacts or conductive pattern
17 .Actuated by physical projection
20 BODILY ACTUATED CODE GENERATOR
21 .For handicapped user
22 .Including keyboard or keypad
23 ..Variable key legends
24 ..With error prevention means (e.g., debounce, antichatter)
25 ...With rollover feature (i.e., antidoublestrike)
26 ..With particular key scanning feature
27 ..With audible or tactile indicator
28 ..For pictorial or ideographic characters (e.g., design, chinese or japanese characters)
29 ..With variable pulse spacing or grouping
30 ..For numerical pulse type transmission
31 ..Photoelectric actuation
32 ..Magnetic or inductive actuation
33 ..Capacitive actuation
34 ..Pressure sensitive actuation
35 .With rotary dial
50 DIGITAL CODE TO DIGITAL CODE CONVERTERS
51 .Adaptive coding
52 .To or from particular bit symbol
53 ..Bit represented by pulse width
54 ..Bit represented by discrete frequency
55 .Substituting specified bit combinations for other prescribed bit combinations
56 .To or from multi-level codes
57 ..Binary to or from ternary
58 .To or from minimum d.c. level codes
59 .To or from run length limited codes
60 .To or from packed format
61 .Data rate conversion
62 .BCD (binary-coded-decimal) to or from decimal
63 .To or from bit count codes
64 .To or from number of pulses
65 ..To or from Huffman codes
66 ..To or from Morse code
67 .To or from variable length codes
68 .To or from NRZ (nonreturn-to-zero) codes
69 ..Return-to-zero to or from NRZ (nonreturn-to-zero) codes
70 ..To or from bi-phase level code (e.g., split phase code, Manchester code)
71 ..To or from bi-phase space or mark codes (e.g., double frequency code, FM code)
72 ..To or from delay modulation code (e.g., Miller code, three frequency code, MFM code)
73 ..To or from coded mark inversion
74 ..To or from double density code
75 .To or from nonlinear codes
76 .To or from differential codes
77 ..To or from delta modulation codes
78 .Programmable structure
79 .Tree structure
80 .To or from fibonacci codes
81 .To or from interleaved format
82 .To or from mixed code formats
83 .To or from mixed base codes
84 ..Binary to BCD (binary-coded decimal)
85 ..BCD (binary-coded decimal) to binary
86 .Generator runs until new code is generated
87 .Unnecessary data suppression
88 .Multiple conversions using same converter
89 .Reversible converters
90 .To or from alphanumeric code formats
91 ..To or from Baudot code
92 ..To or from Hollerith code
93 .Complementers
94 .With error detection or correction
95 .Byte length changed
96 .To or from constant distance codes
97 ..Gray to binary
98 ..Binary to Gray
99 .To or from display device codes
100 .Serial to parallel
101 .Parallel to serial
102 .To or from "N" out of "M" codes
103 .."N" out of "M" to "X" out of "Y"
104 .Binary to decimal
105 .Decimal to binary
106 .Coding by table look-up techniques
107 .To or from code based on probability
108 REVERSIBLE ANALOG TO DIGITAL CONVERTERS
109 STOCHASTIC TECHNIQUES
110 ANALOG TO DIGITAL CONVERSION FOLLOWED BY DIGITAL TO ANALOG CONVERSION
111 PHASE OR TIME OF PHASE CHANGE
112 .Synchro or resolver signal
113 ..Coarse and fine
114 ..Control system
115 ..Converter compensation
116 ..Analog resolver or synchro signal to digital signal
117 ..Digital signal to analog resolver or synchro signal
118 CONVERTER COMPENSATION
119 .Temperature compensation
120 CONVERTER CALIBRATION OR TESTING
121 .Trimming control circuits
122 SAMPLE AND HOLD
123 .Having variable sampling rate
124 .Sampled and held input signal with linear return to datum
125 .Sampled and held input signal with nonlinear return to datum
126 ANALOG TO OR FROM DIGITAL CONVERSION
127 .Bipolar
128 ..Dual slope analog to digital converter
129 ..Plural slope analog to digital converter
130 .Difunction code as output
131 .Increasing converter resolution (e.g., dithering)
132 .Detecting analog signal peak
133 .With particular solid state devices (e.g., Gunn effect device, Josephson device, drift transistor, using solid state active devices as impedances)
134 ..Integrated injection logic
135 ..Current mirror
136 ..Field effect transistor
137 .Using optical device, (e.g., fiber optics, cathode ray tubes)
138 .Nonlinear

	ANALOG TO OR FROM DIGITAL CONVERSION
	.Nonlinear
139	..Automatic control for increasing converter range (e.g., gain ranging, automatic gain control)
140	..Linearization (e.g., nonlinear transfer characteristic compensates for nonlinear transducer)
141	.Multiplex
142	.Converter is part of control loop
143	.Differential encoder and/or decoder (e.g., delta modulation, differential pulse code modulation)
144	.Digital to analog conversion
145	..Coarse and fine conversions
146	..Serial conversion
147	..Function generator
148	..Tree structure
149	..Using magnetic or cryogenic components
150	..Using charge coupled devices or switched capacitances
151	..Analog output represents a displacement or force
152	..With intermediate conversion of digital value to time interval
153	..Using weighted impedances
154	..Using ladder network
155	.Analog to digital conversion
156	..Coarse and fine conversions
157	..Intermediate conversion to frequency or number of pulses
158	..Analog input compared with static reference
159	...Parallel type
160	....Including priority encoder
161	...Acting sequentially
162	...Serial conversions with change in signal
163	...Recirculating
164	...Single comparator and counter
165	...Single comparator and digital storage
166	..Intermediate conversion to time interval
167	...Dual slope
168	...Plural slope
169	...Input signal compared with linear ramp
170	...Input signal compared with nonlinear ramp
171	..Using magnetic or cryogenic components
172	..Using charge transfer devices (e.g., charge coupled devices, charge transfer by switched capacitances)
173	CODE GENERATOR OR TRANSMITTER
174	.Plural transmitters
175	.With code display at transmitter
176	.Transmitter for remote control signal
177	.Producing different pulse frequencies
178	.With variable pulse spacing or grouping
179	..Plural pulse shapes
180	..Plural channels
181	..Carrier frequency variation
182	..With variable pulse length
183	..Pulse presence or absence in equal length code
184	.Numerical pulse type
185	..Multistage
186	..With gaseous or space discharge device
187	..Having counter or register
188	..Serial pulse number actuation
189	..Pulse gating
190	..Mechanical switch feature
191	.With gaseous or space discharge device feature
192	.With rotary distributor
200	QUANTIZER
899	MISCELLANEOUS

CLASS 342 COMMUNICATIONS, DIRECTIVE RADIO WAVE SYSTEMS AND DEVICES (E.G., RADAR, RADIO NAVIGATION)

1 RADIO WAVE ABSORBER
2 .For aircraft or missile
3 .For camouflage
4 .With particular geometric configuration
5 RADAR REFLECTOR
6 .With modulation
7 .Corner
8 ..Inflatable or collapsable
9 ..Decoy or tow target
10 .Inflatable or collapsable
11 .With spherical lens (e.g., Luneberg lens)
12 .Chaff
13 RADAR EW (ELECTRONIC WARFARE)
14 .ECM (Electronic countermeasures, i.e., jamming)
15 ..With repeater
16 .ECCM (Electronic counter-countermeasures, i.e., antijamming)
17 ..Radar reacts to jamming
18 ...by changing frequency
19 ...By varying gain or blocking receiver
20 .Detection of surveilance
21 BASE BAND SYSTEM
22 TRANSMISSION THROUGH MEDIA OTHER THAN AIR OR FREE SPACE
23 BERTHING OR DOCKING
24 BLIND AID
25 SYNTHETIC APERTURE RADAR
26 WEATHER RADAR
27 PRESENCE DETECTION ONLY
28 .By motion detection
29 AIRCRAFT COLLISION AVOIDANCE SYSTEM (CAS)
30 .With transponder
31 ..Including synchronized clock
32 ..Included in Secondary Surveilance Radar (SSR) or Air Traffic Control Radio Beacon System (ATCRBS)
33 AIRCRAFT LANDING SYSTEM
34 .Ground control approach (GCA)
35 .Microwave landing system (MLS)
36 AIR TRAFFIC CONTROL
37 .Secondary Surveilance Radar (SSR) or Air Traffic Control Radar Beacon System (ATCRBS)
38 ..With altitude information
39 ..With side lobe suppression
40 ..With defruiting or degarbling
41 SHIP COLLISION AVOIDANCE
42 RADAR TRANSPONDER SYSTEM
43 .Combined with primary radar system
44 .Unique identity
45 .IFF or SIF
46 .Navigational
47 ..Distance measuring equipment (DME)
48 ...With automatic lock-on
49 ...With VOR/TACAN
50 .With Telemetry
51 .Transponder only
52 COMBINED WITH DIVERSE TYPE RADIANT ENERGY SYSTEM
53 .With infrared device
54 .With laser
55 .With television
56 .With direction finding
57 .With radio voice communication
58 .With transmission to a remote station
59 PLURAL RADAR
60 TRANSMITTING INTELLIGENCE
61 RETURN SIGNAL CONTROLS EXTERNAL DEVICE
62 .Missile or spacecraft guidance
63 .Aircraft guidance
64 ..With map matching
65 ..With terrain avoidance or alarm
66 .Camera
67 .Gun (e.g., fire control)
68 .Proximity fuze
69 .Device actuated by presence of land vehicle
70 .Radar mounted on and controls land vehicle
71 ..With control of brakes or steering
72 ..With control of safety device (e.g., air bags)
73 RETURN SIGNAL CONTROLS RADAR SYSTEM
74 .Antenna control
75 ..Physical orientation
76 ...With ground tracking
77 ...With signal error correction
78 ...Conical scan
79 ...Lobe switching
80 ...Monopulse
81 ..Beam direction by phase or frequency control
82 .Transmitter
83 ..Signal phase or frequency other than pulse repetition frequency (PRF)
84 ...Function of doppler frequency
85 ...Function of distance
86 ....With constant phase
87 ....With constant beat frequency
88 ..Transmission timing (e.g., ring around)
89 .Receiver
90 ..Automatic target detection
91 ..Gain or threshold
92 ...Automatic gain control (AGC)
93 ...Constant false alarm rate (CFAR)
94 ..Gating
95 ...Automatic range tracking
96 ....Automatic track while scan (ATWS)
97 ....With automatic lock-on
98 ..Frequency
99 ...Doppler frequency tracking
100 ....Wtih local oscillator control
101 ....With filter control
102 ...Phase
103 ....Phase locked loop
104 DETERMINING VELOCITY
105 .Other than doppler (e.g., range rate)
106 .Combined with determining acceleration
107 .Combined with determining distance and direction
108 ..With correlation
109 .Combined with determining distance
110 ..With plural fixed range gates
111 ..With plural receiver frequency band separation
112 ..With plural frequencies transmission
113 .Combined with determining direction (i.e., bearing)
114 .Combined with determining sense of motion (i.e., approaching or receding)
115 .Digital
116 .With plural received frequency band separation
117 .With plural beams (e.g., "Janus")
118 DETERMINING DISTANCE
119 .Miss distance indicator (MDI)
120 .Altimeter
121 ..With additional indicator
122 ..FM type
123 .Height finder
124 .Material level within container
125 .With remote cooperating station
126 .Triangulation
127 .Phase comparison
128 .With frequency modulation
129 ..Plural frequencies transmitted
130 ..Plural modulation

DETERMINING DISTANCE
.With frequency modulation
..Plural modulation
131 ...Combined with pulse modulation (e.g., frequency agile)
132 ....With pulse modulation (e.g., "Chirp")
133 ..Combined with determining direction
134 .With pulse modulation
135 ..Digital (e.g., with counter)
136 ...With plural fixed range gates
137 ..With variable pulse repetition frequency (PRF) or pulse width
138 ..With type "A" or "J" range scope
139 ..Combined with determining direction
140 ...With azimuth and elevation determination
141 ...Off boresight
142 ...With CRT display
143 ....Plural
144 ....PPI type
145 .With correlation
146 .Combined with determining direction
147 DETERMINING DIRECTION
148 .Low angle processing
149 .Monopulse
150 ..With common IF channel
151 ..With channel equalization
152 ..With quadrature difference processing
153 ..With particular antenna or waveguide
154 ..Combined with beam steering
155 .Lobe switching
156 .Interferometer
157 .With frequency or phase steering
158 .Scanning
159 CLUTTER ELIMINATION
160 .MTI (Moving target indicator)
161 ..With vehicle movement compensation (e.g., AMTI (Airborn MTI))
162 ..Digital
163 ..With blind speed elimination
164 ..With storage tube
165 TESTING OR CALIBRATING OF RADAR SYSTEM
166 .Proximity fuze
167 .With laser
168 .With noise generation
169 .By simulation
170 ..Microwave
171 ..Doppler
172 ..With delay
173 .By monitoring
174 ..Calibrating
175 WITH PARTICULAR CIRCUIT
176 .Display
177 ..Plural
178 ..Projection type
179 ..Image production
180 ..Stereoscopic or tridimentional
181 ..Color
182 ..Electronic marker generation
183 ...Cursor
184 ..With stabilization (e.g., True Motion, True North)
185 ..Scan conversion
186 ..With sweep expansion
187 .Augmenter
188 .With polarization
189 .For correlation
190 .With recording
191 ..Mapping
192 .Spectrum analysis
193 ..Harmonic
194 .Complex signal (in phase and quadrature)
195 .Digital processing
196 ..Fast fourier transform (FFT)
197 ..With video quantizer
198 .For receiver protection
199 .Automatic frequency control (AFC)
200 .For frequency modulation
201 ..Combined with pulse modulation
202 .For pulse modulation
203 ..With noise reduction
204 ..With pulse shaping
205 .Sensitivity time control (STC)
350 DIRECTIVE
351 .Including a radiometer
352 .Including a satellite
353 ..Having a signal repeater
354 ..With beam steering
355 ..With control of satellite altitude
356 ..Synchronous satellite
357 ..With position indicating
358 ..With satellite signal correction
359 .Including antenna orientation
360 .Including antenna pattern plotting
361 .Including polarized signal communication transmitter or receiver
362 ..Receiver only
363 ...Circular
364 ...Eliptical
365 ..Circular
366 ..Eliptical
367 .Including directive communication system
368 .Including a steerable array
369 ..Injection radiation type
370 ..Retrodirective
371 ..With electronic scanning
372 ...Controlled
373 ..With a matrix
374 ..With a switch
375 ..With a delay line (e.g., serpentine transmission line, frequency scanning)
376 ..Including a remote energy source
377 ..Including a computer
378 .Utilizing correlation techniques
379 ..Side lobe elimination
380 ...Sum of each antenna channel signal
381 ...Difference of each antenna channel signal
382 ...Mixing each antenna channel signal
383 ..Sum of each antenna signal
384 ..Difference of each antenna channel signal
385 .Beacon or receiver
386 ..With transmisson of bearing or position determinative signals
387 ...Iso-chronic type
388 ....Loran
389 .....Loran-C
390 ......With cycle selection
391 .....Loran-A
392 ....With automatic gain control
393 ...Iso-frequency type
394 ...Iso-phase type
395 ....With hetrodyne synchronization
396 ....Omega
397 ....Decca
398 ...Rotating beacon signal
399 ...Tacan
400 ....Receiver only
401 .....VOR
402 ......Doppler
403 ....With circular array of antennas
404 ....VOR
405 .....Doppler
406 ......With circular array of antennas
407 ...Fixed course or bearing indicating
408 ....Moving beam
409 ....With superimposed images
410 ....Glide slope transmitter or receiver
411 .....Receiver only

DIRECTIVE
.Beacon or receiver
..With transmisson of bearing or position determinative signals
...Fixed course or bearing indicating
....Glide slope transmitter or receiver
412 .....Transmitter oly
413 ....Localizer transmitter or receiver
414 ....Distinctive frequencies equi-signal type
415 .....Coded equi-signal (e.g., A and N type)
416 .....Sequentially effective reflectors
417 ..Direction-finding receiver only
418 ...Doppler
419 ...Portable
420 ...With error or deviatioan compensator or eliminator
421 ....Pulse-type noise elimination or compensation (e.g., sky waves)
422 ...With self-orienting antenna pattern
423 ....Plural antennas
424 .....Tracking interferometer
425 ....Conical scan antenna type
426 ....Step track antenna type
427 ....Monopulse or paeuodo monopulse tracking antenna type
428 ...With continuously movable antenna pattern
429 ....Including a stationary antenna
430 ....Including plural moving antennas
431 ....Including a goniometer
432 ...With plural fixed antenna pattern comparing
433 ....Successively commutated
434 .....Including more than two antennas
435 .....By diode switching
436 .....By modulation
437 ....Including more than two antennas
438 ....Including separate indicators
439 ....Including combined effect indicator
440 ....Including a goniometer
441 ...Having a goniometer
442 ...Having a phase detector
443 ...Having a direction indicator
444 ...Having plural receivers
445 ...Having more than two antennas
446 ....Unequal distance between at least three antennas
447 ...Having a spiral antennas
448 ...Having a coil or loop type antenna
449 ...Having a moving antenna
450 .Position indicating (e.g., triangulation)
451 ..By computer
452 ..By plotting table
453 ..By deflected or repeated signal
454 ..Traffic
455 ...Having collision avoidance
456 ...Having traffic control
457 ..Land vehicle location (e.g., bus, police car
458 ..Distance
459 ..Underground object location
460 ..Storm or atomic explosion location
461 ..With speed determination
462 ..With altitude determination
463 ..Having plural transmitters or receivers
464 ...Plural transmitters only
465 ...Plural receivers only

700 R	ANTENNAS
700 MS	..Microstrip
701	.Having electric space discharge device
702	.With radio cabinet
703	.Measuring signal energy
704	.With ice clearer or preventer
705	.With aircraft
706	..Lighter-than-air device
707	..Trailing type
708	..Aircraft part of active antenna or vice versa
709	.Waterborne (e.g., buoyant or with watercraft)
710	..Watercraft part of active antenna or vice versa
711	.With vehicle
712	..Vehicle part of active antenna or vice versa
713	..Supported by vehicle body
714	...Antenna adjustable from inside body
715	...Rod type
716	...Running board
717	..Supported underneath vehicle
718	.Body-attached or connected
719	.Buried underground or submerged under water
720	.Combined with diverse-type art device
721	..Light
722	.With lumped reactance filter in active antenna
723	.Single adjustable length electrically long linear antenna
724	.Convertible to different antennas
725	.Plural separate diverse type
726	..Including balanced doublet and loop-type antennas
727	..Including balanced doublet-type antenna
728	..Including loop-type antenna
729	.Plural diverse-type antennas using same active element
730	..Including balanced doublet-type antenna
731	.Traveling wave type
732	..Circular loop
733	..Rhombic
734	...With feedback
735	..Balanced V
736	..Inverted V
737	..Plural
738	..With reflecting transformer
739	.With terminating resistance at open end
740	..Balanced type
741	.High frequency type loops
742	..Plural
743	..Feed coupling at spaced points on loop
744	..With series reactance in loop
745	.With variable reactance for tuning antenna
746	..Slot type
747	..Balanced doublet type
748	..Loop type
749	.With lumped reactance for loading antenna
750	..Adjustable reactance
751	..Plural antennas
752	..Reactance at free end of active antenna
753	.With spaced or external radio wave refractor (e.g., lens)
754	..With scanning, sweeping, or orienting
755	..With reflector
756	.With polarization filter or converter
757	.With means for moving directive antenna for scanning, sweeping or orienting
758	..Plural relatively movable
759	..Spiral motion
760	..With signal, indicator or alarm
761	..Reflector and antenna relatively movable
762	..Wave guide type antenna
763	..Rotary or rotary oscillatory motion
764	...Loop-type antenna
765	...In different planes
766	...Motor-driven
767	.Slot type
768	..With periodic control of slot or coupling
769	..Ring-shaped slot
770	..Plural
771	...With wave guide coupling
772	.Wave guide type (e.g., horn)
773	..Biconical horn type
774	...Stacked
775	...With reflector
776	..Plural
777	...With control of individual antenna (e.g., lobe switching or steering)
778	...With phasing
779	...With reflector
780	.."Pillbox" type
781 R	..With external reflector or director
781 P	....Plural reflectors
781 CA	....With main and subreflector (Casse-grain type)
782	...With means reducing re-radiation into active antenna
783	..With internal-wave refraction means
784	..With closure
785	..Dielectric type (e.g., polystyrene rod)
786	..With horn
787	.Including magnetic material
788	..Loop type
789	.Within conductive apertured wall
790	.Active sleeve surrounds feed line
791	..With coaxial active rod
792	..Doublet type
792.5	.Logarithmically periodic
793	.Balanced doublet - centerfed (e.g., dipole)
794	..Diverse-type doublets
795	..Sheet or wing type
796	..Helically or angularly staggered plural doublets
797	..Plural crossed (e.g., turnstile)
798	...Plural groups (e.g., stacked)
799	..Plural circumferentially arranged
800	...Plural groups (e.g., stacked)
801	..Three or more collinear units form doublet
802	..Distributed reactance added to arms
803	..Folded
804	...Multiple conductor type
805	..Arms angularly adjustable (e.g., rabbit ears)
806	..Bent arms (e.g., zigzag type)
807	..Tapered, thick, or enlarged arms
808	..Plural-rod arm forming V (e.g., conical arrangement)
809	..Arms non-linearly arranged (e.g., resonant V type)
810	..Plural
811	...Fishbone-type array
812	...Parallel arrangement
813	....Parallel and collinear arrangement
814	....With coupling network
815	....With parasitic element (e.g., reflector or director)
816	...With coupling network
817	...With parasitic element (e.g., reflector or director)
818	..With parasitic element (e.g., reflector or director)
819	...With reflector and director

	ANTENNAS
	.Balanced doublet - centerfed (e.g., dipole)
820	..With coupling network or impedance in the leadin
821	...Balanced to unbalanced circuit
822	...Impedance matching network
823	..Adjustable length
824	.Planar array of linear antennas
825	.Fractional, multiple, or full wave length linear type
826	..Plural
827	...Collinear arrangement
828	..Non-uniformity in antenna
829	..With grounding structure, including counterpoises
830	...With coaxial feed line
831	..Stub type
832	.Active antenna as reflector
833	.Antenna with parasitic director
834	.Antenna with parasitic reflector
835	..Plural active antennas
836	...Plural reflectors
837	..Plural reflectors
838	...Including a screening reflector
839	..Reflector and active antenna relatively movable
840	..Parabolic-type reflector with active antenna at focus
841	.With electrical shield
842	..Loop-type antenna
843	.Having an appreciable wave length dimension
844	.Plural antennas spaced a fractional or full wave length apart
845	.With ground connection spaced from feed line connection
846	.With grounding structure (including counterpoises)
847	..Insulated from or capacity coupled to ground
848	..Artificial or substitute grounds (e.g., ground planes)
849	..Modified natural grounds
850	.With coupling network or impedance in the leadin
851	..With radiation suppressor (e.g., shield)
852	..Plural path with impedance matching
853	..With plural antennas
855	...Loop antennas
856	..Antenna forms transformer primary or secondary
857	..Coupling at spaced points on antenna
858	..Coupled to plural leadins
859	..Balanced to unbalanced circuit
860	..Impedance matching network
861	...Adjustable
862	...Including long line element
863	....Tapered
864	....Quarter-wave transformer
865	..Balanced coupling network to balanced antenna
866	.Loop type
867	..Plural; plural or tapped coils
868	..Adjustable configuration, area or coil length
869	..With rotatable support
870	..With connector or terminals
871	..With collapsible or foldable frame
872	.With housing or protective covering
873	..Antenna embedded, potted, or coated
874	.Mast or tower type
875	..Sectional
876	.Switching between antennas and lines
877	.With reel for antenna
878	.With support for antenna, reflector or director
879	..For plural separate antennas
880	..Adjustable or collapsible support
881	...Foldable
882	...Pivoted or rotatable
883	...Telescoping
884	..Plural wire transmission line or wave guide as support
885	..Stress distributing or static discharging means for support
886	..Horizontally suspended between poles or standards
887	..Streamline-shaped support
888	..For supporting rod-like end portion of antenna
889	...Rod retractible into support
890	..Antenna on post, standard or tower
891	...Antenna along length of post
892	..Antenna on bracket
893	.Plural antennas
894	.With signal, indicator or alarm
895	.Spiral or helical type
896	.Rods or wire form cage or hollow post
897	.Mesh, woven, braided or multiple strip
898	.Hollow metallic body
899	.Having area increasing means (e.g., spiniferous, metal ball on top)
900	.Rod type
901	..Telescoping
902	...Fluid pressure actuated
903	...Flexible rod actuated
904	.Combined
905	..With transmission line
906	..With electrical connector
907	.Antenna components
908	..Active antenna component of particular shape
909	..Refracting means and radio wave energy filters (e.g., lenses and polarizers)
910	...Zoned type
911 R	...Dielectric type
911 L	.....Luneberg type
912	..Reflector or director
913	...With impedance
914	...Diverse curvature
915	...Collapsible, foldable or adjustable
916	...Made of detachable parts
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	DIGESTS
	******************************
DIG 1	With vibration damper or wind catcher
DIG 2	Satellite-mounted antenna

CLASS 346 RECORDERS

DECEMBER 1990

1.1	PROCESSES
2	ANGLE MEASUREMENT RECORDER FOR OPTICAL INSTRUMENTS
3	PERFORMANCE OF MULTIPLE FUNCTIONS OF STEAM AND GAS ENGINES
4	.Pressure responsive element
5	..Drum recorder
6	...Bourdon tube marker element
7	RECORD TRACER MOVEMENT RESPONSIVE TO INERTIA OR MASS INCLINATION
8	COURSE
9	WEIGHT RECORDERS, BY PRINTING OR PERFORATING
10	.Recording directly from weight positioned member
11	.Weight positioned member and independently movable record controlling followup element
12	..Coaxial member and element
13	COMBINED WITH NON-RECORDING INTEGRATOR
14 R	COMBINED WITH NON-RECORDING REGISTER
14 MR	..Meter reading
15	.Fare register
16	..And indicator or alarm
17	COMBINED WITH NON-RECORDING INDICATOR OR ALARM
18	.Speed indicator or alarm
19	COMBINED WITH AUTOGRAPHIC APPARATUS
20	COMBINED WITH CLOCK
21	COMBINED WITH RECORD DELETING MEANS
22	COMBINED WITH RECORD RECEIVER DEPOSIT RECEPTACLE OR RECORD RECEIVER THROUGH CHUTE
23	COMBINED WITH FIDUCIAL LINE MAKING
24	COMBINED WITH RECORD RECEIVER SEVERER
25	COMBINED WITH OTHER NON-RECORDING DEVICES
26	AUTOGRAPH AS SOLE RECORD, TIME DRIVEN ELEMENT
27	CHECK RECEIVERS, SELECTIVE COMPARTMENT
28	EXTENT OF WEB ADVANCE AS SOLE MEASURE OF FUNCTION
29	MULTIFACTOR-DRIVEN RECORDER ELEMENT
30	.Time factor
31	FOLLOW-UP
32	REBALANCING SYSTEMS
33 R	COMBINED WITH EXTERNAL RECORDER OPERATING MEANS
33 WL	..Well logging
33 P	..Pipe
33 F	..Flaw
33 M	..Magnetic miscellaneous
33 EC	..Echo
33 S	..Spark
33 MC	..Machine control record
33 A	..Optical system
33 B	..Radiation system
33 C	..Seismic system
33 ME	..Medical environment
33 D	..Speed
33 TP	..Temperature or pressure
34	.Plural external means for one recording couple
35	.Single external means for plural markers, single record
36	.Valve movement concurrent
37	.Radio receiver, tuning responsive
38	.Ordnance responsive
40	.Weight depressive member
41	.Case cover, or case cover key, or keyhole cover
42	.Gate, door, or turnstile control member
43	.Pump dispenser part
44	PLURAL RECORDERS
45	PLURAL-FUNCTION RECORDER, DISTINGUISHABLE RECORDINGS
46	.Records distinguishable by color
47	..Workmen's records
48	.Magazine retained record receivers and receiver selecting mechanism
49	.Plural markers and single record receiver
50	..With dotting, printing, or punching marker
51	...Plural selective, mechanical, manually operated, marker control devices on recorder
52	...Markers under selective control of element normally discrete from recorder
53	....With clock time index-and-dial or character recorder
54	....With register character recorder
55	....Time-driven record receiver
56	...With discrete element as marker
57	....Time-driven record receiver
58	....And clock time index-and-dial or character recorder
59	...With clock time index-and-dial or character recorder
60	....And register character recorder
61	...With register character recorder
62	.Single marker and single record receiver
63	..Under discrete element control
64	...Time-driven record receiver
65	SINGLE FUNCTION RECORDER, SINGLE SCALE, VARIABLE VALUE
66	SINGLE FUNCTION RECORDER, DUPLICATE OR PORPORTIONAL SCALE RECORDS
67	.Single marker
68	RECORD RECEIVER REMOVAL AND MARKER DISPLACEMENT
69	RECORD ELEMENT FRICTION ELIMINATING VIBRATOR
70	RECORD RECEIVER EXPANSION AND MARKER POSITION SHIFT
71	UNDULATORY RECORD, CONSTANT AMPLITUDE
72	FLOAT RESPONSIVE OR EXPANSIBLE CHAMBER RESPONSIVE MARKER
73	CENTRIFUGAL GOVERNOR RESPONSIVE MARKER
150	ELECTRIC
151	.Thermoplastic
152	.Radioactive
153.1	.Electrostatic
154	..Signal switching
155	..Electrostatic head
156	...Character wheel
157	..Color
158	..Electron beam
159	..Ion beam
160	..Photo scanning
160.1	..Structural enhancement
161	.Cathode ray
162	.Spark
163	..Spark burning
164	..Spark chemical
165	.Electrolytic
74.2	MAGNETOGRAPHIC
74.3	.Physical reorientation of magnetic particles
74.4	.Radiation sensitive
74.5	.Magnetographic head
74.6	.Magnetochemical or physical chemistry
74.7	.Multiple color
75	WITH GAS BLAST AGAINST RECEIVER
76 R	PYROGRAPHIC AND THERMO-CHEMICAL
76 PH	..Thermal print head
76 L	..Laser
77 R	RECORD RECEIVER DEFORMING
77 E	..Thermoplastic
78	PRINTING, DOTTING, OR PUNCHING MARKER
79	.Interconnected record receiver feed and record effecting movement
80	.Time record

		PRINTING, DOTTING, OR PUNCHING MARKER
		.Time record
81		..Clock time index-and-dial or character printing or punching
82		...On discrete card
83		....With variable positioning means for card
84		.....Plural fixed guides
85		.....Card modifier to prevent superposed records
86		.....Time controlled
87		...Record receiver movable to time markers
88		....Dial time markers
89		...Characters movable to platen
90		....Translatable dial or pointer
91		...Time character advancing or resetting mechanism
92		....Rotatable dial or pointer
93		..On web
94		.Register character printing, dotting or punching
95		..Discrete record receiving mechanism
96		...With card modifier to prevent superposed records
97		..Fare or passenger register character
98		..Register character advancing or resetting mechanism
99		...Card control
100		.Rolling serrated or toothed punching marker
101		.Helical record-effecting element
102		.Rotatable disc record receiver
103		.Rotatable drum record receiver
104		.Card or leaf record receiver
105		.Ink transfer support or moving means
106		..With coordinated marking
107	R	PHOTOGRAPHIC
107	A	..Timing means
107	B	..Race cameras
107	C	..Depository camera
107	MP	..Meter photographing
107	SC	..Seismic camera
107	VP	..Vehicle photographing
107	W	..Well bore photographing
108		.Ray recorder
109		..Mirror galvanometer
110	R	..Cathode ray
110	V	....Cathode ray tube with vacuum system
111		WRITERS
112		.Receiver and marker movable
113		..Interconnected drive
114		..Time-driven record receiving web
115		...Time-driven marker, variable length stroke
116		...Marker pivotally movable solely
117	R	....Movable in plane of web, only
117	A	......Rectilinear
118		..Work-driven record receiving web
119		...Marker pivotally movable, only
120		....Work-driven marker, only
121		..Time-driven record receiving disc
122		...With translation of disc
123		...Marker pivotally movable, only
124		..Work-driven record receiving disc
125		..Drum record receiver
126		...Compound motion drum
127		...Time-driven drum
128		....Marker pivotally movable, only
129		..Card receiver
130		.Receiver, only movable during recording
131		..Disc receiver
132		..Drum receiver
133		..Card receiver
134		RECORD RECEIVERS AND/OR DRIVING MEANS THEREFOR
135.1		.Laminated, impregnated, or coated bases
136		.Web
137		.Disc
138		.Drum
139	R	MARKERS AND/OR DRIVING MEANS THEREFOR
139	A	..Endless belt drive means
139	B	..Cable drive means
139	C	..Stylus feature
139	D	..Lead-screw drive means
140	R	.With ink supply to marker
140	A	...Reservoir-type pen
141		.Printing, dotting, or punching marker
142		..Hand time stamps
143		.Hand driven
144		WATCHMAN'S OR WORKMAN'S KEY OR KEY ENCLOSING BOX
145		INSTRUMENT SUPPORT INSTRUMENT PART SUPPORT
146		MISCELLANEOUS

CLASS 350 OPTICS, SYSTEMS AND ELEMENTS

DECEMBER 1990

1.1	HAVING SIGNIFICANT INFRARED OR ULTRAVIOLET PROPERTY
1.2	.Compound lens system, lens system or component
1.3	..Infrared lens having four or more components
1.4	..Infrared lens having three or fewer components
1.5	.Fluid filter or mirror
1.6	.Multilayer filter or reflector
1.7	..Having metal layer
3.6	HOLOGRAPHIC SYSTEM OR ELEMENT
3.61	.Having particular recording medium
3.62	..Recyclable
3.63	...Sandwich having photoconductor
3.64	...Crystalline
3.65	.Having nonplanar recording medium surface
3.66	.For synthetically generating a hologram
3.67	.Using modulated or plural reference beams
3.68	..Spatial modulation
3.69	.Copying by holographic means
3.7	.Using a hologram as an ordinary optical element
3.71	..Scanner
3.72	..Lens
3.73	...Multiple point hologram
3.74	.Having defined page composer
3.75	.For producing, or reconstructing images from, multiple holograms
3.76	..holographic stereogram
3.77	..Superimposed holograms only
3.78	..Discrete hologram only
3.79	...Sequential frames on moving film
3.8	.Having particular laser source
3.81	.Having multiple beam or diffuse object illumination
3.82	..In Fourier transform holography
3.83	.Having optical element between object and recording medium
3.84	..Focused image holography
3.85	.For reconstructing image
3.86	..Real image
4.1	KALEIDOSCOPE
4.2	.Including particles loosely housed for agitation
6.1	LIGHT BEAM DEFLECTION BY USING A PERIODICALLY MOVING ELEMENT
6.2	.Including transmissive type moving element
6.3	..Having moving lens
6.4	..Having moving prism
6.5	.Including reflective type moving element
6.6	..Having oscillating element
6.7	..Having multifaceted rotating element
6.8	...With facets parallel to rotation axis
6.9	..Having planar rotating reflector with transverse rotation axis
6.91	..Having planar rotating reflector with rotation axis in its plane
500	IMAGE STABILIZATION
501	COMPOUND LENS SYSTEM
502	.With image recorder
503	.With curved reflective imaging element
504	..Two or more in a series
505	...Concave, convex combination
506	.Right angle cavity inspector
507	.Microscope
508	..With viewed screen
509	..Interference
510	...Using polarized light
511	..With plural optical axes
512	...Side-by-side fields
513	...Plural oculars
514	....Binocular
515	.....Stereoscopic
516	......With single or parallel objectives
517	.......For viewing stereo pairs
518	..Spacing of optical elements axially adjustable
519	...Variable magnification
520	..Imaging elements movable in and out of optical axis
521	..Adjustable along optical axis
522	..With rotatable adjustment
523	..Illuminator
524	...Using polarized light
525	...With annular lighting structure
526	...With optical switching means
527	...With condensor and image fields combined
528	...With support
529	..Stage or slide carrier
530	...Adjustable along optical axis
531	...With plural transverse movements
532	...With turntable
533	...With temperature control
534	..Transparent slide
535	...Reference lines or grids
536	...Specimen cavity or chamber
537	.Telescope
538	..With viewed screen
539	..With image anti-rotation means
540	..Periscope
541	...With plural optical axes
542	....Binocular
543	...With mechanical adjustment
544	....Extensible structure
545	..Binocular
546	...Foldable or collapsible
547	...Body supported or with handle
548	....With focusing means
549	....With adjustable interocular distance
550	...With adjustable interocular distance
551	....Oculars swing about central axis
552	.....Spacing of optical elements axially adjustable
553	....Oculars rotate about separate axes
554	.....Spacing of optical elements axially adjustable
555	....Spacing of optical elements axially adjustable
556	...Spacing of optical elements axially adjustable
557	..With plural optical axis
558	...Plural magnification in same viewing field
559	..Selective magnification
560	..Variable magnification
561	..With relay
562	...With reticle
563	..Focusing or relatively sliding barrels
564	...Internal focusing
565	...With reticle
566	..With reticle
567	..With line of sight adjusting means
568	...Equatorial mount
569	..With prism or U-shaped optical path
570	.Variable magnification
571	.With tilted lens or tilted image plane
572	.With relay
573	..Repetitious lens structure
574	EXTENDED SPACING STRUCTURE FOR OPTICAL ELEMENTS
575	.Wide angle
576	.With screen or reticle in real image plane
577	.Extension of tubular element adjustable
578	WITH BLIND FOR NONVIEWING EYE
579	BARREL END EYE GUARD OR SHIELD
580	BARREL END OR LENS MOUNT SHADE
581	.Collapsible or foldable
582	MOISTURE OR FOREIGN PARTICLE CONTROL
583	.Optical element rotates

MOISTURE OR FOREIGN PARTICLE CONTROL
584 .Fluid directed across optical element
585 .Microscope drape
586 .Access facilitating structure
587 .Cap or cover
588 .Humidity or temperature control
589 .Sealing
590 ..Mirror, prism or signal reflector
96.1 LIGHT TRANSMITTING FIBER, WAVEGUIDE, OR ROD
96.11 .Integrated optical circuit
96.12 .Thin-film optical waveguide
96.13 ..Having modulating or switching means
96.14 ...Utilizing electro-optics
96.15 .Optical coupling means
96.16 ..Having data bus means
96.17 ..For use between fiber and thin-film device
96.18 ..Having lens focusing means
96.19 ..Utilizing prism and grating
96.2 .Optical connecting means
96.21 ..Having fiber to fiber mating means
96.22 ..Having fiber bundle mating means
96.23 .Optical transmission cable
96.24 .Optical fiber bundle
96.25 ..Having imaging bundle
96.26 ...For fiber scope
96.27 ...For fiber bundle plate
96.28 .Optical imaging tunnel
96.29 .Optical fiber with cladding
96.3 ..Waveguide
96.31 ...With graded index core or cladding
96.32 ...Utilizing nonsolid core or cladding
96.33 ...Utilizing multiple core or cladding
96.34 .Optical conductor characterized by material
97 SIGNAL REFLECTORS
98 .Hand or body carried
99 .Vibrating, oscillating, or rotating
100 .For a signal source remote from observer
101 .Light transmitting from source behind a reflector
102 .Cube corner, trihedral, or triple reflector type
103 ..Unitary plate or sheet comprising plural reflecting elements
104 .Including a curved refracting surface
105 ..Minute transparent spheres embedded in matrix
106 ..Plural refracting elements formed as a unitary mass
107 ..With individual reflector element mounting means
108 ...Including a threaded member
109 .Discrete reflecting elements formed as a unitary mass
110 SCALE OR INDICIA READING
111 .Polarizer
112 .Prism
113 .Mirror
114 .Lens
115 ..Movable or adjustable
116 ...Along scale or indicia
117 PROJECTION SCREENS
118 .With sound producer
119 .Acoustical
120 .Moving during projection
121 .Tracing (e.g., camera lucida)
122 .With lens (e.g., camera obsura)
123 .With reflector or additional screen
124 .Border, mask, shade, or curtain
125 .Curved
126 .Embedded particles
127 .Unitary sheet comprising plural refracting areas
128 ..Lenticular
129 .Unitary sheet comprising plural reflecting areas
130 STEREOSCOPIC
131 .Depends on eye parallax
132 .With right and left channel discriminating means (e.g., polarized or colored light)
133 .Stereo-viewers
134 ..View changers
135 ...Picture moves linearly past viewing aperture
136 ..Compensates for camera position (e.g., plotting or mapping type)
137 ..Reflected line of sight
138 ...Pictures offset, transposed, or have respective right or left sides adjacent
139 ..Ocular spacing or angle between ocular axes adjustable
140 ..Collapsible
141 ..Illumination
142 ..Ocular to picture distance adjustable
143 ..Supporting, mounting, enclosing, or light shielding structure
144 RELIEF ILLUSION
145 BINOCULAR DEVICES
146 .Binocular loupe type
330 UTILIZING A LIQUID CRYSTAL MATERIAL
331 R .With electrical excitation means
331 T ...With temperature detector
332 ..Having particular electrical driving circuit
333 ...For driving row electrode and column electrode
334 ..Having significant cell structure
335 ...Including plural cells in series
336 ...Including particular electrode
337 ...Including particular polarizer
338 ...Including particular reflector
339 R ...Including nonconductive layer
339 D .....Diffuser
339 F .....Filter
340 ....For perpendicular alignment
341 ....For parallel alignment
342 ...Including photoconductive layer
343 ...Including particular seal
344 ...Including particular spacer
345 ..Having particular illuminator
346 ..Exhibiting phase transformation or reversal in sign of dielectric anisotropy
347 R ..Exhibiting birefringence effects or variable index of refraction
347 V ....Variable index of refraction
347 E ....Electrically controlled birefringence
348 ..Exhibiting variable diffraction
349 ..Exhibiting variable absorption of light due to an additive in the liquid crystal material
350 R ..Having particular liquid crystal composition
350 S ....Smectic
350 F ....Flourescent additive
351 .With thermal excitation means
352 .Polarization filter
370 FOR POLARIZATION OF LIGHT OR USING POLARIZED LIGHT
371 .Mechanical stress responsive (e.g., elasto-optical)
372 ..For filtering
373 ..With particular medium
374 .Electric, magnetic or electromagnetic field responsive means (e.g., electro-optical, magneto-optical)
375 ..Magnetic field (magneto-optical)
376 ...For modulation of beam property

	FOR POLARIZATION OF LIGHT OR USING POLARIZED LIGHT
	.Electric, magnetic or electromagnetic field responsive means (e.g., electro-optical, magneto-optical)
	..Magnetic field (magneto-optical)
	...For modulation of beam property
377	....Using layered structure or plural mediums
378	....With particular direction of the field in relation to the medium, beam direction or polarization
379	..For beam focusing
380	..For beam deflection or scanning
381	...Using reflecting or cavity structure
382	...Using more than one polarization (e.g., digital)
383	...Using single polarization
384	..For modulation of beam property
385	...Using reflective or cavity structure
386	....Semiconductor
387	...Compensation technique
388	...Using plural mediums
389	...With particular direction of the field in relation to the medium, beam direction or polarization
390	...With particular medium or state of the medium
391	....Liquid medium
392	...With particular electrode structure or arrangement, or medium mounting structure or arrangement
393	...With particular field
394	.By reflection or refraction
395	..With particular medium
396	.Polarization varies over surface in direction of magnitude (e.g., vetograph)
397	.Using dichroic medium
398	..Of particular composition or structure
399	.Glare prevention by discriminating against polarized light
400	.With birefrigent element
401	..For beam deflection or splitting
402	..Prisms
403	..For modulation of beam property using plural elements
404	...Frequency filter or interference affects
405	...Using compensation techniques
406	..With particular material or mounting structure
407	.Superimposed or in series polarizers relatively adjustable
408	.With color filter
162.11	FOR DIFFRACTION
162.12	.Using Fourier transform spatial filtering
162.13	..For correlation only
162.14	..For convolution (crosscorrelation) only
162.15	..With diffraction grating before or at Fourier plane
162.16	.From zone plate
162.17	.From grating
162.18	..For ornamental effect or display
162.19	..For diffractive subtractive filtering
162.2	..Including particular grating characteristic
162.21	...Nonplanar grating
162.22	...Echelette or blazed grating
162.23	...Reflection grating
162.24	...Variable grating
163	LIGHT INTERFERENCE
164	.Interference produced by coating or lamina
165	..With transmissive coating on free lens surface
166	..Selective
167	SURFACE COMPOSED OF LENTICULAR ELEMENTS
168	LIGHT DISPERSION
169	SINGLE CHANNEL TO OR FROM PLURAL CHANNELS (E.G., LIGHT DIVIDING, COMBINING, ORPLURAL IMAGE FORMING)
170	.Portion of rays refracted by prism
171	.Rays reflected
172	..Different rays reflected and transmitted
173	..Partial reflection at prism face or interface between prisms
174	..Ray combining
409	LENSES
410	.Eyepiece
411	.Double refracting
412	.With field curvature shaping
413	.With graded refractive index
414	.Microscope objective
415	.Telecentric system
416	.Spherical
417	.Method of making or assembly
418	.Fluid
419	..With variable magnification
420	.Anamorphic
421	..With prism anamorphoser
422	.Selective magnification by exchanging or adding lens components
423	.With variable magnification (e.g., zoom type)
424	..Prism lens type
425	..With fixed conjugates
426	..Reverse telephoto
427	..With mechanical compensation
428	...With macro-type focussing
429	..Adjusting mechanism
430	...With macro-type focussing
431	.Diffusing
432	.Including a nonspherical surface
433	..Cylindrical
434	..Toroidal
435	..Paraboloidal
436	.Asymmetric (e.g., prismatic or eccentric)
437	.Plural focal length
438	.Selective wavelength transmitting or blocking
439	..With separate filter
440	.Annular zonal correcting
441	.Panoramic
442	.Including concave or convex reflecting surface
443	..With aspheric surface (e.g., Schmidt lens)
444	..Surface coated on lens
445	.With reflecting element
446	..For producing a double pass
447	.With diverse refracting element
448	.With light limiting or controlling means
449	..Diaphragm
450	...Between lens components
451	.With multipart element
452	..Echelon (e.g., Fresnel lens)
453	.Afocal (e.g., Galilean telescopes)
454	.Telephoto
455	..With five components
456	..With four components
457	..With less than four components
458	.Reverse telephoto
459	..With eight components
460	..With seven components
461	..With six components
462	..With five or less components
463	.Multiple component lenses
464	..Six components
465	..Five components
466	...+ - - + + arrangement

	LENSES
	.Multiple component lenses
	..Five components
467	...+ + - - + arrangement
468	...+ + - + + arrangement
469	..Four components
470	...+ - - + arrangement
471	....With multiple element
472	...+ + - + arrangement
473	...+ + + - arrangement
474	..Three components
475	...+ - + arrangement
476	....With multiple element component
477	...+ + - arrangement
478	...+ + + arrangement
479	..Two components
480	...+ + arrangement
481	...+ - arrangement
482	.Single component with multiple elements
483	..Three or more elements
235	.With viewed object or viewed field illumination
236	..Illuminating beam coaxial with lens axis
237	..Illumination through lens
238	..With viewed object support
239	.With viewed object support
240	..On lens supporting handle
241	..Relatively movable informatory sheet and lens (e.g., reading machines)
242	.With lens casing
243	.Combined with diverse art tool, instrument or machine
244	..Operation viewed through lens
245	.With support
246	..With additional handle
247	..Lens movable in its plane
248	..Body or apparel attached or carried
249	...Monocular loupe type
250	..Foldable or collapsible
251	..With clamp or grip
252	..Lens mounts
253	...With temperature compensation or control
254	...Plural lenses in common carrier selectively operable (e.g., turret type)
255	...With axial adjustment (e.g., adjustable focus)
256	...With handle
257	...Detachably attached to plate or barrel
258	BUILDING INTERIOR ILLUMINATION WITH OUTSIDE LIGHT
259	.Unitary light transmitting member comprising plural reflecting or refracting elements
260	..Plural members in series
261	..Elements on two sides of member
262	..With internal reflections
263	.Slats or strips
264	.With reflection
265	..Internal
266	LIGHT CONTROL BY OPAQUE ELEMENT OR MEDIUM MOVABLE IN OR THROUGH LIGHT PATH
267	.Fluid
268	.With glare or flicker elimination
269	.Electro-mechanical
270	..String or ribbon type
271	.Slit type
272	.With relative motion of two aperture elements
273	.With rotating element (e.g., scanning discs)
274	..Continuously rotating apertured element
275	..Element rotates about axis perpendicular to light path
276 R	GLARE OR UNWANTED REFLECTION REDUCTION
276 SL	..Stray light absorbers
277	.With mirror (e.g., mirror with glare screen)
278	..Anti-glare mirrors
279	...Adjustable
280	....Plural reflecting surfaces
281	.....Prismoidal
282	.....Reversible
283	....Translucent or other semitransmitting panel selectively positioned in front of mirror
284	.Display window
484	LIGHT BEAM DEFLECTION USING A MOVING ELEMENT OR MEDIUM
485	.By frustrated total internal reflection
486	.By moving a reflective element
487	..Reflective element moved by deformable support
353	LIGHT CONTROL BY CHANGING BULK OPTICAL PARAMETER OF AN OPTICAL ELEMENT
354	.Optical parameter changed by actinic radiation
355	.Optical parameter changed by an applied electrical or magnetic field
356	..Electro-optic light valve
357	..Electrochromic light valve
358	.Optical parameter changed by an acoustic wave
359	LIGHT CONTROL BY CHANGING OPTICAL OR PHYSICAL CHARACTERISTIC OF A LIGHT CONTROL SURFACE OR INTERFACE
360	.Shape or contour of light control surface altered
361	..Light control surface forms image on projected light beam
362	.Changing position or orientation of suspended particles
363	.Light control surface formed or destroyed
286	PRISMS
287	.Mounts
600	MIRRORS
601	.With a transmitting property
602	..With reflections in series
603	.Back to back
604	.Retractable vehicle mirror
605	.Automatically adjustable with vehicle position
606	.On relatively movable vehicle portion or accessory
607	.Including means for controlling the shape of a mirror surface
608	..Membrane mirror in mechanical contact only at its edge
609	..With means for minimizing internal mirror stresses
610	...Fluid cooled mirror
611	..Including a plurality of adjustable mirror supports
612	.Plural mirrors
613	..Composite or echelon mirrors or light concentrating array
614	...With a line focus
615	..Identical side mirrors adjustable with respect to a central mirror
616	..Identical adjacent mirrors identically supported
617	...With reflections in series
618	..With reflections in series
619	...Including curved mirror surfaces in series
620	....With concave and convex mirrors in series
621	...To view observer

MIRRORS
.Plural mirrors
..With reflections in series
622 ...With three or more reflections in series
623 ...Including an adjustable mirror
624 ....Including a curved mirror
625 ..Including adjacent plane and curved mirrors
626 ..Relatively adjustable
627 ..Wide angle segmented mirrors
628 .Concave cylindrical or providing a line focus
629 .With mirror surface of varied radius
630 ..Concave
631 .With support
632 ..Mirror movable relative to support
633 ...With rotary to linear motion converting mirror adjusting means
634 ....With means for rotation about perpendicular axes
635 ...With a rigid handle extending to or near a mirror pivot
636 ...With means for rotation about perpendicular axes
637 ...With switch or motor controlling mirror movement
638 ...Body or apparel mirror support
639 ...With mirror supporting column or sliding adjustment
640 ..With handle
641 ..Laminated or layered mirror support
642 .With selective absorption or transparent overcoating
322 SCREENS
311 FILTERS
312 .Fluid
313 .Sequentially additive
314 .Neutral or different densities
315 .Movable in or out of optical path
316 .Superimposed or series
317 .Filters in optical parallel (e.g., side-by-side)
318 .With support or frame
319 OPTICAL APERTURES OR TUBES, OR TRANSPARENT CLOSURES
320 METHODS
321 MISCELLANEOUS

****

DIGEST

****

DIG 3 Magnetic

200 EYE EXAMINING OR TESTING INSTRUMENT
201 .For fusion and space perception testing (e.g., stereoscopic vision)
202 ..Of abnormal muscular functioning
203 .Eye exercising or training type
204 .For interpupillary distance measuring or lens positioning
205 .Objective type
206 ..Including eye photography
207 ...Having spurious reflection blocking
208 ...Having means to detect proper distance or alignment (i.e., eye to instrument)
209 ..Including eye movement detection
210 ...Using photodetector
211 ..Including projected target image
212 ...For cornea curvature measurement
213 ..Including light filter or absorber
214 ..Including diaphram or slit
215 ..Including light polarizing means
216 ..Including lens selectively insertable in optical path
217 ...On rotary disc
218 ....Hand held type
219 ..With contact lens
220 ..Including reflectors with off-set surfaces
221 ..Including illuminator
222 .Subjective type
223 ..Self examining type
224 ..Perimeter type
225 ...With rotatable arm
226 ...With bowl type screen
227 ..Including trial frame
228 ...With multifocal lens
229 ...With plural lens carrier
230 ...With individual lens holder
231 ...Removably attachable to eye glass frame
232 ..With light polarzing lens
233 ..Lens or filter selectively insertable in optical path
234 ...Mounted on rotatable disc
235 ....Having plural disc carrier
236 ...Movable along optical axis
237 ..Including target image projection
238 ...Tachistoscope type
239 ..Including test chart or target
240 ...Stereoscopic type
241 ...Astigmatism type
242 ...Chromaticity type
243 ...Illuminated
244 ...Having support or cabinet
245 .Support
246 .Methods of use
247 ..For contact lens fitting
41 SPECTACLES AND EYEGLASSES
42 .Lens repair devices
43 .Floating or underwater type
44 .With antiglare or shading
45 ..Partially occluding the light-path area
46 ..Perforated opaque plates or shields
47 ..Removable and/or adjustable filters or screens (e.g., clip-on type)
48 ...Spring biased
49 ..Polarizing
50 .With rear-view reflectors
51 .With decoration or ornamentation
52 ..Detachably secured
53 .Shooting type
54 .Invertible or reversible multifocal type
55 .With vertical adjustment of multifocal lenses
56 .Lorgnette type
57 .With auxiliary lenses movable in and out of the optical path (e.g., clip-on-type attachments)
58 ..Spring biased or secured by friction members
59 .Lens pivots in and out of optical path
60 .With lens suspension bar (e.g., torsion bar)
61 .U-shape or half-moon lens below eye level
62 .With moisture prevention or absorption
63 .Folding
64 ..Pince-nez type
65 .Pince-nez type (including pince-nez bridges, nose grips and nose pads therefor)
66 ..With ear chain or temple
67 ..Plural bridges
68 ..With resilient extensible bridge
69 ..Lens and nose grip movable on flexible bridge
70 ..Posts or studs connecting bridge and nose grip
71 ..With spring biased nose grips
72 ...With pivoting levers
73 ....With flat spiral springs
74 ....With springs below bridge
75 ....With springs encased
76 ..With adjustable or rockable nose grips or pads
77 ...With ball joints
78 ..Nose pads or cushions
79 ...Plural pad parts engage the nose
80 ...Detachable
81 ...Perforated or serrated
82 ...Fluid-filled or suction type
83 .Continuous rim mounting
84 ..With rotating means for multifocal lenses
85 ..Upper rim portion slotted
86 ..With lens retaining or locking means
87 ..Nose guards or pads integral with frame
88 ..Nose guards or pads removable or adjustable
89 ..With brace arm temple support
90 .Split rim mounting
91 ..With brow pieces or top arms
92 ...Screwless lens mounting
93 ...With brace arm supports for temple or lens
94 ..With auxiliary bridge
95 ..Expansible and contractible lens rim
96 ..Locking member secures lens against rotation
97 ..Split connected by U-clamps or pivot links
98 ..Split on nasal side of rim (i.e., at bridge)
99 ..Clamp and temple pivot screw spaced along rim clamping arm
100 ..Clamp and temple pivot screw coincident on rim clamping arm
101 ..Metal clamps embrace the rims and connect to bridge and/or temples
102 ..Combined metal and plastic rims
103 .Brace arm or semi-rimless mounting
104 ..Arm or rim of plastic or of different material (e.g., metal and plastic)
105 ..Detachable brace arm
106 ..Screwless lens mounting
107 ..With adjustable lens or frame part
108 ..Brace arm supports lens at two spaced points or constitutes a partial rim
109 ..Brace arm extends along edge of lens
110 .Rimless mounting
111 .Temples
112 ..With pocket clip or clasp

SPECTACLES AND EYEGLASSES
.Temples
113 ..Spring biased
114 ..Resilient or flexible
115 ..Reversible or axially rotatable
116 ..Detachable
117 ..With covered core or rod (e.g., reinforced)
118 ..Extensible (e.g., with adjustable sleeve member
119 ..Two-part type (e.g., jointed)
120 ..Inclined to lens plane
121 ..With connector
122 ..With skin protecting earpiece covering
123 ..With head or ear engaging attachments
124 .Bridges
125 ..Crossbar type
126 ..Flexible
127 ...Ball or chain type
128 ..Adjustable
129 ..Reinforced
130 ..With auxiliary support
131 ..With nose grip or guard integral with bridge
132 ..With nose grip, nose guard, pad, or cushion
133 ..With connectors or straps
134 ...Unitary bridge and straps
135 ...With lens clamping straps
136 .Nose pads or cushions
137 ..Adjustable, rockable, or pivotable
138 ..Detachable
139 ..With cover or coating
140 .Connectors
141 ..With screw locking means
142 ..Strap type
143 ...With particular bracing bar or stud
144 ...With cementing or fusing
145 ...With cushion around lens screw or bolt
146 ....Sleeve or bushing
147 ...With serrated interengaging parts
148 ...Adjusting
149 ...With interengaging projection and recess
150 ...With resilient parts (e.g., resilient strap arms)
151 ....Spring between lens and strap
152 ...With clamping arms
153 ..With particular hinge
154 .Lens linings or rims
155 .With support or holder (e.g., on hat or cap)
156 ..With head embracing bow or chain
157 ..Neck retainers
158 .Combined
159 .Ophtahalmic lenses or blanks
160 R ..Eye contact type
160 H ....Hydrophilic
161 ...Multifocal
162 ...Colored
163 ..With light filtering means
164 ...Multifocal
165 ...With sections of different light absorption
166 ..With lens protective layers
167 ..Cataract correction type
168 ..Multifocal
169 ...Gradually varying focal power
170 ...With prismatic segment
171 ...Three or more foci
172 ...Multiple elements
173 ..Image size (aniseikonia) correction
174 ..With beveled, polished or reinforced edges
175 ..Prismatic type
176 ..Focus and/or astigmatism correction
177 ..Methods
178 .Methods (e.g., securing lenses in mountings)

1 WITH SOUND ACCOMPANIMENT
2 .Cyclic motion pictures with sound (e.g., praxinoscopes
3 .Sound stages, methods and accessories
4 ..Prompters
5 .Methods
6 .Selectively operable plural records, recorders or reproducers
7 ..With change-over control
8 ..Plural sound or picture record selection
9 ..Plural sound reproducers sequentially operable
10 ..Plural sound transducers selectively operable
11 .Sound allocation
12 .Picture and sound synchronizing
13 ..Manual control
14 ..Loop control
15 ..Sound record controls picture
16 ...Control actuated by sound record
17 ....Control signal carried by sound record
18 ...By position of sound transducer of separate sound means
19 ..Picture controls sound
20 ...Control signal carried by picture record
21 ..With independent speed regulation
22 ..With synchronous starting
23 ..With synchronizing indicator
24 ...On picture and sound records
25 .With picture and sound control systems
26 .Common picture and sound record carrier systems
27 ..Flexible strip type
28 ...Common light source for picture and sound
29 ...Spaced picture gate and sound transducers
30 ....With damping
31 .Separate picture and sound carrier systems
32 ..Picture strip and groove-type sound disc or cylinder
33 ...Interconnecting drive permits relative position adjustment
34 .Housing and supports
35 ..With acoustic isolation
36 .Reproducer and screen arrangements
37 .Picture and sound recorder carries
38 METHODS
39 .Applications (e.g., motion analysis, marksmanship training)
40 .Exhibiting
41 ..Controlling projector illumination
42 ...With color filtration
43 ..Enhancing relief illusion
44 .Recording
45 ..Photographing with light filtration
46 ..With plural exposure of a single film
47 ..With projected picture component
48 ..With special scenery and staging effects
49 ...Illuminating the subject
50 ...Making a series of drawings (e.g., animation methods)
51 ....Using photographic guides
52 ....With manipulation of drawings
53 ...Moving camera position
54 ...Manipulating puppet or mannequins
55 ..Providing printed titles
56 .Carrier treating or working
57 STEREOSCOPIC CAMERAS AND/OR PROJECTORS
58 .Interlineated
59 .Plural film strip
60 .Simultaneous recording or reproducing left-right images
61 ..With image separation by special projection screen
62 .Sequential recording or reproducing left-right images
63 ..With image separation by synchronized viewer
64 ..With reciprocating film stip carrier
65 ..With pre-objective reflecting system
66 COLOR CAMERAS AND/OR PROJECTORS USING MONOCHROME FILM
67 .Simultaneously recorded or projected images
68 RECORDING OR PROJECTING PICTURE IMAGE DURING CHANGE CYCLE OF PRECEDING PICTURE
69 PANORAMIC PICTURE TYPE
70 .Mosaic picture
71 ..With vignetting
72 REMOVABLE FILM STRIP MAGAZINE TYPE
73 .Spool or magazine selective
74 .With magazine ejecting
75 .With light trap or occlusion
76 ..Shutter type
77 .With focal plane indexing
78 R .Magazines
78 C ...Coded signals on magazines
79 WITH PLURAL PICTURE SIZES AND TYPES
80 .Plural film width
81 INTERLINEATED PICTURE TYPE
82 WITH PICTURES IN TRANSVERSE ROWS
83 WITH PICTURES IN PLURAL LONGITUDINAL COLUMNS
84 TIME COMPRESSION OR EXPANSION (E.G., TIME LAPSE OR HIGH SPEED)
85 SPECIAL EFFECTS
86 .Depth illusion
87 .Animation
88 .Sets
89 ..Projected picture component
90 .Titling devices
91 R .Transition effects (e.g., wipes and dissolves)
91 C ...In a camera
91 S ....Film transport controlled
92 WITH FILM CARRIED CONTROL SIGNALS
93 CAMERA WITH PLURAL FIELDS OF VIEW
94 CAMERA WITH DEFLECTED FIELD OF VIEW
95 GUN-TYPE CAMERAS AND/OR PROJECTORS
96 OPAQUE PROJECTORS
97 WITH SUPERIMPOSED FILM STRIPS
98 INDIVIDUAL PICTURE PLATE TYPE
99 .Book leaf type (e.g., mutotropes)
100 .Traveling observer
101 PICTURE DRUM TYPE (E.G., AEOTROPES)
102 PICTURE DISC TYPE
103 .Spiral picture arrangement
104 CABINET-TYPE PROJECTOR
105 OPTICAL RECTIFIER TYPE
106 .Scanning reflectors and refractors
107 .Rotating reflector disc
108 .Rotating reflector drum
109 .Reflector angularly displaced about fixed axis
110 .Reflector displaced
111 ..Plural reflectors
112 ...With angular adjustment during displacement
113 .Refractor
114 ..Plural projection lenses
115 ...With rotary carrier
116 ..Plural refractor elements with rotary carrier
117 ...Lenticular drum
118 ...Lenticular disc
119 ..Rotating plano parallel prism
120 ...Plate type
121 SEQUENTIALLY OPERATED STILL CAMERAS
122 .With film severing or perforating means

123 EXHIBITORS WITH PLURAL FILM STRIP SELECTION
124 WITH REWINDING OF FILM STRIPS
125 .During projection of another film strip
126 WITH NONREWINDING FILM STRIP (E.G., ENDLESS FILM TYPE)
127 .Zigzag or sinuous film support
128 .Coil type
129 FILM STRIP VIEWING APPARATUS
130 WITH FILM TREATING OR WORKING
131 COMBINED WITH DIVERSE-TYPE DEVICE
132 .With manned vehicle
133 PLURAL
134 .Projectors with single light source
135 .Projectors with alternately operable shutters
136 COVERTIBLE
137 .Still-motion camera
138 .Camera-projector
139 WITH CAMERA PARTS DISPLACEABLE FOR FOCUSING
140 WITH FOCUS CONTROL
141 WITH AUTOMATIC DIAPHRAGM CONTROL
142 WITH SELECTION OF PLURAL LENSES
143 WITH FILM STRIP FIRE PREVENTION OR ISOLATION
144 .Fire trap
145 ..With film severing
146 .Film cooling
147 ..Single frame projection
148 ..By filters
149 .Auxiliary fire shutter
150 ..Film tension responsive
151 ...Slack loop actuation
152 ..Feed speed responsive
153 ...Friction drive actuation
154 ...Centrifugal actuation
155 .Electrical circuit interrupted by film sensing means
156 WITH CONCENTRIC REEL
157 WITH THREADING STRUCTURE
158 .Self-feeding type
159 WITH LOOP FORMING
160 WITH FRAMING AND/OR TRAVEL GHOST ELIMINATION
161 .By alteration of film path length
162 .By relative positioning of gate and drive
163 .By rotation of film drive sprocket
164 ..With shutter synchronization
165 .Shutter adjustments
166 CAMERA AND/OR PROJECTOR DRIVE MECHANISMS
167 .With illumination control responsive to drive speed
168 .Having plural or interchangeable drives
169 .With single frame operation
170 .With indicating means
171 ..Visible in viewfinder
172 ..Film footage
173 .With reverse feed
174 .With starting and/or stopping means
175 ..Having timed run
176 ..Responsive to camera or projector elements
177 ...Shutter responsive
178 ..Having manual controls
179 ...Remotely operated
180 .With speed regulation or selection
181 ..By escapement
182 ..By braking
183 .With feeding belt film engagement
184 .With continuous feed and intermittent film arresting means
185 .With film beater
186 .With reciprocating continuously driven carrier engaging sprocket
187 .With intermittently driven carrier-engaging sprocket
188 ..Cam actuated
189 ..Geneva gear actuated
190 ..Special type gearing
191 .With film engaging claws reciprocally driven to engage film
192 ..Crank pin actuated
193 ...With pivoted link or arcuate slot guide
194 ..Cam actuated
195 ...Scroll type
196 ...With single fixed pivot
197 .With supporting structure
198 PROJECTION LIGHT SOURCES
199 .Synchronized with shutter
200 .Intermittent light
201 .Flicker reduction by auxiliary illumination
202 .With ventilation and cooling
203 .Projector illuminators
204 SHUTTERS
205 .With plural light paths
206 ..Reflex view type
207 .Rectilinearly movable
208 .Rotary
209 ..With speed-adjusted aperture size
210 ..With apertured or radially deviating blade
211 ..Ventilating
212 ..With light modifying blades
213 ...Color
214 ..With axially spaced independently driven blades
215 ...Counter rotatable
216 ...Variable aperture size
217 ....Dissolve
218 ..With plural blades on spaced axis
219 ..Single drive (e.g., disc type)
220 ...Variable number of blades
221 GATES
222 .Fluid pressure type
223 .With pressure rollers
224 .With edge guide
225 .With reciprocating pressure plate
226 .With removable aperture plate
227 .With pressure plate tension control
228 .With curved film plane
229 .With gate moving and/or holding structure
230 ..Closure-operated
231 .With lens mounting
232 PICTURE CARRIERS
233 .Strip type
234 ..Color
235 ..With leader
236 ..With film-carried indicia
237 ..Reinforced
238 ..Abrasion resistant
239 ..With particular format (e.g., stereoscopic)
240 ..With pictorial matter
241 ..Perforation arrangement
242 WITH HOUSING
243 WITH SUPPORT
244 MISCELLANEOUS

CLASS 353 OPTICS, IMAGE PROJECTORS

DECEMBER 1990

1	KALEIDOSCOPIC
2	.Including particles loosely housed for agitation
3	HELIOSTATS
4	ASCENDING HEATED AIR CHANGES PICTURES
5	MAPPING OR AERIAL PHOTOGRAPH RECTIFYING
6	.Stereoscopic
7	STEREOSCOPIC
8	.Polarizer
9	.Slide transfer mechanism
10	RELIEF ILLUSION
11	TARGET, MAP OR NAVIGATION PROJECTION
12	.With or for vehicle
13	WITH OR FOR VEHICLE
14	.Instrument indicator
15	WITH SOUND ACCOMPANIMENT
16	.Phonograph
17	..In carrying case
18	..Cabinet encloses projector and one side of screen
19	.Common picture and sound record carrier system
20	POLARIZER OR INTERFERENCE FILTER
21	EDITING OR AUXILIARY VIEWING
22	TRANSPARENT PLATE
23	.Plate part of film gate
24	..Including lens support
25	SELECTIVE DATA RETRIEVAL
26 R	.Film strip
26 A	...Automatic
27 R	.Plural picture rows on single microcard
27 A	...Automatic
28	PROJECTED IMAGE COMBINED WITH REAL OBJECT
29	ADDITIONAL ILLUMINATION OF OR NEAR PROJECTED IMAGE
30	COMPOSITE PROJECTED IMAGE
31	.Multicolor picture
32	..Lenticular film
33	..Prism
34	.Plural projection paths with single light source
35	.Slides and/or film superposed in projector
36	.Letters or numbers
37	.Reflector between lamp and screen
38	UNITARY PLURAL REFRACTING SURFACES
39	MICROPROJECTOR
40	SCALE OR SCALE INDICATOR PROJECTOR
41	.Vernier or plural scales
42	POINTER
43	GUN, FLASHLIGHT OR BATTERY OPERATED TYPE
44	SIMULTANEOUS PROJECTION AND MANUAL DELINEATION
45	.Score register
46	IMAGE MOVES ON SCREEN
47	.Cabinet enclosed projector and one side of screen
48	.Plural projectors or projection paths
49	..Single light source
50	.Reflector between lamp and screen
51	..Plural
52	TEMPERATURE CONTROL
53	.Means to preheat slides or film
54	.Liquid coolant
55	.Heat filter
56	.Heat resistant or insulating material
57	.Blower
58	..Plural
59	..Common motor for blower and slide changer
60	..Air directed against face or back of object
61	..Particular air ducts or deflector
62	STENCIL OR PERFORATED PLATE PROJECTOR (E.G., SKY OR CLOUD PROJECTOR)
63	EPIDIASCOPE (I.E., SELECTIVE OPAQUE AND TRANSPARENCY PROJECTOR)
64	.Plural reflectors between lamp and screen
65	EPISCOPE (I.E., OPAQUE PROJECTOR)
66	.Reflector between lamp and screen
67	..Cabinet encloses projector and one side of screen
68	SELECTIVE SLIDE AND FILM STRIP PROJECTOR
69	DISTORTION COMPENSATION
70	.For projection axis inclined to screen
71	SELECTIVE PROJECTION ON DISTANT OR CABINET SCREEN
72	PROJECTOR OR SCREEN REMOVABLE FROM COMMON HOUSING
73	.Plural reflectors between lamp and screen
74	CABINET ENCLOSES PROJECTOR AND ONE SIDE OF SCREEN
75	.Light shield, mask, hood, or diaphragm
76	.Focus or variable magnification
77	.Reflector between lamp and screen
78	..Plural
79	STRUCTURALLY RELATED PROJECTOR AND SCREEN
80	.Profile or silhouette
81	PRISM IN LIGHT PATH
82	PLURAL PROJECTION PATHS WITH SINGLE LIGHT SOURCE
83	.Dissolve type
84	COLOR FILTER
85	LAMP CONTROL
86	.Dissolve type
87	.Lamp position adjustable
88	SHUTTER
89	.Plural projection paths
90	..Dissolve type
91	.Solenoid operated
92	.Slides reciprocated horizontally from magazine
93	.Dissolve type
94	PLURAL
95	FILM GATE
96	.And lens support
97	LIGHT SHIELD, MASK, HOOD, OR DIAPHRAGM
98	REFLECTOR
99	.Plural
100	LENS SUPPORT
101	.Lens position adjustable
102	PARTICULAR CONDENSER
103	SLIDE TRANSFER MECHANISM
104	.For slides of various dimensions
105	.Magnetically operated
106	..Solenoid
107	...Rotary slide carrier
108	.Slides fixed to movable carrier
109	..Endless chain or belt
110	..Disc
111	.Gravity operated
112	..Feeder magazine and receptacle
113	.Feeder magazine and receiver magazine
114	.Slides reciprocated horizontally
115	..Slides elevated
116	..From magazine
117	...Rotary magazine
118	.Slides gripped or hooked
119	HOUSING
120	PICTURE CARRIER
121	METHODS
122	MISCELLANEOUS
	******************************
	DIGESTS
	******************************
DIG 1	Slides stacked with surface to surface contact
DIG 2	Film strip
DIG 3	Transparent
DIG 4	Opaque
DIG 5	Transparency holder accessories
DIG 6	Head accessories

CLASS 354 PHOTOGRAPHY

DECEMBER 1990

1 EXPOSING MULTICOLOR CATHODE RAY TUBE TARGETS
2 DAGUERREOTYPE
3 ELECTRIC PHOTOGRAPHY
4 LINE GENERATION
5 PHOTOTYPE COMPOSING
6 .Photoelectronic type
7 .With programmed control
8 .With line inter-space adding
9 ..Tabulating or adjusting line length
10 .Optical line correction
11 .With means to detect indicia
12 .With character means
13 ..Plural character types
14 ..With a moveable carrier
15 ...Rotary
16 ....Key operative
17 ..Fixed carrier
18 .Support structure
19 ..Character holder
20 SENSITOMETRY (E.G., OPTICAL WEDGE MAKING, ETC.)
21 FILM CARRIER CONTROLS CAMERA OPERATION
400 AUTOMATIC CAMERA FOCUSING
401 .Using sound
402 .Having photoelectric focusing system or device
403 ..Using active ranging
404 ..With moving optical means in front of photocell
405 ...With moving mirror
406 ..With stationary beam splitter
407 ...Having split image means
408 ..With two separate stationary predetector optical systems
409 ..With focus indicator
410 AUTOMATIC EXPOSURE CONTROL SYSTEM OR DEVICE
411 .Nonphotoelectric exposure control type
412 .For controlling entire photographic operation
413 .Including artificial illumination system or device
414 ..For fill-in illumination
415 ..With Pre-exposure flashing
416 ..With flash termination control
417 ...Quench type
418 ..Charge level or power supply responsive
419 ..Automatically activated under low light condition
420 ..Controlling exposure without controlling flash
421 ...With follow focus control of exposure
422 ...With single circuit controlling the shutter and diaphragm
423 ...With means for controlling only the diaphram
424 ..With photocell used as flashed trigger
425 .Having log transformation circuit
426 ..Digital
427 ..With log expansion
428 ..With temperature compensation circuit
429 .Having plural photocells
430 ..Measuring special property of light or subject (e.g. color, speed, etc.)
431 ..With light reflected from film or shutter
432 ..With more than two cells
433 ..With only two cells measuring light directly from subject
434 ..With only two cells used to control exposure time
435 .Having circuit for controlling a diaphragm shutter
436 ..Walking beam type
437 ...Using digital control
438 ..Clamp or stop needle type
439 ..Stepping motor type
440 ..Solenoid control type
441 .Having circuit for controlling separate diaphragm and shutter
442 ..With selectable priority
443 ..With programmed control only
444 ..With exposure time priority only
445 ..With aperture priority only
446 .Having circuit for controlling diaphragm only
447 ..Clamp or stop needle type
448 ..Ratchet/pawl type
449 ..Direct drive galvanometer type
450 ...With bridge circuit
451 ..Servo motor type
452 ...Using stepping motor
453 ..Including special driving arrangement
454 ..Including irregular diaphragm opening
455 ..With interchangeable lens
456 .Having circuit for controlling shutter only
457 ..With piezoelectric driven shutter
458 ..With digital counter
459 ..With at least one RC circuit for timing
460 ...Including memory capacitor
461 ...Including plural selectable caopacitors
462 ..Clamp or stop needle type
463 ..Using oscillating voltage for drive purposes
464 ..With current, voltage, or temperature compensation
465 .Including indicator means
466 ..Having holographic display
467 ..Using sound
468 ..Displaying battery condition
469 ..Galvanometer type
470 ...With plural pointers or match needle
471 ..Having nonmechanical visual display
472 ...Bar graph type
473 ...High/Low/Ok type
474 ...Using more than three display means
475 ....Character segment type
476 .With photocell at specific position within camera
477 ..Movable into and out of light path
478 ..In or on pentaprism assembly
479 ..With light reflected by suplemental mirror
480 ..With light reflected from film or shutter
481 ..Having means for changing or limiting the photocell's field of view
482 ..With color filter
483 ..With variable light transmission means
484 .With power supply details
485 .With printed circuit details
486 .With mechanical switch details
62 EYE, MOUTH, OR BODY PHOTOGRAPHY
63 HOLLOW CAVITY TYPE
64 UNDERWATER TYPE
65 AERIAL CAMERA
66 .With shutter or film feed speed and air or spin speed synchronizing
67 .Remote exposure control
68 .Simultaneous recording of plural images
69 ..Plural images recorded on plural film
70 .With camera direction stabilizing (e.g., gyroscope, etc.)
71 .Including continuously moving film
72 .With indicator, signal or scale
73 .Including synchronization
74 .Support or holder
75 COMBINED OR CONVERTIBLE
76 .Combined with diverse art device
77 ..With projector
78 ...And developing means

COMBINED OR CONVERTIBLE
.Combined with diverse art device
79 ..With compound lens systems (e.g., microscope, etc.)
80 ..With object support
81 ..With support means
82 ...Operator supported
83 DEVELOPING CAMERAS
84 .Including means to treat superimposed material
85 ..Including pressure means
86 ...Roller
87 ....Roll material only
88 .Including fluid appliator
89 .Including film processing tank
90 ..And means to move film
91 ...With tank filling means
92 ...Roll type only
93 ...Plural tanks
94 PANORAMIC CAMERA
95 .Including reflector
96 .Concave film surface
98 .Convex film surface
99 .Synchronization of film and camera movement
100 COLOR
101 .Lenticular
102 ..Plural color filter sections
103 .Simultaneous recording of images
104 ..Images recorded on separate films
105 EXPOSURE IDENTIFICATION
106 .Autographic camera
107 ..Stencil or indicia transfer strip
108 ...Removable
109 .With auxiliary identification photographing system
110 PLURAL IMAGE RECORDING
111 .Convertible
112 .Stereoscopic
113 ..Plural camera arrangement
114 ..Single camera with plural spaced objectives
115 ...With lenticular screen, mirror or prism
116 ...Film feed or guide
117 ..Plural image reflection onto single objective
118 .Multiplying
119 ..Different planes
120 .Formed on single plate (e.g., multiplex, etc.)
121 ..Including rotary objective or plate support
122 ..Including pre-objective element
123 ..Including shiftable objective or plate support
124 ...Shiftable plate only
125 ..Including shiftable post-objective mask
126 OBJECT ILLUMINATION COMBINED WITH CAMERA STRUCTURE
127.1 .With measuring, testing or indicating
127.11 ..Having flash ready indicator
127.12 ...Indicating power source status
127.13 ..Having distance indicator
129 .With camera synchronization
130 ..Shutter controlled by explosive force of flash device
131 ..Remote control (e.g., radio wave, etc.)
132 ..Multiple illumination units
133 ..With shutter relay or solenoid
134 ..With pneumatic shutter release
135 ..Energizing generator contained in flash unit
136 ..Reflex focusing mirror closes contacts
137 ..With time delay adjustment means
138 ...Positional
140 ..With detachable synchronizer
141 ..Convertible illumination means
142 ..Percussive illumination source
143 ..Flash unit includes spare lamps
144 ...With unison film advance and lamp switching
145.1 ..Electronic flash unit
146 ..Curtain shutter
147 ..Flash unit contacts actuated by shutter movement
148 .Lamp substitution
149.1 .With variable illumination angle
149.11 .With flash built into camera
150 INCLUDING MEANS TO REFLECT IMAGE TO FILM
151 TWIN LENS REFLEX CAMERA
152 REFLEX CAMERA WITH SINGLE OBJECTIVE
153 .Film advance means sets mirror
154 .With means to block light from film (e.g., screen, etc.)
155 .Plural optical means in view finder
156 .With manipulating means (e.g., lever, etc.)
157 .Plate camera
158 .Folding, collapsible or bellows camera
159 PICTURE SIZE VARIABLE
160 CAMERA BACK OR FILM CARRIER ANGULARLY ADJUSTABLE
161 CAMERA FILM AND FOCUSING SCREEN EXCHANGEABLE
162 WITH RANGE FINDER
163 .Range finder coupled with focusing
164 ..With parallax correction
165 ..Focusing lights
166 ..With view finder
167 ..With adjustable coupling to compensate for change of camera lens
168 ..Cam means to actuate range finder
169 ..Lever means to actuate range finder
170 MOTOR FILM DRIVE (e.g., spring, etc.)
171 .Automatic film advance
172 ..With spring tension indicator
173.1 ..With electric motor
173.11 ...Having electronic timing
174 MAGAZINE CAMERA
175 .Rotatable magazine
176 .Hand changed plate
177 .Tilting magazine
178 .Flexible carrier for plates
179 ..With tab means
180 .Sliding plate
181 ..Sliding and return
182 ..Intermediate exposure chamber
183 .Quarter-turned plate
184 ..Tilting
185 ...Base guides
186 .Rear plate replaceable
187 FOLDING, COLLAPSIBLE, OR BELLOWS CAMERA
188 .With focusing screen
189 .Camera front or lens mount angularly adjustable
190 .With lens movable in its plane
191 .With guide and lock
192 .With hinged base attached to bellows
193 ..With self-erecting lens holder
194 .Hinged bellows type
195.1 MANUAL CAMERA FOCUSING
195.11 .Diaphragm controlled by focusing
195.12 .Plural lenses
195.13 .With distance indicator
199 .With view finder
200 ..Including focusing screen
201 ...And reflector
202 CAMERA DETAILS
203 .Film restraining means
204 .Interlocking film advance and shutter tension or setting
205 ..Focal plane shutter
206 ..Including film movement limiting means

CAMERA DETAILS
207 .Double exposure prevention
208 ..Foldable, collapsible, or extensible camera structure
209 ..With manual over-ride (i.e., permits double exposure)
210 .Plural film type
211 .Film cut-off
212 .Film advancing means
213 ..With film movement limiting means (i.e., movement stops after one frame)
214 ..Including rewind means
215 ..Including film position indicating means
216 ..Posterior rolls
217 .Film frame counting or measuring
218 ..Measuring
219 .View finder
220 ..Pose reflector
221 ..Parallax correction
222 ..Selective or adjustable view-finder field
223 ..Selective or adjustable viewing position
224 ..With reflector
225 ...Plural
226 .Shutter
227.1 ..Electro-optical type
228 ..With diaphragm
229 ...Plural apertured diaphragm
230 ...Shutter and diaphragm formed by the same pivoted or sliding plates
231 ...Including coupled shutter and diaphragm
232 ...Diaphragm opens for focusing or viewing
233 ..With shutter between lens
234.1 ..Dynamo-electric actuated
235.1 ...Single linear solenoid
236 ..Plural shutters
237 ..With delayed release means
238.1 ...Including electric circuit means
239 ...With clock-train
240 ....Detachable from camera
241 ..Curtain or flexible plate type
242 ...Plural curtains or plates
243 ....Curtains width opening
244 .....More than two rollers
245 ..Sliding rigid plate
246 ...Plural plates
247 ....Moves in opposite directions
248 ...Rectilinear reciprocation
249 ....Vertical motion
250 ..Pivoting or rotating blade
251 ...With cocking means
252 ...With brake means
253 ...Including aperture cover or lid
254 ...Shutter blade moves continuously from closed to open to closed position
255 ....Blade moves in opposite direction on alternate exposures
256 ...With retard means
257 ....Including pneumatic means
258.1 ....Including electric circuit means
259 ....Including gear means
260 ....Including cam means
261 ...Plural oscillating blades
262 ....With gear means
263 ....With pneumatic actuator
264 ....Symmetrical opening
265 ....Opposite movement
266 ..Release or actuator means
267.1 ...Timing means
268 ...With safety lock
269 ...Cable release
270 .Diaphragms
271.1 ..Electrically operated
272 ..Diaphragm opens for focusing or viewing
273 ..With indicator
274 ..Plural pivoted blades
275 .Detachable or removeable film holder unit
276 ..Plate or cut film holders
277 ...Light seals
278 ...Plate fastenings and kits
279 ....Adjustable
280 ...Solution drains and resistants
281 ...Closure locks and checks
282 ...Auxiliary
283 ...With dark slide
284 ....With hinged parts
285 ....Double holder
286 .Lens mount
287 .Hoods
288 .Body structure or housing
289.1 .Indicator or setting means
289.11 ..Indicia on lens ring or housing
289.12 ...With electric circuit means
290 STUDIO STRUCTURE
291 BACKGROUNDS
292 PHOTOGRAPHIC MODEL OR SUPPORT
293 CAMERA MOUNTING OR REST
294 .Stereo
295 CAMERA OPERATING ATTACHMENT
296 .Vignetter
297 FLUID-TREATING APPARATUS
298 .Photocell controlled
299 .And temperature control
300 .Gaseous-treating
301 .Treating superimposed or laminar sheets
302 ..Rollers sequentially submerge and press sheet
303 ..With fluid dispensing
304 ...Collapsible container
305 ..With fluid reservoir
306 .Reversal processing
307 .Dark cabinet
308 ..Hand or body insertion
309 ...With ventilation
310 ..Daylight loading
311 ..With film-holding cabinet insertable into developing tank
312 ..With film support or handling means
313 ...Roll film handling
314 ....With motor driven film winding spool
315 ...Plate film handling means
316 ...Film immersed and removed
317 .Fluid application to one side only of film
318 ..By roller or web
319 .With film or paper feed
320 ..And film immersed and removed
321 ...Strip type
322 ...Plural stations
323 .Single station and plural fluids
324 .With fluid circulating means
325 ..And fluid spraying means
326 ..And plate support means
327 ..By rocking tray or support
328 .With fluid agitating means
329 ..Rotating carriers
330 ...Motor driven
331 .Film or print processing vessel
332 ..With interlocking doors
333 ..Attachment or accessory
334 ...Visual film scanner
335 ...Adjustable film holding means
336 ...Reservoir
337 ..With film or plate support
338 ..With film guiding ribs
339 .Film guide
340 .Film holding device
341 ..Spool
342 ..Tensioning means

	FLUID-TREATING APPARATUS
	.Film holding device
343	..Adjustable means
344	..Retaining means
345	..Gripping means
346	...Opposed frame gripping means
347	...Plate
348	RETOUCHING
349	.Stands
350	..Vibrating
351	BURNISHING
352	.Rotary machine
353	..Interally heated
354	MISCELLANEOUS

CLASS 355 PHOTOCOPYING

1	INCLUDING FIBER OPTICS
2	HOLOGRAM, SEISMOGRAM, GRAPH OR SCALE COPYING
200	ELECTROPHOTOGRAPHY
201	.Unauthorized copy prevention
202	.Combined with diverse subject matter
203	.Diagnostic testing
204	..Computer controlled
205	...Of malfunction
206	....Display, warning or shutdown
207	....Correction of malfunction
208	...With alteration (e.g., optimization)
209	...With indicator
210	.Latent image formation
211	..Particular photoresponsive member
212	...Web or belt
213	....Drum supported and fed
214	..With control of image contrast
215	..With airborne contaminant control
216	..With charge sensing to terminate charging
217	..With transfer of electrostatic image (TESI)
218	..With edge or margin feature including erasure or image shifting
219	..Charging or discharging
220	...With simultaneous light imaging or illumination
221	...Corona
222	....Alternating current
223	....Negative polarity
224	....With fringe or needle-like electrodes
225	....With control grid (e.g., scorotron)
226	....Bipolar
227	...Nonuniform
228	..Illumination
229	...Light source
230	...Object (e.g., document) holder
231	....Platen cover
232	...Projection
233	....Scanning
234	.....With movable platen (including platen drive and positioning means)
235	.....With drive and positioning means for movable scanning carriage of optical projection means
236	.....With vibration damping means
237	.....Lens strip
238	.....Fiber optics
239	.....Line or half-tone image
240	.....Fresnel lens
241	....Full frame exposure
242	....Reflex exposure
243	....With variable magnification
244	....Composite imaging
245	.Latent image development
246	..With developed image contrast/density control (e.g., by toner concentration control, developing electrode bias, etc.)
247	..Powder cloud
248	...Flat plate
249	...Cloud charging
250	..Fibrous brush
251	..Magnetic brush
252	...Magnetic belt
253	...Loading of brush
254	..Cascade
255	..Fluidized bed
256	..Liquid
257	...Electrophoretic
258	...Polar ink
259	..Donor (e.g., using a roller as a donor)
260	..Container
261	..Electrode (e.g., bias electrode)
262	...Segmented or perforated
263	...Flexible
264	...Self-cleaning
265	...Variable applied electric potential
266	..Enhancement of portions of the image
267	..Simultaneous positive and negative visible image formation
268	..Reversal of light and dark portions of the visible image
269	..Simultaneous development and cleaning
270	..Single device for developing and cleaning
271	.Developed image transfer or display
272	..Multiple transfer
273	..Treatment to enhance transfer
274	..Electrostatic transfer of toner
275	...With conductive transfer web
276	..A.C. field transfer
277	..Pressure transfer
278	...With lamination
279	...With heat
280	...With adhesive
281	....Including a transfer web
282	.Image fixing
283	..With cleaning of image fixing means
284	..Offset prevention
285	..Heat fixation
286	...Radiation
287	....Microwave
288	....Flash heating
289	...Conduction
290	....With pressure means
291	...Convection
292	..With vapor fixative
293	..With liquid fixative
294	..With solid fixative
295	..With pressure
296	.Cleaning of photoresponsive imaging surface
297	..With plural diverse cleaning means
298	..With handling of cleaned material
299	..Blade
300	..Web
301	..Brush
302	...With brush scraper
303	...With electrostatic assist
304	...Involving a filter bag
305	...Magnetic
306	..Cleaning beads
307	..Liquid
308	.Document handling (including counting)
309	..Of feed stock
310	...With means for cutting feed stock
311	...With different physical characteristics (e.g., size, shape, stiffness, transparency, color, etc.)
312	...With pneumatic means
313	...With mode change
314	....Dominant mode with interrupt
315	...With copy substrate stripping means
316	..Including sheet tracking
317	..Including sheet registration
318	..Including sheet inverting
319	...Duplex copy
320	....Duplex original
321	..Including delivery or collection
322	...Stacking or imbricating
323	...Sorting or collating
324	...Fastening or binding
325	...Interleaving
326	.Colored copy production
327	..Full color
328	..With highlighting means
18	PROJECTION PRINTING AND COPYING CAMERAS
19	.Combined with or convertible to a contact printer
20	.With cathode ray tube for light source

PROJECTION PRINTING AND COPYING CAMERAS
21 .Collapsible or portable
22 .Stereoscopic
23 .Copying both sides of original
24 ..Duplex
25 ..Book page copying
26 .Photographing on both sides of photo-sensitive paper
27 .With developing
28 ..And film severing
29 .With film severing
30 .With temperature or foreign particle control
31 .Copying sound record
32 .Multicolor picture
33 ..Lenticular film
34 ...Including detailed diaphragm
35 ..Regulating light intensity or exposure time
36 ...Including electromagnet
37 ...Plural lamps
38 ...Including
39 .Tilting
40 .Identifying, composing, or selecting
41 ..Including photocell
42 ..Including electromagnet
43 ..Including reflector between original and photosensitive paper
44 .With focusing or projection screen
45 ..Reflector in optical path
46 .Plural
47 .Image transferred to or from curved surface
48 ..Original moves continuously
49 ...Reflector between original and photo-sensitive paper
50 .Original moves continuously
51 ..Reflector between original and photo-sensitive paper
52 .Distortion introducing or rectifying
53 .Step and repeat
54 .Producing plural rows of pictures on photosensitive paper
55 .Focus or magnification control
56 ..Automatic or semiautomatic focusing when varying image size
57 ...Reflector between original and photo-sensitive paper
58 ...Including a cam or a screw with nonuniform pitch
59 ....And an indicator or scale
60 ..Reflector between original and photo-sensitive paper
61 ..Including indicator or scale
62 ...Vertical optical path
63 ..Vertical optical path
64 .Image transferred from individual documents to film strip
65 ..Reflector between original and photo-sensitive paper
66 .Reflector between original and photo-sensitive paper
67 .Illumination systems or details
68 ..Including photocell or phototube
69 ..Electricity to lamp controlled
70 ..Plural lamps
71 ..Including shutter, diaphragm, polarizer or filter
72 .Detailed holder for photosensitive paper
73 ..Including vacuum or fluid pressure
74 ..Including adjustable or selective masking frame
75 .Detailed holder for original
76 ..Including vacuum, fluid or spring pressure
77 .Methods
78 CONTACT PRINTING
79 .SUPERIMPOSED CARRIERS (e.g., montage or combination printing)
80 .Localized contrast modification (e.g., dodging or fading)
81 ..With scanning
82 .Book page copying
83 .Light monitoring exposure control
84 .With scanning
85 .Exposing on sensitized printing press plate or cylinder (e.g., photocomposers)
86 ..Step and repeat
87 ...Fluid pressure
88 .Multicolor printing
89 .Plural exposure stations or plural machines
90 ..With plural webs of indeterminate length (e.g., motion picture film)
91 .Fluid pressure retention of carrier and receiver in exposure position
92 ..Air-inflated cushion
93 ..Pivoted frame
94 ..With pump
95 .Step and repeat
96 ..Strip receiver
97 .Machine (i.e., having at least partly automatic feed)
98 ..Sound track printing
99 ..With flat exposure station structure
100 ...With further developing processing
101 ...With shutters
102 ...Repeated printing from a carrier
103 ...Continuous running
104 ..With cylindrical or curved exposure station structure
105 ...Light lowered into vertical cylinder
106 ...With further developing processing
107 ....With intermediate printing material
108 ...Continuous running
109 ....Repeated printing from a carrier
110 ....Rotating exposure station cylinder
111 ....Indeterminate-length carrier and receiver
112 .Print counting and marking
113 .Light boxes
114 ..Transfer of plural images
115 ..With exposure timing
116 ..Foot-operated platen or shutter
117 ..Cylindrical or curved exposure station
118 ..Divided or flexible platen
119 ..Indirect illumination
120 ..Platen-controlled illumination circuit
121 ..With shutter
122 .Frames
123 ..Strip film
124 ..With shutters
125 ..With diffusing or masking (e.g., vignetting)
126 ...Adjustable parameters
127 ..Transfer of plural images
128 ..With platen
129 ...Divided platen
130 ....With closing spring bias
131 ...Attached platen
132 .Methods
133 MISCELLANEOUS

1	TRIANGULATION BY LIGHT BEAM
2	CONTOUR PLOTTING
3	RANGE OR REMOTE DISTANCE (E.G., HEIGHT) FINDING
4	.With light detector (e.g., photocell)
4.5	..Of light interference (e.g., interferometer)
5	..Time delay or phase change of reflected beam
6	.Instrument condition testing or indicating
7	.Periscope or offset type
8	.With view finder
9	.Base line instrument (i.e., base is a part of instrument)
10	..With filter or light valve
11	..Range finder combined with height finder
12	..Stereoscopic
13	...Ortho-pseudo type
14	...Stationary measuring marks
15	..Length of base line variable
16	..Image displaced by moving refracting element
17	..Image displaced by rotating reflecting element
18	..With mounting, support, adjusting, or folding structure
19	..Prism structure for determining coincidence
20	.External basis type
21	..Object size or distance known
22	...With displaced images
23	MOTION STOPPING (E.G., STROBOSCOPES)
24	.Periodically moving reflecting or refracting element
25	.Periodically moving light interrupting element
26	..Vibrating or oscillating element
27	VELOCITY OR VELOCITY/HEIGHT MEASURING
28	.With light detector (e.g., photocell)
28.5	..Of light interference (e.g., interferometer)
29	OPTICAL ELEMENT OR RETICLE RESPONDS TO RELATIVE VELOCITY OF REMOTE OBJECT
30	CRYSTAL OR GEM EXAMINATION
31	.Axes determination
32	MATERIAL STRAIN ANALYSIS
33	.With polarized light
34	..Attached detector
35	..Sheet material
35.5	.By light interference detector (e.g., interferometer)
36	WITH SAMPLE PREPARATION
37	.Condensation nuclei detector
38	.Depositing particles on optical surface
39	BLOOD ANALYSIS
40	.Hemoglobin concentration
41	..Oximeters
42	..Standards
43	OPTICAL PYROMETERS
44	.With sample engaging rod or tube
45	.Plural color responsive
46	.With incandescent standard
47	..Automatic intensity control
48	..Modulating (e.g., flicker beam)
49	..Telescopic
50	...Current control
51	INFRARED AND ULTRAVIOLET
52	EGG CANDLING
53	.Photoelectric
54	.With counting, marking, or weighing
55	.With egg transfer
56	..With egg turning or jarring
57	...Endless conveyor
58	..Endless conveyor
59	..Manual transfer
60	...With light shading chamber
61	...Portable receptacles
62	.With light shading chamber
63	..Hood type
64	.With light box
65	..With egg turning or jarring
66	..With particular illumination means
67	...With particular electrical switching
68	.Lamp attachments
69	CUTTING BLADE SHARPNESS
70	OIL TESTING (E.G., CONTAMINATION)
71	DOCUMENT PATTERN ANALYSIS OR VERIFICATION
72	WITH PLURAL DIVERSE TEST OR ART
73	PLURAL TEST
73.1	FOR OPTICAL FIBER OR WAVEGUIDE INSPECTION
300	BY DISPERSED LIGHT SPECTROSCOPY
301	.With Raman type light scattering
302	.For spectrographic (i.e., photographic) investigation
303	..With spectral analysis
304	..With sectored disc
305	..With diffraction grating
306	.With internal standard comparison
307	.With background radiation comparison
308	.With synchronized spectrum repetitive scanning (e.g., cathode-ray readout)
309	..Using plural beams
310	.With aperture mask
311	.With sample excitation (e.g., burning)
312	..By electrical resistance heating (e.g., graphite tube)
313	..By arc or spark
314	...Including sputtering
315	..By flame
316	..By high frequency field (e.g., plasma discharge)
317	..By light
318	...Monochromatic (e.g., laser)
319	.Utilizing a spectrophotometer (i.e., plural beam)
320	..Having plural wavelengths
321	..Having servo equalization
322	...With polarized light beams
323	..Having beam modulation
324	...With plural dispersion
325	...Prior to testing
326	.Utilizing a spectrometer
327	..Having light polarizing means
328	..Having diffraction grating means
329	...Including servo slit adjustment means
330	..Having optical gating means
331	.With monochromator structure
332	..Having adjustable color or bandwidth
333	...In a double monochromator
334	...With diffraction grating means
335	FOR SIZE OF PARTICLES
336	.By particle light scattering
337	BY PARTICLE LIGHT SCATTERING
338	.With photocell detection
339	..At right angles to the light beam (e.g., nephelometer)
340	..At variable angle to the light beam
341	..For light comparison means
342	..Of back-scattered light
343	..Using plural photocells
344	BY ELECTROPHORESIS
345	BY LIGHT INTERFERENCE (E.G., INTERFEROMETERS)
346	.Spectroscopy
347	.Holography
348	..For optical configuration
349	.With light beams of different frequency (e.g., heterodyning)
350	..For rotation rate (e.g., ring laser)
351	.With polarization
352	.With partially reflecting plates in series (e.g., Fabry-Perot type)

BY LIGHT INTERFERENCE (E.G., INTERFEROMETERS)
353 .With shearing
354 .With wavefront division (e.g., by diffraction)
355 ..For dimensional measurement (e.g., thickness)
356 ...Of displacement or distance
357 .For dimensional measurement (e.g., thickness)
358 ..Of displacement or distance
359 .For optical configuration
360 ..With two light beams (e.g., Twyman-Green)
361 .For refractive indexing
362 ..With Schlieren effect
363 .For orientation and alignment
364 BY POLARIZED LIGHT EXAMINATION
365 .With birefringent element
366 .With polariscopes
367 ..Including polarimeters
368 ...With electro-optical light rotation
369 .Of surface reflection
370 .With light attenuation
371 FOR FLATNESS
121 LAMP BEAM DIRECTION OR PATTERN
122 .With lamp focusing
123 FOCAL POSITION OF LIGHT SOURCE
124 LENS OR REFLECTIVE IMAGE FORMER TESTING
124.5 .For optical transfer function
125 .Focal length measuring
126 ..Deflecting or interrupting optical path
127 .Optical center, cylinder axis, or prism measuring or determining
128 REFRACTION TESTING (E.G., REFRACTOMETERS)
129 .Schlieren effect
130 .Differential
131 ..With servo controlled optical member
132 ...Reflective optical member
133 .Refractive rod engages specimen
134 .Prism forming fluid specimen container
135 .Prism engaging specimen
136 ..Internally reflecting prism
137 ..Plural prisms
138 ANGLE MEASURING OR AXIAL ALIGNMENT
139 .Plural scales or different portions of same scale simultaneously observable
140 .Apex of angle at observing or detecting station
141 ..With light detector (e.g., photocell)
142 ..Scale and remote point simultaneously observable
143 ...Artificial reference
144 ..With plural images
145 ...Lines of sight relatively adjustable with two degrees of freedom
146 ...Two or more lines of sight deflected
147 ..Measurement in two planes (e.g., azimuth and elevation; hour angle and declination)
148 ..Artificial reference
149 ...Gyroscope or pendulum stabilized optical element
150 .Sides of angle or axes being aligned transverse to optical axis (e.g., drift meter)
151 ..With light pulsing or interrupting means
152 .With light detector (e.g., photocell)
153 .Alignment of axes nominally coaxial
154 .With screen
155 ..Wheel alignment
372 BY MENSURATION
373 .Of article displacement
374 ..Including moire' fringe generation
375 .Of position
376 .Of contour or profile
377 ..With curve readers
378 .Of cavities
379 .Of area or volume
380 ..By scanning
381 .Of thickness
382 ..Of light permeable material
383 .Of length
384 .Of width or diameter
385 ..Of moving object
386 ...By scanning or light interruption
387 ..By scanning or light interruption
388 BY CONFIGURATION COMPARISON
389 .With photosensitive film or plate
390 .With two images of single article compared
391 .With projection on viewing screen
392 ..For comparison with master or desired configuration
393 ...Having master or desired configuration projection
394 .With comparison to master, desired shape or reference voltage
395 .With relatively movable optical grids
396 .With scale or optical grid displaced relative to remote fiducial mark
397 .With object being compared and scale superimposed
398 .With object being compared and light beam moved relative to each other (e.g., scanning)
399 BY ALIGNMENT IN LATERAL DIRECTION
400 .With light detector (e.g., photocell)
401 .With registration indicia (e.g., scale)
402 BY SHADE OR COLOR
403 .With merging colors or patterns (e.g., Maxwell disc)
404 .Photography
405 .Tristimulus examination
406 .Trichromatic examination
407 .With sample responsive to plural colors applied simultaneously
408 .With sequential comparison of sample and standard
409 .Fluid color transmission examination
410 ..Of flowing liquids
411 ...With plural light detectors (e.g., photocells)
412 ..With ionic determination
413 ..With variable light path length
414 ..With color transmitting filter
415 ...Including liquid filter comparison
416 .With color transmitting filter
417 ..Included with sample excitation
418 ..Including rotating sequential filters
419 ..Including multicolor filters
420 ..Included with colored light sources
421 .With reflective multicolor chart or standard
422 ..Plate
423 ...Disk
424 ..Drum or endless tape
425 .With color determination by light intensity comparison
426 BY INSPECTION WITH AGITATION OR ROTATION
427 .Of container contents
428 .Of containers
429 BY MONITORING OF WEBS OR THREAD
430 .For flaws or imperfections
431 ..Including transverse scanning
432 FOR LIGHT TRANSMISSION OR ABSORPTION
433 .By comparison
434 ..Photoelectric (e.g., sequential viewing)
435 ...With plural detectors (e.g., simultaneous viewing)
436 .Of fluent material
437 ..Gas

FOR LIGHT TRANSMISSION OR ABSORPTION
.Of fluent material
..Gas
438 ...Exhaust, dust or smoke
439 ....Contained
440 ..With significant sample holder or supply
441 ..Having particles suspended in liquid
442 ...With light detector
443 .Of photographic film
444 ..With scanning, sweeping, or moving detector over film
445 OF LIGHT REFLECTION (E.G., GLASS)
446 .With diffusion
447 .With modulation (e.g., flicker beam)
448 .By comparison
213 PHOTOMETERS
214 .Pupillary
215 .Integrating
216 .Heat absorbing (e.g., radiometers)
217 .Modulating (e.g., flicker beam)
218 .Photoelectric
219 ..Simultaneous sighting and reading measurement
220 ..Multiple housings
221 ..Responsive to incident or back lighting
222 ..Plural detectors
223 ..Logarithmic
224 ..Multisensitivity range
225 ..With predetector light modifier (e.g., diaphragm)
226 ..Detector and indicator electrical coupling (e.g., amplifying or attenuating)
227 ..With particular indicator
228 ...Movable scale (e.g., calibrating)
229 .Comparison
230 ..With light standard
231 ...Variable incandescent standard
232 ...Standard movable
233 .With variable light aperture size
234 .Light absorbing
235 ..Absorber continuously variable (e.g., wedge)
236 .Integrating spheres
237 INSPECTION FOR FLAWS OR IMPERFECTIONS
238 .Cloth or thread inspection
239 .Passing light through a transparent or translucent article
240 ..Containers (e.g., bottles) or contents
241 .Bore inspection (e.g., borescopes)
242 THREAD COUNTING
243 STANDARDS
244 SAMPLE, SPECIMEN, OR STANDARD HOLDER OR SUPPORT (E.G., PLATES OR SLIDES)
245 .Cotton graders
246 .Fluid containers (e.g., cells or cuvettes)
247 FIDUCIAL INSTRUMENTS
248 .Artificial reference
249 ..Liquid surface (e.g., bubble level)
250 ..Pendular suspension of optical element or reticle
251 .Reticle lies outside viewing path
252 ..Reticle image transversely adjustable relative to optical axis
253 .Deflection of line of sight
254 ..Two or more deflections
255 ..By reflection
256 MISCELLANEOUS

CLASS 357 ACTIVE SOLID STATE DEVICES, E.G., TRANSISTORS, SOLID STATE DIODES

DECEMBER 1990

1	SIGNIFICANT BULK EFFECT
2	.Amorphous material
3	.Multivalley material (e.g., Gunn effect)
4	SIGNIFICANT THIN FILM
5	.Josephson junction
6	.Active insulator
7	SIGNIFICANT SEMICONDUCTOR POTENTIAL BARRIER
8	.Organic semiconductor
9	.Point contact barrier
10	.Semiconducting metal oxide material (e.g., zinc oxide)
11	.Selenium or tellurium semiconductor
12	.P/N tunnel junction (Esaki type)
13	.P/N breakdown junction (e.g., Zener, avalanche, punch through)
14	.P/N capacitive junction (e.g., varactor)
15	.Metal semiconductor junction (e.g., Schottky barrier)
16	.Heterojunction
17	.Light emitting junction (infrared to u.v.)
19	..Combined with light responsive device
20	.P/N junction of particular geometry
21	.Unijunction transistor (double base diode)
22	.Junction field effect (unipolar transistor)
23.1	.Insulated gate device
23.2	..Significant semiconductor chemical compound in bulk crystal (e.g., GaAs)
23.3	..Short channel device
23.4	...Vertical channel or double diffused transistor
23.5	..Variable threshold (e.g., MNOS, floating gate memory)
23.6	..Insulated gate capacitor or insulated gate transistor combined with capacitor (e.g., dynamic memory cell)
23.7	..Thin-film semiconductor (e.g., silicon on saphire)
23.8	..With means to increase breakdown voltage
23.9	..With self-aligned semiconductor PN juntion (e.g., silicon gate)
23.11	..With field oxide or channel stopper structure
23.12	..With permanent threshold adjustment (e.g., enhancement and depletion mode)
23.13	..With gate insulator breakdown protection means (e.g., gate protection diode)
23.14	..With multiple control electrodes, at least one of which is an insulated gate, or with distributed control electrode
23.15	..With uncommon gate insulator material
24	..Charge transfer device
25	.Responsive to nonelectrical external signals
26	..Pressure
27	..Magnetic field
28	..Heat
29	..Radiation
30	...Light (infrared to u.v.)
31	....Vidicons
32	...Matrix
33	.Two potential barriers
34	..Bipolar transistor
35	...Lateral transistor
36	...Multielement (e.g., multiemitter, tetrode)
37	..Three potential barriers
38	...Controlled rectifiers and Shockley diodes
39	....Bidirectional (e.g., Triacs, Diacs)
40	.Integrated chip
41	..Contains a field effect transistor
42	...Complementary
43	...And bipolar transistor
44	..Complementary
45	..Matrix and array
46	..Plural devices share common active region (e.g., Darlington type)
47	..Isolation means
48	...P/N junction
49	...Dielectric
50	...Combined P/N junction and dielectric isolation
51	..Combined with a passive device (e.g., resistor, capacitor, inductor)
52	.Surface effects (e.g., passivation, guard rings)
53	..Field relief
54	..Multiple dielectrics
55	.Discrete device with particular external geometry (e.g., grooves, holes)
56	..Mesa
57	.Negative resistance
58	.Intrinsic region (e.g., I, II N)
59	.Polycrystalline
60	.Crystallography
61	.Particular compound
62	..Copper sulfide
63	.Particular dopant
64	..Deep level
65	OHMIC CONTACTS OF PARTICULAR MATERIAL OR GEOMETRY
66	.Liquid bonding
67	.Composite material
68	.Geometrical shape
69	..Beam lead
70	..Lead frame
71	.Multiple layers
72	ENCAPSULATED
73	.In glass
74	COMBINED WITH HOUSING
75	.With plural discrete devices
76	..Diode stack or bridge
77	...Dry rectifier type
78	.With desiccant, getter, or gas
79	.With single discrete device held in place by pressure means
80	.With device mounted on insulating support
81	.With cooling (e.g., heat sinks)
82	..Fluid cooling
83	...Cryogenic
84	.With shield
85	MISCELLANEOUS
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	CROSS-REFERENCE ART COLLECTIONS
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86	SHORTED JUNCTIONS
87	PELTIER EFFECT
88	PARTICULAR INTERNAL STRUCTURE OF REGION
89	STEP JUNCTION
90	CONCENTRATION GRADIENT
91	ION IMPLANT
92	INTEGRATED INJECTION LOGIC

CLASS 358 PICTORIAL COMMUNICATION; TELEVISION

DECEMBER 1990

1	NATURAL COLOR TELEVISION
2	.Holography
3	.Stereoscopic
310	.Recording or reproducing
311	..Editing
312	..Fast, slow or stop reproducing
313	..Field, frame or line skipping
314	..Dropout detection or correction
315	..Signal amplitude level control
316	...Color component
317	....Color killer
318	....Usng reference signal
319	..Synchronization signal modification
320	..Time (e.g., phase or frequency) control
321	...Of relative transducer/record medium speed
322	....Disc
323	...Using recorded reference (e.g., pilot) signal
324	...Phase matching or color components to an external reference
325	....Using variable delay
326	....Color burst
327	..Recorder or reproducer fault condition compensation
328	...Crosstalk elimination
329	...Comb filtering
330	..Frequency modulation recording techniques
331	..Using diffraction technique or stripe filter
332	..Using photographic record
333	...With color signal in nonpictorial form
334	..Separately recorded primary color signals
10	.Monitoring, testing, or measuring
11	.Signal format conversion
12	.Transmission signal formatting
13	..Pulse code modulation
14	..Simultaneous and sequential signals
15	..Simultaneous signals
16	...Luminance plus dual-phase modulated color carrier
17	.Color synchronization
18	..Of line-sequential switch
19	..Using burst
20	...Specific burst separation circuit
21 R	.Specific signal processing circuitry
21 V	...Vertical interval test/reference signal use
22	..Special effects
23	..Modulator or demodulator
24	...For PAL signal
25	...Reference signal control or source
26	..Color killer
27	..Color signal amplitude control
28	..Hue control
29	..Color balance or temperature
30	..Matrixing or mixing
31	..Chrominance-luminance signal separation
32	..Gamma correction
33	..Blanking
34	..D.C. insertion
35	..Differential phase or amplitude distortion correction
36	..Noise elimination
37	..Signal enhancing
38	..Frequency response modification
39	..Luminance channel circuitry
40	..Chrominance channel circuitry
41	.Picture signal generators
42	..With moving color filters
43	..With one pick-up device supplying more than one color signal
44	...Single photosensitive device
45	....With indexing
46	.....Including conductive grid at target
47	....Frequency separable signals
48	....Color signals at separate output terminals
49	....Separate complete images on face of photosensitive device
50	..With more than one pick-up device; each supplying only one color signal
51	...Misregistration correction
52	...Having four photosensitive devices
53	..Using mechanical-optical scanning means only
54	..Motion picture film scanning
55	..Optics
56	.Picture display
57	..Red-white phenomena
58	..With moving color filters
59	..Electroluminescent or solid state
60	..Projection device
61	...Using birefringent or polarizing medium
62	...Using deformable medium
63	...Using mechanical-optical scanning means only
64	..Using cathode ray tube
65	...Using separate electron beams in a single tube
66	...Using the same electron beam for more than one color
67	....With beam position indicating means
68	.....Horizontal stripes
69	.....Photoelectric sensor
70	.....Secondary emission sensor
71	....With electron-optical color selection
72	....With beam energy determining color
73	.....With variable depth of penetration of electron beam into the luminescent layer
74	....Beam intensity or ultor supply control
75	NATURAL COLOR FACSIMILE
76	.Color photography previewers
77	.Size variation
78	.Intermediate storage of signals
79	.Black signal synthesis
80	.Color correction
81	PSEUDO COLOR
82	.With conventional color television receiver
83	TELEVISION
84	.Audience survey and use accounting
85	.Telephone-television system and apparatus
86	.Wired broadcasting and distribution
87	.Panoramic
88	.Stereoscopic
89	..Pseudo
90	..Holographic
91	..Separate views on same channel
92	...Alternately transmitted
93	.Including structure dictated by use
94	..Aid for the blind
95	..Back scatter reduction
96	..Contour generator
97	..Combined television and motion picture
98	..Endoscope
99	..Underwater
100	..Hazardous or inaccessible
101	..Manufacturing
102	..Film, disc, or card retrieval
103	..Navigation
104	..Simulator
105	..Motion detector
106	..Flaw detector
107	..Measurement
108	..Surveillance

	TELEVISION
	.Including structure dictated by use
	..Surveillance
109	...Aerial viewing
110	.Responsive to nonvisible energy
111	..X-ray
112	..Sonic or ultrasonic
113	..Infrared
349	.Use or access blocking (e.g., locking switch)
125	.Camera tracking
126	..Using tracking gate
335	.Recording or reproducing television
336	..Noise pulse or dropout detection or correction
337	..Time (e.g., phase or frequency) control
338	...Of relative transducer/record medium speed
339	...Digital techniques
340	..Noise (e.g., crosstalk) reduction
341	..Separately recorded audio and video
342	..With disc
343	..Audio and video multiplexed onto same track
344	..With thermoplastic record
345	..With photographic record
346	...Recording at different frame rate
347	...Using laser or electron beam
348	...With record moving continuously
133	.Bandwidth reduction of signal
134	..Fast in-slow out
135	..Difference transmission
136	...Between fields or frames
137	..Scan rate variation
138	..Sampling
139	.Monitoring, testing, or measuring
140	.Standards or scan conversion
141	.Transmission signal formatting
142	..For transmission of more than one information signal
143	...Including sound
144	....Stereo sound
145	....During sync or blanking intervals
146	...Sequentially over the same band
147	....In blanking or sync periods
148	.Synchronization
149	..Remote-local lock in
150	..Generation of sync signals
151	...Means on video signal generator
152	..To achieve interlace scanning
153	..Sync separation
154	...Vertical from horizontal
155	...Noise reduction
156	....Amplitude limiting
157	....Noise inversion
158	..Automatic frequency control
159	...Sync signal compared with sawtooth derived from oscillator
160	.Specific processing circuitry
161	..Control dependent on ambient light
162	..Aperture correction
163	..Shading or black spot correction
164	..Gamma correction
165	..Picture blanking or sound muting
166	..Signal enhancing
167	..Noise elimination
168	..Brightness control (auto and manual)
169	..Contrast control (auto and manual)
170	..White limiter
171	..D.C. insertion
172	...Keyed clamp
173	...Diode
174	...Automatic gain control
175	...Carrier envelope
176	...Sync or blanking responsive
177	....Noise reduction or elimination
178	....Keyed
179	...Delayed AGC
180	..Sweep expansion or reduction
181	..Switching
182	..Dissolves or fades
183	..Wipes or inserts
184	..Amplifiers
185	.Studio equipment
186	.Transmitter circuitry
187	..To suppress echo
188	.Receiver circuitry
189	..TV receiver adapted to receive radio broadcast or in combination with radio receiver
190	..Power supply
191.1	..Tuning
192.1	...With indicator
193.1	...Search tuning
194.1	..Remote control
195.1	..Automatic frequency control
196	..Sound traps
197	..Intercarrier circuit
198	..Sound circuit
199	.Mechanical - optical scanning
200	..With fiber optics
201	..By acoustic wave
202	..Moving aperture
203	...Drum or belt
204	...Multiple scanning elements
205	..Moving lens or refractor
206	..Moving reflector
207	...Helical element
208	...Vibrating or oscillating
209	.Picture signal generator
210	..Remote control of generator
211	..Low light level
213.11	..Scanned solid state devices
213.12	...Junction field effect sensor (e.g., static induction)
213.13	...Having specific optical feature (e.g., shutter-readout coordination, viewfinder)
213.15	...Noise reduction or defect correction
213.16	....Dark current or temperature compensation
213.17	....With defective pixel compensation
213.18	....Transient or fixed pattern signal reduction (e.g., flicker, spike, grain)
213.19	....Blooming reduction or light level control (e.g., exposure control)
213.22	...Having particular interlacing feature
213.23	...Including charge transfer device
213.24	....Smear reduction
213.25	....Frame transfer
213.26	....Readout feature
213.27	...Readout enhancement
213.28	....Increased resolution
213.29	....Having shift register-sensor relationship
213.31	....Having specific biasing or pulsing feature
212	..Array of photocells
214	..Motion picture film scanner
215	...Intermittent film movement
216	...With modification of scanner sweep
217	..Cathode ray tube
218	...Automatic beam focusing
219	...Automatic beam current or sensitivity control
220	...Burn-in prevention
221	...Dark current compensation
222	...Image stabilization
223	...Remanent image erasure
224	...Viewfinder
225	..Optics
226	...Optical multiplexing
227	...Focus control
228	...Automatic iris control

	TELEVISION
	.Picture signal generator
229	..Support or housing
230	.Picture reproducer
231	..Projection device
232	...Kerr cell, polarizing
233	...Deformable medium
234	....Specific composition of medium
235	...Acoustic
236	...Alterable transmissivity
237	...Cathode ray tube as light source
238	....With concave mirror
239	.....With correcting plate
240	..Array of lamps
241	..Scanned solid state device
242	..Cathode ray tube
243	...Excess beam current or ultor voltage control
244	...With means to photograph displayed image
244.1	....Recording at different frame rate
244.2	....With record moving continuously
245	...Protective device
246	....Tensioned metal band
247	....Protective glass or panel
248	...Support
249	....Adjustable
250	...Optics
251	....For line elimination
252	....Glare reduction
253	....Filters
254	..Cabinet or chassis
255	...With light shield
400	FACSIMILE
401	.Image reproduction system
402	.Electronic mailbox
403	.Document filing and retrieval system
404	.Facsimile memory monitoring
405	.Image transmission accuracy verification
406	.Facsimile measuring, testing or calibrating
407	.Facsimile relay system
408	.Plural scanner station
409	.Synchronization
410	..Sync or phase pulse generator
411	..Facsimile carrier as synchronization signal
412	..Phase or speed regulation
413	...Start-stop
414	...With particular clutch mechanism
415	...With pendulum
416	...With tuning fork
417	...With strobe
418	...With movable phase shifter
419	...Receiver motor power transmitted from transmitter
420	...Receiver motor power source frequency change
421	...Receiver motor power source voltage change
422	...Receiver motor power source interruption
423	...With resistance variable in receiver motor power source
424	...Stylus
425	.Multiplex
426	.Time or bandwidth compression
261.1	..Run length encoding
261.2	...Predictive or adaptive encoding
261.3	...Two dimensional encoding
427	...Using Huffman code
261.4	...Having adressable memory
262.1	..Two level to three level
428	..Interpolation
429	..Halftone or grey level processing
430	..Adaptive or predictive
431	..Fill bits or dummy signal
432	..Two dimensional or orthogonal
433	...Block
434	.Auxiliary signal
435	..Transmitter and receiver both supply auxiliary signals
436	...Auxiliary signal controls apparatus at both transmitter and receiver
437	..Interruption detection and control
438	..Transmitter supplies auxiliary signal (s)
439	..Receiver supplies auxiliary signal (s)
440	..Telephone number or address of designator
441	..Facsimile alarm
442	.Facsimile system interface
443	.Specific signal processing circuitry
444	..Memory interface
445	..Signal sampling and conversion
446	..Signal voltage or gain control
447	..Signal enhancing
448	..Image processing
449	...Document size detection
450	...Plural images combined into a single image
451	...Picture size conversion
452	...Image editing
453	...Image portion selection
454	...Moire effect elimination
455	...Gray level processing
456	....Halftone
457	.....Dither matrix
458	.....Gradation or spatial processing
459	.....Variable halftone dot shape or size
460	.....Addressable storage
461	....Shade correction
462	...Text and image detection and processing
463	...Noise elimination
464	...To distinguish intelligence from background
465	...Picture signal thresholding
466	....Variable thresholding technique
467	...Image classification and coding
468	..Facsimile control unit
469	..Carrier wave modulation
470	.Coded character
471	.Picture signal generator
472	..Combined read and write head
473	..Hand held reader
474	..Scanning
475	...Facsimile illumination control
476	...Transceiver
477	...Nonlight
478	....Stylus type
479	...Facsimile video
480	...Coherent light
481	....Including polygon reflector
482	...Solid state
483	....Charge coupled device
484	...Fiber optics or optical waveguides
485	...Cathode ray tube
486	...Scan rate or document movement variation in accordance with data presence
487	...Facsimile transparency image scanning
488	...Document position detection
489	...Helical scanning pattern
490	....Transparent drum
491	.....Internal scan
492	....Specified sheet clamp
493	...Curved scanning surface
494	...Linear scanning pattern
495	....Spiral or helix aperture with linear aperture
496	....Document moves during scanning
497	....Scanning element moves relative to a flat stationary document
498	...Document feed

FACSIMILE
296 .Recording apparatus
297 ..Ablative
298 ..Halftone
299 ...Engraving
300 ..Electrostatic or electrolytic
301 ..Magnetic
302 ..Photographic
303 ..Pressure (e.g., on carbon paper)
304 ..With paper cutter
305 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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901 FIBER OPTICS
902 PHOTOCHROMIC
903 COMPUTER T.V. APPLICATIONS
904 FREQUENCY RESPONSE MODIFICATION
905 GHOST ELIMINATION
906 HANDHELD CAMERA WITH RECORDER IN A SINGLE UNIT
907 TRACK SKIPPERS (I.E., "GROOVE SKIPPERS")
908 PAUSE CONTROL (I.E., "COMMERCIAL KILLERS")
909 ELECTRONIC STILL CAMERA OR SCENE REPRODUCER

CLASS 360 DYNAMIC MAGNETIC INFORMATION STORAGE OR RETRIEVAL

DECEMBER 1990

CLASS 360 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 369 (AFTER SUBCLASS 18) AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 369.

1 RECORDING ON OR REPRODUCING FROM AN ELEMENT OF DIVERSE UTILITY
2 .Card
3 .Motion picture film
4 MANUAL INPUT RECORDING
5 RECORDING FOR SELECTIVE RETENTION OF A SPECIAL OCCURRENCE
6 RECORDING COMBINED WITH METERING OR SENSING
7 RECORDING FOR MONETARY DELAY OF AN ANALOG SIGNAL
8 RECORDING FOR CHANGING DURATION, FREQUENCY OR REDUNDANT CONTENT OF AN ANALOG SIGNAL
9.1 .Television signal
10.1 ..Fast, slow or stop reproducing
10.2 ...Scan locus or tracking control
10.3 ...Tape
11.1 ..Field or frame skipping
12 RECORDING OR REPRODUCING FOR AUTOMATIC ANNOUNCING
13 RECORD EDITING
14.1 .Television
14.2 ..Control track
14.3 ...Numerical code
15 RECORD COPYING
16 .Contact transfer
17 ..With magnetic bias
18 RECORDING OR REPRODUCING PLURAL INFORMATION SIGNALS ON THE SAME TRACK
19.1 .Audio and video
20 .Frequency multiplex
21 .Head gap azimuth multiplex
22 SPLITTING ONE INFORMATION SIGNAL FOR RECORDING ON PLURAL DISTINCT TRACKS OR REPRODUCING SUCH SIGNAL
23 .Time division
24 SPLITTING, PROCESSING AND RECOMBINING ONE INFORMATION SIGNAL FOR RECORDING OR REPRODUCING ON THE SAME TRACK
25 CHECKING RECORD CHARACTERISTICS OR MODIFYING RECORDING SIGNAL FOR CHARACTERISTIC COMPENSATION
26 ELECTRONICALLY CORRECTING PHASING ERRORS BETWEEN RELATED INFORMATION SIGNALS
27 RECORDING OR REPRODUCING AN INFORMATION SIGNAL AND A CONTROL SIGNAL FOR CONTROLLING ELECTRONICS OF REPRODUCER
28 .Reference carrier to control demodulator
29 MODULATING OR DEMODULATING
30 .Frequency
31 MONITORING OR TESTING THE PROGRESS OF RECORDING
32 CONVERTING AN ANALOG SIGNAL TO DIGITAL FORM FOR RECORDING; REPRODUCING AND RECONVERTING
33.1 GENERAL PROCESSING OF A TELEVISION SIGNAL
34.1 .Inverting polarity of alternate periods
35.1 .Single field or frame recording
36.1 .Time correction
36.2 ..Digital techniques
37.1 .Synchronization signal modifying
38.1 .Drop-out correction
39 GENERAL PROCESSING OF A DIGITAL SIGNAL
40 .In specific code or form
41 ..Nonreturn to zero
42 ..Phase code
43 ..Milti-frequency
44 ..Intra-cell transition
45 .Pulse crowding correction
46 .Head amplifier circuit
47 .Redundant or complimentary tracks
48 .Data in specific format
49 .Address coding
50 .Inter-record gap processing
51 .Data clocking
52 ..With incremental movement between record and head
53 .Data verification
54 .Data recirculation
55 GENERAL RECORDING OR REPRODUCING
57 .Selective erase recording
58 .Boundary displacement recording or transducers
59 .Thermomagnetic recording or transducers
60 .Recording-or erasing-prevention
61 .Signal switching
62 ..Record-reproduce
63 ..Between plural stationary heads
64 ..Between heads in alternate engagement with medium
65 .Specific of equalizing
66 .Specifics of biasing or erasing
67 .Specifics of the amplifier
68 ..Recording amplifier
69 AUTOMATIC CONTROL OF A RECORDER MECHANISM
70 .Synchronizing moving-head moving-record recorders
71 .Controlling the record
72.1 ..Locating specific areas
72.2 ...Responsive to recorded address
72.3 ...Responsive to tape transport
73.01 ..Speed
73.02 ...Control of relative speed between carriers
73.03 ...Rotary carrier
73.04 ...Linear carrier
73.05 ....Plural speed transport
73.06 .....Automatic change between fixed speeds
73.07 .....Automatic selection of carrier or track speed
73.08 .....Variable speed
73.09 ....Constant speed
73.11 .....By reproduced control signal and transport derived signal
73.12 .....By reproduced control signal
73.13 ......From separate track
73.14 .....By signal derived from transport
74.1 ..Stopping or reversing
74.2 ...Responsive to reel rotation
74.3 ...Responsive to tape tension
74.4 ...Responsive to magnetic recorded signals
74.5 ...Responsive to physical property of record
74.6 ....Photoelectric
74.7 ....Conductive
75 .Controlling the head
76 ..Azimuth or skew
77.01 ..Track centering
77.02 ...Rotary carrier
77.03 ....By nonmagnetic sensing (e.g., optical, capacitive)
77.04 ....By memory storage of repeatable error or correction
77.05 ....By servo signal component from carrier surface separate from information signal bearing surface
77.06 ....Reproduced data signal used for tracking
77.07 ....By tracking signal recorded on or immediately beneath surface

	AUTOMATIC CONTROL OF A RECORDER MECHANISM
	.Controlling the head
	..Track centering
	...Rotary carrier
	....By tracking signal recorded on or immediately beneath surface
77.08	.....Distinct servo sector
77.11	.....Continuous servo signal
77.12	...Elongate web carrier (i.e., tape)
77.13	....Transverse scan path
77.14	.....By pilot signal
77.15	......Plural pilot signals along single transverse path
77.16	.....Having head deflection drive (e.g., piezoelectric bimorph)
77.17	......Dithering
78.01	..Track changing
78.02	...Tape
78.03	....Plural tapes
78.04	...For rotary carrier (e.g., disc)
78.05	....Coarse and fine head drive motors
78.06	....Specified velocity pattern during access
78.07	.....Controlled by memory device
78.08	....Specified spatial pattern during access
78.09	....Including model of servo system or element
78.11	....Including nonmagnetic position sensing
78.12	....Including particular head actuator
78.13	.....Stepping motor
78.14	....By recorded servo reference or address signal
78.15	....Drum
79	RECORDER CONTROL OF AN EXTERNAL DEVICE
80	.Slide or movie projectors
81	RECORD TRANSPORT WITH HEAD MOVING DURING TRANSDUCING
82	.Belt record
83	.Tape record
84	..Rotating head
85	...Tape in container
86	.Disk record
87	.Drum record
88	RECORD TRANSPORT WITH HEAD STATIONARY DURING TRANSDUCING
89	.Wire record
90	.Tape record
91	..Plural tapes
92	...Tape in container
93	..Tape in container
94	...Transport accommodates different types
95	...With tape extraction
96.1	...Plural reels
96.2	....With dual capstan drive
96.3	....Reel drive details
96.4	.....With common capstan drive
96.5	....Container mounting details
96.6	.....With pivotal holder
97.01	.Disk record
97.02	..Environmental control (e.g., air filter, temperature control)
97.03	...Plural disks
97.04	...Flexible disk
98.01	..Plural disks
98.02	...Axially fixed flexible disks
98.03	....With pneumatic partioning of disks
98.04	...Changer
98.05	....Control detail
98.06	....Mechanical detail
98.07	...Rotational drive detail
98.08	...Seating of disks
99.01	..Flexible disk
99.02	...Loading or ejecting mechanism
99.03	....Motorized
99.04	...Rotational drive detail
99.05	...Disk seating
99.06	..Loading or ejecting mechanism
99.07	...Motorized
99.08	..Rotational drive detail
99.09	...Movable drive
99.11	...Stationary drive
99.12	..Disk seating
100.1	.Drum record
101	HEAD TRANSPORT WITH RECORD STATIONARY DURING TRANSDUCING
102	FLUID BEARING HEAD
103	.Flying head
104	HEAD MOUNTING
105	.For moving head into and out of transducing position
106	.For shifting head between tracks
107	.For moving head during transducing
108	..Signal transfer to and from head
109	.For adjusting head position
110	HEAD
111	.Flux gate
112	.Hall effect
113	.Magnetoresistive or magnetostrictive
114	.Magneto-optic
115	.Flux scanning
116	.Cathode ray
117	.Hand-held
118	.Erase
119	.Gap structure details
120	..Spacer material
121	..Plural gaps
122	.Head surface structure
123	.Head winding
124	..For cross-talk prevention
125	.Head core
126	..Laminated
127	..Nonmetallic
128	.Head accessory
129	..Housing
130.1	..Record separator
130.2	..Record guide
130.21	...Tape record
130.22	....Rotating head
130.23	.....Helical scan
130.24	......Head drum details
130.3	..Pressure element
130.31	...Tape record
130.32	....Element mounting details
130.33	....Element in tape container
130.34	...Disc record
131	RECORD MEDIUM
132	.In container
133	..For disk
134	.Tape
135	.Disk
136	.Drum
137	MISCELLANEOUS

1 SAFETY AND PROTECTION OF SYSTEMS AND DEVICES
2 .Arc suppression at switching point (i.e., includes solid state switch)
3 ..Synchronized or sequential opening or closing
4 ...Counter electromotive force
5 ...With current sensitive control circuit
6 ...With voltage sensitive control circuit
7 ...With combined voltage and current sensitive control circuit
8 ...Shunt bypass
9 ....With sequentially inserted impedance
10 ..By inserting series impedance
11 ...Nonlinear impedance
12 ...By arc stretching (e.g., horn gap)
13 ..Shunt bypass of main switch
14 ..Arc blowout for main breaker contact (e.g., electromagnet, gas, fluid, etc.)
15 .Capacitor protection
16 ..Series connected capacitors
17 ..Shunt connected capacitors
18 .Voltage regulator protective circuits
19 .Superconductor protective circuits
20 .Generator protective circuits
21 ..Voltage responsive
22 .Compressor protective circuits
23 .Motor protective condition responsive circuits
24 ..Current and temperature
25 ..Motor temperature
26 ...With bimetallic sensor
27 ...With thermistor sensor
28 ..With time delay
29 ...During energization of motor
30 ..Current and voltage
31 ..Current
32 ...Bimetallic element
33 ..Voltage
34 ...Bimetallic element
35 .Transformer protection
36 ..With differential sensing means
37 ..With temperature or pressure sensing means
38 ..Transformer with structurally combined protective device
39 ..With lightning arrester and fuse
40 ...With lightning arrester (e.g., spark gap)
41 ...With fuse
42 .Ground fault protection
43 ..Fault suppression (e.g., Petersen coil)
44 ..With differential sensing in a polyphase system
45 ..With differential sensing in a single phase system
46 ...With more than two wires
47 ..In a polyphase system
48 ...With more than three wires
49 ...In a single phase system
50 ...With more than two wires
51 .Overspeed responsive
52 .By regulating source or load (e.g., generator field killed)
53 ..Prime mover control
54 .Load shunting by fault responsive means (e.g., crowbar circuit)
55 ..Disconnect after shunting
56 ..Voltage responsive
57 ..Current responsive
58 .Impedance insertion
59 .Circuit automatically reconnected only after the fault is cleared
60 ..With differential voltage comparison across the circuit interrupting means
61 ..Reclosing of the nonfaulty phases of a polyphase system
62 .Feeder protection in distribution networks
63 ..With current responsive fault sensor
64 ...With communication between feeder disconnect points
65 ..With current and voltage responsive fault sensors
66 ...With communication between feeder disconnect points
67 .Series connected sections with faulty section disconnect
68 ..With communication between disconnect points
69 ...Pilot wire communication
70 ..Constant current system
71 .Automatic reclosing
72 ..With lockout means
73 ...Including timer reset before lockout
74 ..Continuous
75 ...With time delay before reclosing
76 .With phase sequence network analyzer
77 .Reverse phase responsive
78 .With specific quantity comparison means
79 ..Voltage and current
80 ...Distance relaying
81 ....With communication means between disconnect points
82 ...Reverse energy responsive (e.g., directional)
83 ...With time delay protective means
84 ..Reverse energy responsive (e.g., directional)
85 ..Phase
86 ..Voltage
87 ..Current
88 .With specific voltage responsive fault sensor
89 ..With time delay protective means
90 ..Overvoltage and undervoltage
91 ..Overvoltage
92 ..Undervoltage
93 .With specific current responsive fault sensor
94 ..With time delay protective means
95 ...With instantaneous override
96 ....With multiple timing characteristics (e.g., short, long)
97 ...With multiple timing characteristics
98 ...Transistorized
99 ...Combined thermal-electromagnetic relay
100 ..With semiconductor circuit interrupter (e.g., SCR, Triac, Tunnel Diode, etc.)
101 ...With transistor circuit interrupter
102 ...With mechanical circuit breaker
103 .Circuit interruption by thermal sensing
104 ..With fuse
105 ..With bimetallic element
106 ..With thermistor
107 .With specific transmission line (e.g., guarded)
108 ..Plural conductors in single sheath (e.g., compound)
109 .Too large fault makes breaker inoperative
110 .Transient nonresponsive (e.g., ignores surge on transmission line)
111 .Transient responsive
112 .With space discharge means
113 .With tuned circuit
114 .With manual or automatic opening of breaker and manual reclose

	SAFETY AND PROTECTION OF SYSTEMS AND DEVICES
115	.With specific circuit breaker or control structure
116	..Pneumatically operated circuit breaker
117	.High voltage dissipation (e.g., lightning arrester)
118	..Surge prevention (e.g., choke coil)
119	...In communication systems
120	..Vacuum or gas filled space discharge
121	..Fluid (e.g., mercury, quenching)
122	...Electrolytic
123	...Gas blast
124	..Thermal (e.g., fusible, bimetallic)
125	...With cutout (e.g., blowout type)
126	..Current limiting material in discharge path
127	...Nonlinear material (e.g., valve type)
128	....With plural gaps in discharge path
129	..Plural gaps with common electrode
130	..Plural gaps serially connected
131	..Combined (e.g., with disconnect switch)
132	...With line supporting insulator
133	..With magnetic means (e.g., electro-magnet)
134	...Arc stretching (e.g., blowout)
135	....By separating contacts
136	...For grounding line
137	..Horn gap
138	...With resistance insertion
139	CONTROL CIRCUITS FOR ELECTRO-MAGNETIC DEVICES
140	.Including compensation for thermal change of electromagnetic device
141	.Including superconductivity
142	.Including housing
143	.Systems for magnetizing, demagnetizing, or controlling the magnetic field
144	..For lifting or holding
145	...Magnetic chuck type
146	..Systems for magnetic field stabilization or compensation
147	..With permanent magnet
148	...Calibration or permanent magnet
149	..Demagnetizing
150	...Television degaussing
151	...Magnetic tape
152	...Including particular drive circuit
153	...Pulse initiated
154	...Including means to establish plural distinct current levels (e.g., high, low
155	....With capacitor charging or discharging through coil
156	...With capacitor charging or discharging through coil
157	.Including instrument (e.g., meter-relay)
158	..Temperature indicating instrument
159	.Including means for using, or compensating for, the induced EMF of the electromagnetic device
160	.For relays or solenoids
161	..Including thermal device
162	...Thermoelectric
163	...Bimetallic element
164	....Including heater
165	...Thermistor
166	..Plural relays or solenoids sequentially operated
167	...Alternately operated
168.1	...Pulse responsive
169.1	....Including electronic element
170	..Condition responsive (e.g., external circuit condition)
171	...Code responsive
172	....Including electronic element
173	...Light
174	....Light sensor controls its light path
175	....Including electronic element
176	.....Plural light sensors
177	....Plural light sensors
178	...Fluid (e.g., liquid level, humidity)
179	...Proximity or contact
180	....Metal presence or absence responsive
181	....Capacitance change type
182	...Frequency (e.g., audio, radio, remote control link)
183	....Plural relays or solenoids as loads
184	....Specific frequency responsive relay
185	...Phase
186	...Pulse
187	...Voltage or current level discriminators
188	...Variable impedance
189	..Plural switches in control circuit
190	...Including electronic switch
191	..Plural relay or solenoid load selectively operated
192	...Including interlock
193	....Electronic interlock
194	..Holding means
195	..Time delay
196	...Including semiconductor device connected to timing element
197	....Threshold device (e.g., Zener, Schockley diode)
198	.....Including three or more electrodes (e.g., unijunction)
199	...Including electric discharge device
200	....Threshold device (neon tube)
201	.....Including thyratron
202	...Electromechanical delay means
203	..With oscillator
204	..With magnetic amplifier or saturable reactor
205	..Threshold device (e.g., SCR, thyratron)
206	..Particular relay or solenoid
207	...Electrostatic
208	...Polarized
209	...Alternating current type
210	...Plural coils
211	CONTROL CIRCUITS FOR NONELECTRO-MAGNETIC TYPE RELAY (E.G., THERMAL RELAYS)
212	DISCHARGING OR PREVENTING ACCUMULATION OF ELECTRIC OF ELECTRIC CHARGE (E.G., STATIC ELECTRICITY)
213	.By charged gas irradiation
214	.Of paper or paper handling machine
215	.Of storage or hazardous area or fluid handling
216	.Structurally combined with building or vehicle
217	..With external structure of vehicle
218	...Aircraft
219	...Chain-type grounding means
220	.Specific conduction means or dissipator
221	..Brush or roller-type structure
222	..Rod-type structure
223	..Shoe type
224	...Integral with shoe
225	ELECTRIC CHARGING OF OBJECTS OR MATERIALS
226	.Particulate matter (e.g., liquids with suspended particles)
227	..For spray production
228	...Liquid type
229	.By charged gas irradiation
230	ELECTRIC CHARGE GENERATING OR CONDUCTING MEANS (E.G., CHARGING OF GASES)
231	.Modification of environmental electric charge
232	.For application to living beings

ELECTRIC CHARGE GENERATING OR CONDUCTING MEANS (E.G., CHARGING OF GASES)
233 .Use of forces of electric charge or field
234 ..Pinning
235 .With specific power supply
236 ELECTRICAL SPEED SIGNAL PROCESSING SYSTEMS
237 .With centrifugal weight means
238 .Antislip detection and circuitry
239 .With speed analog electrical signal
240 .Including frequency generators
241 .Two position (e.g., on-off)
242 .With speed comparison
243 .Synchronization of shafts
244 ..Phase comparison
245 POLARITY REVERSING
246 .Automatic
247 IGNITING SYSTEMS
248 .For explosive devices
249 ..With sequential firing by electronic switching
250 ..With sequential firing by mechanical switching
251 ..With capacitor discharging into explosive device
252 ..With electromechanical power source
253 .For electric spark ignition
254 ..With electromagnet control means
255 ...Including spark electrode make-break
256 ..With capacitor discharging into sparking transformer
257 ..With capacitor discharge into spark gap
258 ..With electromechanical generator
259 ...With permanent magnet
260 ...With piezoelectric element
261 ..With mechanical arrangement for spark electrode make-break
262 ..With one spark electrode which is hand held
263 ..With spark coil or transformer
264 .For incandescent ignition
265 ..With electromagnet control means
266 ..With helical heating element
267 DEMAGNETIZING SYSTEMS AND PROCESSES
268 TRANSFORMERS AND INDUCTORS WITH INTEGRAL SWITCH, CAPACITOR OR LOCK (E.G., IGNITION COIL)
269 .With lock for preventing unauthorized use
270 .With capacitor element
271 ELECTROSTATIC CAPACITORS
272 .With protection or compensating means
273 ..Self-healing
274 ..Temperature
275 ..Electrical (e.g., fuses, etc.)
276 .Cryogenic
277 .Variable
278 ..With significant electrode or terminal feature
279 ..Gas or vacuum dielectric
280 ..Responsive to external condition
281 ...Electrical
282 ...Thermal
283 ...Pressure
284 ...Liquid level
285 ...Fluid flow
286 ...Humidity
287 ..Mechanically variable
288 ...Push button
289 ...Motor driven
290 ...By varying distance between electrodes
291 ....Compression type
292 ...By varying effective area of electrode
293 ....Disk trimmer
294 ....Direct travel piston type
295 ....Piston trimmer
296 ....Sliding plates
297 ....Spiral or helical plates
298 ....Rotary plates
299 .....Plural capacitors
300 ...With controlling or indicating means
301 .Fixed capacitor
302 ..Feed through
303 ..Significant electrode feature
304 ...Nonself-supporting electrodes
305 ...Material
306 ..Significant electrical connection means (e.g., terminal or lead)
307 ...Lead extends into body of capacitor
308 ...Lead attached to edge of capacitor
309 ....Metallized terminal
310 ...Lead extends around at least a portion of capacitor
311 ..Solid dielectric
312 ...Plural dielectrics
313 ....Layered
314 ....Impregnated
315 .....With specific impregnant
316 ......Including wax
317 ......Including halogen (e.g., chlorinated)
318 ....With stabilizer or modifying substance
319 .....With stabilizer or modifying substance
320 ....Ceramic and glass
321 ...Ceramic, glass, or oxide particles
322 ....Oxide film
323 ...Plastic
324 ...Fibrous or fabric (e.g., paper, etc.)
325 ...Mica
326 ..Vacuum or gas dielectric
327 ..Liquid dielectric
328 ..Multiple capacitors
329 ...Distinct physically
330 ...Shared electrode
331 HOUSINGS AND MOUNTING ASSEMBLIES WITH PLURAL DIVERSE ELECTRICAL COMPONENTS
332 .For electrical power distribution systems and devices
333 ..Distribution station (substation)
334 ..Distribution or control unit
335 ..Electrical switchgear
336 ...Draw-out type (truck type)
337 ....With interlock
338 ...Drawer type
339 ....With interlock
340 ...Pivoted support means
341 ...Busbar arrangements
342 ....With plural removable control units in housing
343 ...With interlock
344 ....Door or cover type
345 ....Shutter type
346 ..Distribution or control panel boards
347 ...With switches and fuses
348 ....Unit block
349 ...With fuses
350 ...With switches
351 ....With switch actuating arrangements
352 ...Plugboards
353 ...With circuit breaker arrangements
354 ....With discriminating means
355 ...Busbar or conductor arrangements
356 ..Electric service distribution boxes
357 ...With switch or fuse
358 ...Including panel board
359 ....Adjustable panel
360 ....With switch or fuse
361 ....Busbar arrangements
362 ....Panel board corner mountings

HOUSINGS AND MOUNTING ASSEMBLIES WITH PLURAL DIVERSE ELECTRICAL COMPONENTS
.For electrical power distribution systems and devices
..Electric service distribution boxes
...Including panel board
363 ....Circuit breaker supporting arrangements
364 ..For electricity service meter
365 ...Plural meters
366 ...With meter circuit controller
367 ....Bypass arrangement
368 ....With transformer or circuit breaker
369 ...Meter mounting arrangements
370 ....Adaptable meter supports
371 ....Retractable or detachable meter support
372 ...Meter terminal and connector arrangements
373 ....Terminal block
374 ....Contact blade receiving structure
375 ....Adjustable or adaptable contacts
376 ..Circuit breaker supporting means (attaching, mounting)
377 ..For ballast elements
378 ..Bus duct
379 ..With cooling means
380 .For electronic systems and devices
381 ..With cooling means
382 ...Fluid
383 ....Air
384 .....With air circulating means
385 .....Liquid
386 ...Thermal conduction
387 ....By specific coating
388 ....Through support means
389 ....Through component housing
390 ..Cabinet-type housing
391 ...With retractable or readily detachable chassis
392 ..Module
393 ...Plural modules
394 ....With housing
395 ...With printed circuits
396 ...Cordwood type
397 ..Printed circuit board
398 ...Flexible board
399 ...With housing or chassis
400 ...Connection of components to board
401 ....Component within printed circuit board
402 ....By direct coating of components on board
403 ....With mounting pad
404 ....With specific lead configuration
405 .....Shaped lead on components
406 .....Shaped lead on board
407 .....Busbar
408 .....Flexible connecting lead
409 ....By specific pattern on board
410 .....Cross-connected
411 .....Witn specific material
412 ...Plural printed circuit boards
413 ....With separable connector or socket means
414 ....Plural contiguous boards
415 ....With housing or chassias
416 ..Matrix assembly
417 ..Component mounting or support means
418 ...Mounting pad
419 ..With discrete structure or support
420 ..Plural mountings or supports
421 .Lead frame
422 .Radio type
423 ..Tube mountings
424 .Shielding
425 .Contact banks
426 .Terminal blocks
427 .Support brackets
428 .Wire distribution (e.g., harness, rack)
429 .Frame
430 .Fuse block
431 ..Plural fuse blocks
432 .Fuse pullout device
500 ELECTROLYTIC SYSTEMS OR DEVICES
501 .Coulometer (i.e., electrochemical timer)
502 .Double layer electrolytic capacitor
503 .Liquid electrolytic capacitor
504 ..With significant electrolyte
505 ...Salt solute
506 ...Ethylene glycol
507 ...With depolarizer
508 ..Anode type electrode
509 ...Aluminum or tantalum
510 ...Anode riser
511 ...Wound
512 ....With separator
513 ....With mounting means (e.g., anchoring means or clamping)
514 ....With heat conductor (e.g., heat sink)
515 ....With common conductor (e.g., stripline)
516 ..Cathode type electrode (e.g., cathode casing)
517 ..Casing
518 ...With hermetic seal
519 ...With header, cover or endseal
520 ....Significant electrical connection means (e.g., terminals or leads)
521 ...With vent means
522 ..Multiple capacitors
523 .Solid electrolytic capacitor (e.g., dry electrolytic capacitor)
524 ..Dielectric
525 ..With significant electrolyte or semiconductor
526 ...Paste or gel
527 ...Organic salt (e.g., TCNQ)
528 ..Anode type electrode
529 ...Aluminum or tantalum
530 ...Wound
531 ....With lead conductor
532 ..Cathode type electrode
533 ...With significant lead
534 ..With protection means
535 ..Casing
536 ...With hermetic seal
537 ...With header, cover or endseal
538 ....Significant electrical connection means (e.g., terminals or leads)
539 ....With potting
540 ..With terminal
541 ..Multiple capacitors
434 .Systems (e.g., plural cells, standby exciting voltage)
435 .Current interruption type (e.g., circuit breaker, D.C.-to-pulse converters)
436 .Rectifiers
437 MISCELLANEOUS

CLASS 362 ILLUMINATION

DECEMBER 1990

1 DAYLIGHT LIGHTING
2 .Including selected wavelength modifier (e.g., filter)
3 PHOTOGRAPHIC LIGHTING
4 .Light responsive
5 .Measuring or indicating
6 .Heat responsive or control
7 .Convertible
8 .Combined
9 ..With battery support means
10 .Safety or interlocks
11 .Plural light sources or light source supports
12 ..Diverse type or size
13 ..Lamp substitution or selection
14 ...Indexing (i.e., dynamic)
15 ....With electrical ignition
16 .Including specific light modifier
17 ..Plural diverse
18 ..Selective or adjustable
19 WITH POLARIZER
20 AUTOMATIC SUBSTITUTION OF POWER SUPPLY OR LIGHT SOURCE
21 WITH FILAMENT CONTROL MEANS RESPONSIVE TO FRACTURE OF LIGHT SOURCE ENVELOPE OR ENCLOSURE
22 .Fluid or pressure responsive
23 ILLUMINATED SCALE OR DIAL
24 .Telephone dial
25 .Radiator water temperature meter
26 .Edge illuminated modifier or light rod/pipe
27 ..Plural light sources
28 .Illuminated through meter case
29 .Internal light source
30 ..Indirect illumination
31 EDGE LIGHTED PANEL
32 LIGHT FIBERS, RODS OR PIPES
33 WORK-TABLE LIGHTING SYSTEM
34 CHEMILUMINESCENT LIGHTING
35 REVOLVING
36 VEHICLES STEERING SWITCHES LIGHT SOURCES
37 VEHICLE STEERING MECHANISM OR ELEMENT MOVES PIVOTED LAMP OR LAMP SUPPORT
38 .Through fluid pressure control
39 .Pivoted lamps having plural unlike motions controlled additionally by manual movement
40 .Manual or steering mechanism control of pivoted lamp
41 .Plural lamps, one only moves in turn direction
42 .Tire, wheel or brake backing plate movement turns lamp
43 .Plural lamps concurrently moved
44 ..Single connection to steering mechanism or element
45 ...First lamp motion moves second lamp
46 ....Steering post arm or rod motion controls first lamp
47 .....Through link and lever transmission means
48 ....Tie rod motion controls first lamp motion
49 ...Steering post, arm rod motion controls lamps
50 ....Through link and lever transmission means
51 ...Tie rod motion control
52 ..Tie rod motion control
53 .Steering post, arm or rod controlled
54 ..Through link and lever motion transmission
55 .Stub shaft, stub shaft arm or attachment element controlled
56 ..Through telescopic motion transmission means
57 .Tie rod element controlled
58 ..With manual disconnect
59 ..Through link and lever motion transmission means
60 ...With pin and slot motion transmission means
61 WITH VEHICLE STRUCTURE
62 .Aircraft
63 ..Having retractable lamp
64 .Having light aperture
65 ..With retractable headlight
66 .With operating means to move pivoted lamp or lamp support
67 ..Truck or track controls movable light support
68 ...Through flexible motion transmission element
69 ...Through meshing gears motion transmission elements
70 ...Through rigid link motion transmission elements
71 ..Illuminating means repositioned in response to change in relative position of vehicle element
72 .Bicycle or motorcylce
73 .Baggage rack
74 .Ventilation duct, ceiling or roof
75 .Seat
76 .Elevator, railway step or threshold
77 .Railway dashboard
78 .Wheel spindle, axle, hub cap or brake backing lamp support
79 .Radiator, radiator cap or attachment
80 .Hood, shell, grill, fire wall or body member
80.1 ..Windshield or window
81 .Running board
82 .Bumper, bumper guard
83 .Fenders
83.1 .Mirror or reflector
83.2 .License plate or bracket
83.3 .Other light
84 LIGHT SOURCE OR LIGHT SOURCE SUPPORT AND LUMINESCENT MATERIAL
85 WITH CONTROL CONSOLE
86 SOUND EQUIPMENT ILLUMINATOR
87 .Phonograph
88 .Telephone
89 MACHINERY LIGHTING
90 .Sewing
91 .Cleaning
92 WITH HEATER OR REFRIGERATOR
93 .Nonelectric illuminator
94 .With door-controlled switch
95 WITH SWITCH PLATE OR SOCKET
96 WITH FLUID DISTRIBUTER
97 LIGHT TABLE-TYPE ILLUMINATOR
98 WITH PAPER, BOOK OR COPY HOLDER
99 .Notepad
100 DOOR KNOB OR KEYHOLE ILLUMINATOR
101 WITH LIQUID CONTAINER
102 WITH CANE, BATON, UMBRELLA OR CLUB
103 WITH WEARING APPAREL OR BODY SUPPORT
104 .Jewelry
105 .Head covering or clamp
106 ..Hat
107 ...Nonelectric light unit
108 .Shoulder suspension or torso encircling (e.g., vest, neck-sling)
109 WITH IMPLEMENT OR HAND HELD HOLDER THEREFOR
110 .Firearm
111 ..Convertible to light gun
112 ..Imitation firearm
113 ..Light controlled by trigger
114 ..Switch on handle
115 .Barber
116 .Key holder
117 .Iron

WITH IMPLEMENT OR HAND HELD HOLDER THEREFOR
118 .Pen or pencil
119 .Hand tool (e.g., knife, drill)
120 ..Elongate type
121 WITH STAR OR CROSS
122 WITH PLANT-LIKE ORNAMENT OR WREATH
123 .Tree
124 WITH SIMULATED ANIMAL
125 WITH SHOWCASE OR SHOW WINDOW
126 .Heat insulation or dissipation type
127 WITH FURNITURE
128 .With viewing mirror
129 ..Adjustable
130 .Bed
131 .Chair, stool or sofa
132 .Plural diverse type article holders (e.g., drawer and hook)
133 .Cabinet
134 .Base
135 WITH VIEWING MIRROR
136 .With vanity case
137 ..With closure light source control
138 .Inspection type
139 ..Adjustable
140 .With plural light sources or diverse light modifiers
141 ..Adjustable
142 .Adjustable
143 ..Janus-faced mirror-and-light projector
144 ..Repositionable as a unit
145 WITH STATIC STRUCTURE
146 .Staircase
147 .Wall or ceiling
148 ..Subceiling
149 ...With fluid handling means
150 ...Common subceiling and light unit support
151 .Valence or cornice
152 .With border, fence, gate or awning
153 .Floor
153.1 .Pavement
154 WITH CONTAINER
155 .With closure controlled switch
156 .Bag, purse or trunk
157 SELF POWERED LAMP
158 .With hermetic seal
159 .Nonelectric
160 ..Acetylene
161 ..Candle type
162 ...Collapsible housing
163 ...With chimmey
164 ..Miner's safety type
165 ...With lock
166 ..Selective wavelength transmitting or light blocking means
167 ...With separate movable selective elements
168 ....Plural
169 ...Plural lenses
170 ....Rotatable type
171 ..Tubular type
172 ...Base structure
173 ...Dome structure
174 ...Relatively movable modifier
175 ....Compound motion
176 ....Rectilinear motion
177 ....Pivoted motion
178 ...Tube structure
179 ..Mantle type
180 ..Chimmey type
181 ..Base structure
182 ..Dome structure
183 .Rechargeable electrical source of with external connections
184 .Having plural lamp bulbs or lamp sockets
185 ..With a protective cage
186 .Dome, globe or wire guard or lamp bulb cover
187 .With movable focusing element
188 ..Movable lamp bulb or lamp bulb support
189 .Disposable lamp or flexible material casing
190 .With support
191 ..With or comprising mounting means
192 .Generator power source
193 ..Friction driven generator
194 .Battery supported separable lamp assembly
195 ..Battery terminal sole support of lamp
196 .Mating-halves type flashlight casing
197 .Lamp bulb or lamp support axis adjustable or angularly fixed relative to axis of flashlight casing
198 ..Flexibly or extensibly mounted lamp bulb or lamp support
199 ..Separate lamp housing or lamp support pivoed to flashlight casing
200 .Flat flashlight casing
201 ..Lamp terminal directly contacts a battery terminal
202 .Cylindrical flashlight casing
203 ..Bulb or battery physically moved to join mating contacts of each other
204 ..Insulated casing with switch between fixed conductors
205 ..With switch
206 ...At end opposite bulb
207 .Spare bulb carrier
208 .Flashlight elements
209 PLURAL NONELECTRIC LIGHT SOURCES
210 PLURAL CARBON ARC-TYPE LIGHT SOURCES
211 MULTIPLE FILAMENT LIGHT UNIT
212 .With electrical switching means
213 .Relatively movable light source or modifier
214 .With mask or screen for at least one filament
215 .With corrugated, faceted or fluted reflector and/or lens
216 CURVILINEAR LIGHT SOURCE
217 ELONGATED SOURCE LIGHT UNIT OR SUPPORT
218 .With ventilating or cooling means
219 .With means to position plural light sources colinearly
220 .Repositionable
221 .With means to accommodate additional circuit element
222 ..With or including transparent or translucent member
223 .With or including transparent or translucent member
224 ..Plural members
225 .Plural sources or supports therefor
226 QUICK DISCONNECT-TYPE LIGHT UNIT
227 PLURAL LIGHT SOURCES
228 .Diverse light generators
229 ..Gas and electric
230 .Particular wavelength
231 ..Different wavelengths
232 .Source and modifier mounted for relative movement
233 .Remote adjustment or positioning means
234 .Combined
235 .With modifier
236 ..Distinct light units
237 ...Substantially identical modifiers
238 ....Positioning means for plural units
239 .....Relative adjustment means
240 ....Units have common housing
241 ....Reflector type modifiers
242 ...Diverse modifiers
243 ....Including reflector
244 ...Refractor type modifier
245 ....With reflector

	PLURAL LIGHT SOURCES
	.With modifier
	..Distinct light units
	...Refractor type modifier
246	....Diffusing type
247	...Reflector type modifier
248	...Shielding type modifier
249	.With support
250	..Adjustable
251	..With switch
252	..Particular arrangement (e.g., ornamental star)
253	COMBINED
254	LIGHT SOURCE SUBSTITUTION
255	MODIFIER MOUNTABLE ON LIGHT SOURCE ENVELOPE
256	.With additional modifier
257	LIGHT SOURCE (OR SUPPORT THEREFOR) AND MODIFIER
258	.With extensible electric cord storage member
259	.Laser type
260	.Fluorescent type
261	.Carbon arc type
262	..With electrode feed means
263	.Ionized gas or vapor light source
264	..Including cooling means
265	..Including circuit arrangement
266	.Nonelectric type
267	.With sealing means or artifical atmosphere
268	.Plural serial lens elements or components
269	.Tiltable or rotatable as a unit
270	..With linear repositioning means
271	..With actuator
272	...Electric or pneumatic
273	...Screw actuator
274	...Resiliently biased
275	..Plural axes
276	.Condition responsive
277	.Adjustable or repositionable modifier
278	..Flexible modifier
279	..Louvered or grid type modifier movable as a unit
280	..In plane, or extension of modifying surface
281	...Plural, relatively movable
282	..Angularly adjustable or respositionable
283	...Plural, relatively movable
284	...With actuator
285	.Adjustable or repositionable light source or light source support
286	..Electromagnetic actuator
287	..Angularly adjustable or repositionable
288	..Resiliently biased
289	..Screw actuated
290	.Louvered or grid type modifier
291	..Including curved modifying surface
292	..Including nonparallel modifying surfaces
293	.Including selected wavelength modifier (e.g., filter)
294	.With ventilating, cooling or heat insulating means
295	.With rheostat or switch
296	.Including reflector
297	..With or including plural, distinct reflecting surfaces
298	...Opposed
299	....With or including refractor
300	....With or including translucent or transparent modifier
301	....With or including planer reflecting surface
302	....With or including coaxial reflecting surfaces
303	.....With or including means blocking axial rays
304	...Coaxial
305	....With or including means modifying axial rays
306	..With resilient means to position source or modifier
307	..With or including translucent or transparent modifier
308	...Refractor
309	....With complex surface
310	..Enclosed light source
311	.Including translucent or transparent modifier
312	LIGHT PERVIOUS CHIMNEYS OR ACESSORIES THEREFOR
313	.Attachments
314	.Chimeny support or holder
315	.Composite
316	.Modified base
317	LIGHT MODIFIER
318	.Fluid medium type
319	.Adjustable or positionable
320	..Flexible
321	..Shutter type
322	..Angularly
323	...In plane or modifier surface
324	...With actuator
325	...Louvered or grid type
326	.Refractor
327	..With reflector
328	...Reflector separate from refractor
329	...Enclosure type
330	..Panel type
331	..Plural serial refractors
332	..Separate sections
333	..With plural elements on both sides of main surface
334	...Curved main surface
335	..Curved lens type
336	...Including diverse refracting elements on one surface
337	....Prismatic type
338	...Plural elements on a curved surface
339	..Prismatic type
340	...Curved main surface
341	.Reflector
342	..Louvered or grid type
343	..With diverse modifier
344	..With guard means
345	..With ventilating or cooling
346	..Plural separate reflectors or separate sections
347	..Curved surface
348	...Patterned surface
349	...Including straight surface
350	...Bowl shaped main surface
351	.Translucent or opaque (e.g., "shade")
352	..Collapsible or folding
353	..Including socket engaging means
354	..Louvered or grid type
355	..Diffusing type
356	...Hollow body open at both sides
357	....Including cloth covering
358	..Wire frame type
359	..External hood or visor
360	..Plural sections
361	..Curved surface
362	HOUSING
363	.Transparent globe type
364	.Recessed
365	..With mounting means
366	...With adjustment for panel dimensions or slope
367	.Frame with multiple light-transmitting panels
368	.With mounting means
369	..Shock absorbing

HOUSING
.With mounting means
370 ..Arm or bracket
371 ...Adjustable movement between arm and housing
372 .With adjustable light source
373 .With cooling means
374 .With closure fastener
375 .With closure
376 GUARD MEANS
377 .Bulb engaging
378 .Socket engaging
379 SMOKE BELLS
380 SPARK ARRESTERS
381 GAS TAPS
382 SUPPORTS
383 .Object sound or sighting controls movable light support
384 .Moving mass control movable light support
385 .Fluid pressure controls movable light support
386 .Electromagnetic operator controls movable light support
387 .With flexible power-cord storage member
388 .Convertible support
389 .Antislipping
390 .Shock absorbing
391 .Line-wire or cable-attaching support
392 .Imitation candle support
393 ..Adjustable
394 .Special switch operator
395 ..With standard (e.g., table and floor lamps)
396 .Clamp or hook
397 .Suction cup
398 .Magnetic
399 .Handle or bail
400 ..With means for receiving guard
401 .Counterbalanced support
402 ..Spring counterbalance
403 .Support having gravity-type light source or light modifier raising and lowering means
404 .Ceiling-suspended support
405 ..Body member with plural radial arms (e.g., chandelier)
406 ...With mounting means
407 ..Cord-supported light source with light source directing means
408 ..With light modifier holder
409 ..Nonelectric
410 .Standard-type support (e.g., table or floor lamp)
411 ..With electrical regulating means
412 ..Vase-type standard
413 ..Adjustable standard
414 ..With light source support mounted at top end of standard
415 ..Nonelectric
416 .Arc lamp hanger
417 .Harp type support
418 .Adjustable light support
419 ..Having plural diverse motions
420 ...Plural headlight supports concurrently operated
421 ...With ball and socket light support
422 ...With coaxial motion transmission members
423 ....With plural pairs of gears transmitting motion through internal member
424 ....Internal coaxial member having straight line motion
425 ...Single reciprocating and turning member transmits plural different motions to the adjustable support
426 ...Fork support
427 ..Pivoted lamp or lamp support
428 ...With operating means to move lamp or lamp support
429 ..Adjustable socket holder
430 ..With mounting means
431 .Pole or post type support
432 .Wall type arm or bracket support
433 .Modifier support
434 ..Double-ring frame
435 ...Socket extension
436 ....Clamping jaws
437 ..Socket covers
438 ...Clamping jaws
439 ...With mounting means
440 ..Spring ring
441 ..Base
442 ...Spider
443 ..Removable socket collar
444 ..Spring frame or bulb
445 ..Spring frame on body of chimney
446 ..Side
447 ..On candle
448 ..With socket or shell
449 ..Adjustable
450 ..Collapsible
451 ..Drop
452 ..Interior arms and ring crown engaged
453 ..Inverted-bowl suspension devices
454 ...Combined with support
455 ..Lens holder or support
456 ...Perforated plate
457 MISCELLANEOUS ATTACHMENTS AND FITTINGS
458 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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800 LIGHT EMITTING DIODE
801 BEDROOM LIGHTING (E.G., MODULAR COMBINATIONS)
802 POSITION OR CONDITION RESPONSIVE SWITCH
803 PHOTO SAFE LAMP
804 SURGICAL OR DENTAL SPOTLIGHT
805 HORTICULTURAL
806 ORNAMENTAL OR DECORATIVE
807 .Star
808 .Figure
809 ..Terrestrial globe
810 .Imitation candle
811 .Psychedelic lighting
812 SIGNS

CLASS 363 ELECTRIC POWER CONVERSION SYSTEMS

DECEMBER 1990

1 CASCADED OR COMBINED, DIVERSE CONVERSIONS IN WHICH THE FREQUENCY OR PHASE OR COMBINED CONVERSION IS WITHOUT INTERMEDIATE CONVERSION TO D.C.
2 .Current and phase (e.g., D.C.-Ph1-Ph2)
3 ..Phase 1 to phase 2 to D.C.
4 ...Single phase to polyphase to D.C.
5 ...With interphase transformer
6 ....Including plural anode/single cathode device
7 ...With dynamic rectifier in phase 2 to D.C. stage (e.g., commutator type)
8 .Current and frequency (e.g., f1-f2-D.C.)
9 .Combined phase and frequency conversion (i.e., Ph1f1-Ph2f2)
10 ..By semiconductor device converter
11 ..By electron tube converter
12 ..By saturable reactor converter
13 CURRENT CONVERSION
14 .Cryogenic
15 .Including D.C.-A.C.-D.C. converter
16 ..Having transistorized inverter
17 ...Bridge type
18 ...Single ended self oscillating type
19 ....With automatic control of the magnitude of the output voltage or current
20 ...Single ended separately driven type
21 ....With automatic control of the magnitude of the output voltage or current
22 ...Double ended (i.e., push-pull) self oscillating tye
23 ....With automatic control of the magnitude of the output voltage or current
24 ...Double ended (i.e., push-pull) separately driven type
25 ....With automatic control of the magnitude of the output voltage or current
26 .....Using pulse with modulation
27 ..Having thyristor inverter (e.g., SCR)
28 ...With automatic control of the magnitude of the output voltage or current
29 ..Having electron tube inverter
30 ...Single ended type
31 ...Double ended type (i.e., push-pull)
32 ..Rotary-commutator-type inverter
33 ..Vibrator-type inverter
34 .Including an A.C.-D.C.-A.C. converter
35 ..For transfer of power via a high voltage D.C. link (i.e., HVDC transmission system)
36 ..For change of phase (e.g., number of phases)
37 ..By semiconductor rectifier and inverter
38 ..By electron tube rectifier and inverter
39 .With means to introduce or eliminate frequency components
40 ..In inverter systems
41 ...By pulse modulation technique (e.g., PWM, PPM, etc.)
42 ....Including notching
43 ...By step-wave, amplitude summation technique
44 ..In rectifier systems
45 ...Including means for reducing ripples from the output
46 ....With ripple responsive, automatic control
47 ....With low pass L or LC filter
48 .....For semiconductor rectifier
49 .With starting arrangement
50 .Including automatic or integral protection means
51 ..For high voltage D.C. transmission systems
52 ..For rectifiers
53 ...Semiconductor type
54 ....Thyristor
55 ..For inverters
56 ...Semiconductor type
57 ....Thyristor
58 .....Bridge
59 .With voltage multiplication means (i.e., V out > V in)
60 ..Including semiconductor means
61 ...For rectifying
62 .With voltage division by storage type impedance (i.e., V out < V in)
63 .With means to selectively provide D.C. of either polarity
64 .With interphase transformer
65 .Having plural converters for single conversion
66 ..Including plural anodes and single cathode (e.g., vapor arc device)
67 ..Plural rectifiers
68 ...In series (e.g., series SCR's, bridge circuits, etc.)
69 ...In parallel
70 ....Including semiconductor device
71 ..Plural inverters
72 ...Master-slave
73 .Constant current to constant voltage or vice versa
74 .With condition responsive means to control the output voltage or current
75 ..Including inductive integral sensing and control means (e.g., ferroresonant circuit)
76 ..Including integral sensing and control means for rectifier
77 ...With semiconductor conversion means
78 ..Cooperating separate sensing and control means
79 ...Including plural sensing or control means
80 ....With transistor as control means in the line circuit
81 ....By rectifier
82 .....With inductive control means in the line circuit
83 .....With electron tube or valve as control means in the line circuit
84 ...For rectifier system
85 ....With thyristor control means in the line circuit
86 .....External to rectifier (e.g., pre or post regulation)
87 .....For plural phase to D.C. rectifier
88 .....For full wave rectifier with at least 1 three electrode device
89 ....With transistor control means in the line circuit
90 ....With inductive control means in the line circuit
91 .....Saturable reactor (e.g., magnetic amplifier)
92 ......In plural phase to D.C. system
93 ......With plural control windings
94 ....With electron tube or valve control means in the line circuit
95 ...For inverter
96 ....With thyristor control means in the line circuit
97 ....With transistor control means in the line circuit
98 .....For bridge-type inverter

CURRENT CONVERSION
.With condition responsive means to control the output voltage or current
..Cooperating separate sensing and control means
...For inverter
99 ....With electron tube or valve control means in the line circuit
100 .With manual control of the output voltage or current
101 .With auxiliary bucking or boosting EMF
102 .Using dynamoelectric machine converter
103 ..Plural collector type
104 ...Having plural field windings
105 ...Having auxiliary motor drive
106 .By circuit interrupter type
107 ..Rotating
108 ...Rectifier (i.e., A.C.-D.C.)
109 ...Inverter (i.e., D.C.-A.C.)
110 ..Vibrating
111 .Using electronic tube converter
112 ..With gap in open atmosphere
113 ..With cathode element control
114 ..In rectifier systems
115 ...With retarding or delaying control means
116 ...With discharge control means (e.g., grid)
117 ....D.C. bias control
118 ....Phase angle control
119 ....Particular waveform grid excitation
120 ..In inverter systems
121 ...With discharge control means (e.g., grid)
122 ....Grid-like electrode
123 .Using semiconductor-type converter
124 ..In chopper converter systems
125 ..In rectifier systems
126 ...Diode
127 ...Transistor
128 ...Thyristor
129 ....Plural phase to D.C.
130 ....With magnetic control means
131 ..In transistor inverter systems
132 ...Bridge type
133 ...Double ended (i.e., push-pull) type
134 ....Separately driven
135 ..In thyristor inverter systems
136 ...Bridge type
137 ....D.C. to plural phase
138 .....With commutation means
139 ...Double ended (i.e., push-pull) type
140 .Using impedance-type converter
141 .With cooling means
142 .With means to connect the input to diverse power sources
143 ..110/220 Volts A.C. in, constant 110 Volts D.C. out
144 .With conductive support mounting
145 ..Adapted for use with alternators
146 .Encased in plug housing
147 .Integrated circuit
148 PHASE CONVERSION (Ph1-Ph2) WITHOUT INTERMEDIATE CONVERSION TO D.C.
149 .With automatic voltage magnitude or phase angle control
150 .By dynamoelectric machine converter
151 .By electron tube converter
152 .By induction-type converter
153 ..Transformer type
154 ...Stationary
155 ....With passive phase shift element
156 .By passive phase shift elements
157 FREQUENCY CONVERSION (f1-f2) WITHOUT INTERMEDIATE CONVERSION TO D.C.
158 .By varactor
159 .By semiconductor converter
160 ..Thyristor type
161 ...Positive and negative groups
162 ....Including blanking or inhibiting means
163 ..Transistor type
164 .With automatic voltage magnitude control
165 .With automatic frequency control
166 .By electron tube converter
167 ..With discharge control means
168 ...Including plural anodes and single cathode device (e.g., vapor arc device)
169 ...Thyratron type
170 .By induction-type converter
171 ..Transformer
172 ...Saturable core
173 ..LC circuit
174 ..Dynamoelectric machine
175 ...Motor generator type
176 ...Including induction motor
177 .By circuit interrupter converter
178 MISCELLANEOUS

130	DATA PROCESSING CONTROL SYSTEMS, METHODS OR APPARATUS
131	.Plural processors
132	..Master-slave
133	..Parallel
134	...Shared memory
135	..Hybrid types (analog, digital)
136	..Including sequence or logic processor
137	.Cascade control
138	.Supervisory control
139	..Of analog controllers
140	.Sequential or selective
141	..State of condition or parameter (e.g., on/off)
142	...Position responsive
143	...Time responsive (duration)
144	....With display
145	....Clock-calendar (e.g., time of day)
146	..Operator interface (e.g., display with controls)
147	...Specific programming (e.g., relay or ladder logic)
148	.Optimization or adaptive control
149	..With model
150	...Comparison with model (e.g., model reference)
151	...With adjustment of model (e.g., update)
152	..Specific criteria of system performance
153	...Constraints or limits (e.g., max/min)
154	....Variable
155	....Bidirectional (e.g., oscillatory)
156	....Economic (e.g., cost)
157	...Gain (e.g., tuning)
158	..With perturbation
159	...Test signal
160	..Plural modes
161	...Proportional-integral (P-I)
162	...Proportional - integral - derivative (P-D)
163	...Proportional-derivative (P-D)
164	..Feedforward (e.g., predictive)
165	...Combined with feedback
166	..Rate control
167.01	.Digital positioning (other than machine tool)
172	.Plural variables
173	..Ratio
174	..Positional (e.g., velocity, acceleration)
175	...Positional with nonpositional
176	.Specific compensation or stabilization feature
177	..Lag (e.g., dead time)
178	.Sampled data system
179	..Variable rate
180	.Multiple modes (e.g., digital/analog)
181	..Manual/automatic
182	..Fine/coarse
183	.With specific error signal generation (e.g., up/down counter)
184	.With protection or reliability feature
185	..Warning or alarm
186	..Self-test
187	..Backup/standby
188	.With operator control interface (e.g., control/display console)
189	..Keyboard
190	..Positional (e.g., joy stick)
191	.With preparation of program
192	..Editing/modifying
193	..Playback
194	.With specific algorithm
200	GENERAL PURPOSE PROGRAMMABLE DIGITAL COMPUTER SYSTEMS

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APPLICATIONS

NOTE: Subclasses numbered between 221 and 286.6 are cross reference art collection which exist only in electronic form and searchable only in the CASPIR or APS Messenger systems. CASPIR Term List numbers are shown in brackets for each subclass. Paper copies of all patents in this range are found in subclass 200. A search in subclasses 221-286.6 may be indicated on the file wrapper and appropriate "copies" may be added in this range on the blue slip. When a document is to be added to a subclass in this range a copy must also be added to subclass 200. If a document is to be removed from a subclass in this range please forward a copy of said document to Documentation for processing. Subclasses whose titles contain a single (*) are complete only for patents issued since 1980.

221	.Control systems (21/0)
221.1	..Adaptive (21/1)
221.2	..Model/Simulator (21/2)
221.3	..Learning/Trainable (21/3)
221.4	..Sampled data/Signal processing (21/4)
221.5	..Time sharing/Multiplexing (21/5)
221.6	..Multiple mode (21/6)
221.7	..Testing/Monitoring (21/7)
221.8	..Signal/Function generation (21/8)
221.9	.Process control (21/9)
222	.Machine control (22/0)
222.1	.Environment (22/1)
222.2	.Communication/Data transmission (22/2)
222.3	..Telephone exchange (22/3)
222.4	.Traffic/Vehicular (22/4)
222.5	.Security (22/5)
222.6	.Material/Article handling (22/6)
222.7	..Conveyor system (22/7)
222.8	..Dispensing system (22/8)
222.81	.File maintenance (22/X)
222.82	..Insertion/Deletion/Updating (22/Y)
222.9	..Sorting/Merging (22/9)
223	.Scientific (23/0)
223.1	..Aeronautics/Space (23/1)
223.3	..Biology (23/3)
223.4	..Chemistry (23/4)
223.6	..Civil engineering (23/6)
223.7	..Electrical/Electronic engineering (23/7)
223.8	..Earth science (23/8)
223.9	...Seismology (23/9)
224	..Mathematics (24/0)
224.1	...Statistic (24/1)
224.2	...Data analysis (24/2)
224.21	...Random number generation (24/A) *
224.3	...Other specific mathematics application (24/3)
224.4	..Mechanical engineering (24/4)
224.5	..Medical (24/5)
224.6	...Patient monitoring (24/6)
224.7	..Physics (24/7)
224.8	...Optics (24/8)
224.9	...Nuclear (24/9)
224.91	..Other specific scientific application (24/X)
225	.Business (25/0)
225.1	..Accounting (25/1)
225.2	..Banking (25/2)
225.3	..Document analysis (25/3)
225.4	..Document retrieval (25/4)
225.5	...Film (Microfilm, Microfiche, Slide) (25/5)
225.6	..Document or display preparation/Word processing (25/6)

	APPLICATIONS
	.Business (25/0)
	..Document or display preparation/Word processing (25/6)
225.7	...Justification/Hyphenation (25/7)
225.8	...Editing (25/8)
225.9	...Typesetting (25/9)
226	...Photocomposing (26/0)
226.1	...Other specific display preparation (26/1)
226.2	..Education (26/2)
226.3	..Inventory control (26/3)
226.4	..Language translation (26/4)
226.6	..Library (26/6)
226.7	..Manufacturing/Industry (26/7)
226.8	..Public utility (26/8)
226.9	...Electric power (26/9)
227	..Reservation (27/0)
227.1	..Sports/Amusement (27/1)
227.2	..Stock market (27/2)
227.3	..Other specific business application (27/3)
227.4	.Other application (27/4)
	********************
	SYSTEM ARCHITECTURE
228	.Plural processors with different internal structures (28/0)
228.1	.Shared memory (28/1)
228.2	.Virtual processor/machine (28/2)
228.3	.Plural (redundant) central processors (28/3)
228.4	.Central processor combined with terminal processor (28/4)
228.5	.Central processor combined with interface processor (28/5)
228.6	.Central processor combined with coprocessor (28/6) *
228.7	.Multiple instruction multiple data (MIMD) (28/7) *
228.8	..Loosely coupled MIMD (28/8) *
228.9	..Tightly coupled MIMD (28/9) *
229	.Multiprocessor interconnection (29/0)
229.1	..Direct (29/1)
229.2	..Parallel (common bus) (29/2)
229.3	..Loop (29/3)
229.4	..Reconfigurable (29/4) *
229.41	..Tree structure (29/A) *
229.5	..Other specific multiprocessor interconnection (29/5)
230	.Multiprocessor/Processor control (30/0)
230.1	..Priority assignment (30/1)
230.2	..Interrupt handling (30/2)
230.3	..Task assignment (30/3)
230.4	..Supervisory (master/slave) (30/4)
230.5	..Other specific multiprocessor control (30/5)
230.6	.Other specific multiprocessor system (30/6)
231	.Mini/Micro/Personal computer (31/0)
231.1	..Portable (31/1)
231.2	...Hand-held/Carried on person (31/2)
231.3	...Other portable computer (31/3)
231.31	..Other specific mini/micro/personal computer (31/A) *
231.4	.Timeshared (31/4)
231.5	..Peripheral devices (31/5)
231.6	..Plural programs (Multiprogrammed) (31/6)
231.7	..Other specific timeshare (31/7)
231.8	.Pipelined (31/8)
231.9	.Parallel array/Single Instruction Multiple Data (SIMD) (31/9)
232	.Orthogonal (32/0)
232.1	.Virtual (32/1)
232.2	.Adaptive (32/2)
232.21	.Vector processor (32/A) *
232.22	.Data flow (32/B) *
232.23	.Reduced instruction set computer (RISC) (32/D) *
232.3	.Simulator/Emulator (32/3)
232.4	.Hybrid (Analog - Digital) 32/4)
232.5	.Electro-optical (32/5)
232.6	.Magnetic bubble (32/6)
232.7	.Modular (32/7)
232.8	.Integrated circuit/Chip/Microprocessor (32/8)
232.9	.Multiple mode (32/9)
232.91	.Mixed Technologies (32/E) *
232.93	.Other system architecture (32/Y)
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	INPUT/OUTPUT DEVICES
234	.Keyboard/Switch (34/0)
234.1	..Data (34/1)
234.2	..Function (34/2)
234.3	..Program select (34/3)
234.4	..Other specific keyboard/switch (34/4)
235	.Printer (35/0)
235.1	..Bar (35/1)
235.2	..Chain/Belt (32/2)
235.3	..Disc/Drum (35/3)
235.4	..Matrix/Dot (35/4)
235.5	..Single character (35/5)
235.6	..Multiple character (35/6)
235.7	..Other specific printer (35/7)
236	.Typewriter (36/0)
236.1	.Drum storage
236.2	.Disc storage (36/2)
236.3	.Tape storage (36/3)
236.4	..Magnetic (36/4)
236.5	..Paper (36/5)
236.6	..Cartridge/Cassette (36/6)
236.7	..Other specific tape storage (36/7)
236.8	.Mouse (36/8) *
237	.Card reader/Punch (37/0)
237.1	.Pen/Pointer (37/1)
237.2	.Display (37/2)
237.3	..Cathode ray tube (CRT) (37/3)
237.4	..Lights (37/4)
237.5	..Other specific display (37/5)
237.6	.Character recognizer/generator (37/6)
237.7	.Plotter (37/7)
237.8	.Analog/Analog-Digital converter (37/8)
237.81	..Voice (37/A) *
237.82	.Scanning (37/B) *
237.83	..Optical character (37/C) *
237.84	..Magnetic character (37/D) *
237.85	..Bar code (37/E) *
237.9	.Other input/output device (37/9)
	**
	INTERFACING OR COMMUNICATION TECHNIQUE
238	.Multiplex (38/0)
238.1	.Central switch (38/1)
238.2	.Input/Output interface switch (I/O Exchange) (38/2)
238.3	.Input/Output controller (38/3)
238.4	.Memory controller (38/4)
238.5	.Line adapter/Modem (38/5)
238.6	.Buffer structure (38/6)
238.7	..Shift register (38/7)
238.8	..Recirculating (38/8)
238.9	..Other specific buffer structure (38/9)
239	.Buffer/Interface function (39/0)
239.1	..Rate control (39/1)
239.2	..Serial/Parallel conversion (39/2)
239.3	..Formatting/Alignment (39/3)
239.4	..Program/Data control/look ahead (39/4)
239.5	..Alternate load/unload (39/5)
239.51	..Simultaneous load/unload (39/A) *
239.6	..Buffer full/empty (39/6)
239.7	..With input/output buffer (39/7)
239.8	..Other specific buffer function (39/8)
239.9	.Other interfacing (39/9)
240	.Bus (40/0) *
240.1	..Common/parallel (32/X)
240.2	..Plural (40/2) *

INTERFACING OR COMMUNICATION TECHNIQUE

.Bus (40/0) *
240.3 ..Variable width/speed (40/3) *
240.4 ..Decentralized control (40/4) *
240.5 ..Controller (40/5) *
240.6 ..Optical (40/6) *
240.7 ..Switching (40/7) *
240.8 .Protocols (40/8) *
240.9 .Answer back/acknowledge (40/9) *
241 .Direct polling (41/0)
241.1 .Loop polling (41/1)
241.2 .Priority interrupt (41/2)
241.3 ..Fixed (41/3)
241.4 ..Variable (41/4)
241.5 ..Multilevel (41/5)
241.6 ..Other priority interrupt (41/6)
241.7 .Mailbox (41/7) *
241.8 .Token passing (41/8) *
241.9 .Port/channel (41/9) *
242 .Time controlled interrupt (42/0)
242.1 .Condition/Mode controlled interrupt (42/1)
242.2 .Queued/Tabled interrupt (42/2)
242.3 .Direct access/DMA (42/3)
242.31 ..DMA control/operation (42/A) *
242.32 ...Multimode (42/B) *
242.33 ...Plural (42/C) *
242.34 ...Other DMA control/operation (42/D) *
242.4 .Real time (42/4)
242.6 .Arbitration (42/6) *
242.7 ..Fixed priority (42/7) *
242.8 ..Variable/dynamic priority (42/8) *
242.9 ..Multilevel (42/9) *
242.91 ..Memory (42/E) *
242.92 ..Bus (42/F) *
242.93 ..Other arbitration (42/G) *
242.94 .Networking (42/H) *
242.95 ..Local area network (LAN) (42/J) *
242.96 ..Other networking (42/K) *
242.5 .Other communication technique (42/5)
****

STORAGE SYSTEM

243 .Plural memory configuration (43/0)
243.1 ..Plural main memories (43/1)
243.2 ..Main memory with external bulk store (43/2)
243.3 ..Data store with program store (43/3)
243.4 ..Fast and slow (cache) (43/4)
243.41 ...Cache (43/A) *
243.42 ....Instruction (43/B) *
243.43 ....Bypass (43/C) *
243.44 ....Plural (43/D) *
243.45 .....Multilevel (43/E) *
243.5 ..Main memory with Input/Output store (43/5)
243.6 ..With multiplex access (43/6)
243.7 ..Other specific plural memory configuration (43/7)
244 .Single memory configuration (44/0)
244.1 ..Compound type (44/1)
244.2 ..Logic-in-memory cell type (44/2)
244.3 ..Queue/stack (44/3)
244.4 ..Recirculating (44/4)
244.5 ..Shifting (44/5)
244.6 ..Read-Only-Memory (ROM)/Microprogram (44/6)
244.8 ..Multiport (44/8) *
244.9 ..PLA/PAL (44/9) *
244.7 ..Other specific single memory configuration (44/7)
245 .Storage reconfiguration (45/0)
245.1 ..Variable length (45/1)
245.2 ..Relocatable (45/2)
245.3 ..Defective storage substitution (45/3)
245.31 ..Expansion (45/A) *
245.4 ..Other Specific storage configuration (45/4)
245.5 .Storage dedication (45/5)
245.6 ..To input/output device (45/6)
245.7 ..To processor (45/7)
245.8 ..To user (45/8)
245.9 ..Other specific storage dedication (45/9)
246 .Storage assignment (46/0)
246.1 ..Priority resolution between memories (46/1)
246.11 ...Swapping (46/B) *
246.12 ....Least recently used (46/C) *
246.13 ....Most recently used (46/D) *
246.2 ..Priority resolution within single memory (46/2)
246.3 ..Mapped/Partitioned/Segmented (46/3)
246.4 ..Interleaved (46/4)
246.5 ..Other specific storage assignment (46/5)
246.6 .Storage protection (46/6)
246.7 ..Comparison of boundary addresses (46/7)
246.8 ..Locked/unlocked (46/8)
246.9 ..Other specific storage protection (46/9)
246.91 .Refresh (46/A) *
247 .Register (47/0) *
247.1 ..Accumulator (47/1) *
247.2 ..Address (47/2) *
247.3 ..Condition code/flag/status (47/3) *
247.4 ..Data (47/4) *
247.5 ..Index (47/5) *
247.6 ..Instruction (47/6) *
247.7 ..Stack pointer (47/7) *
247.8 ..Other specific register (47/8) *
246.92 .Other specific storage system (46/X)
****

STORAGE ELEMENTS

248 .Drum (48/0)
248.1 .Disk (48/1)
248.2 .Tape (48/2)
248.3 .Core (48/3)
248.4 .Thin film (48/4)
248.5 .Bubble (48/5)
248.6 .Delay line (48/6)
248.7 .CRT storage tube (48/7)
248.8 .Cryogenic (48/8)
249 .Semiconductor (49/0)
249.1 ..Charge coupled type (49/1)
249.2 ..Integrated circuit (49/2)
249.3 ..Other specific semiconductor storage (49/3)
249.4 .Optical (49/4)
249.5 ..Hologram (49/5)
249.6 ..Other specific optical storage (49/6)
249.7 .Capacitative (49/7)
249.8 .Other specific storage element (49/8)
****

STORAGE ACCESSING/ADDRESSING

251 .Sequential (51/0)
251.1 ..Unit increment/decrement (51/1)
251.2 ..Nonunit increment/decrement (51/2)
251.3 ..Counter controlled (51/3)
251.4 ..Timer controlled (51/4)
251.5 ..Chained (51/5)
251.6 ..Tree structure (51/6)
251.7 ..Other specific sequential accessing/addressing (51/7)
252 .Random (52/0)
252.1 ..Shortest distance (52/1)
252.2 ..Other specific random accessing/addressing (52/2)
252.3 .Key/Partial (52/3)
252.4 ..Key (52/4)
252.5 ..Masking (52/5)
252.6 ..Word byte/Field (52/6)
252.7 ..Other specific key/partial accessing/addressing (52/7)
253 .Associative (53/0)
253.1 ..Matching data (53/1)

STORAGE ACCESSING/ADDRESSING

.Associative (53/0)
253.2 ..User (53/2)
253.3 ..Other specific associative accessing/addressing (53/3)
254 .Group (54/0)
254.1 ..Multiple instruction per word (54/1)
254.2 ..Multiple location per access (54/2)
254.3 ..Block/Page (54/3)
254.4 ..Chip/Module (54/4)
254.5 ..Queue/Stack (54/5)
254.6 ..Linked (54/6)
254.7 ..Other specific group accessing/addressing (54/7)
254.8 .Multiple mode (54/8)
254.9 .Variable length (54/9)
255 .Substituted (55/0)
255.1 .Address modification (55/1)
255.2 ..Indexing (55/2)
255.3 ..Prefixing (55/3)
255.4 ..Bit insertion (55/4)
255.5 ..Base and Segment/Tag and Set (55/5)
255.7 ..Table lookup (55/7)
255.8 ..Other specific address modification (55/8)
256 .Complementary (56/0)
256.1 ..Digit (56/1)
256.2 ..Other specific complementary accessing/adressing (56/2)
256.3 .Virtual (56/3)
256.4 ..Table lookup (56/4)
256.5 ..Converted (56/5)
256.6 ..Other specific virtual accessing/addressing (56/6)
256.8 .Other specific storage accessing/addressing (56/8)

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OPERATIONAL CONTROL

258 .Arithmetical (58/0)
258.1 ..Add/Substract (58/1)
258.2 ..Multiply (58/2)
258.3 ..Divide (58/3)
258.4 ..Other specific arithmetical operation (58/4)
259 .Logical (59/0)
259.1 ..AND/OR/Other (59/1) *
259.2 ..Compare (59/2)
259.3 ..Sense (59/3)
259.4 ..Special character detection (59/4)
259.5 ..Shift (59/5)
259.7 ..Masking (59/7)
259.8 ..Bit manipulation (59/8)
259.9 ..Decoding (59/9) *
259.6 ..Other specific logical operational control (59/6)
260 .Data transfer (60/0)
260.1 ..External (60/1)
260.2 ..Internal (60/2)
260.3 ..Other specific data transfer (60/3)
260.4 .Transform (60/4)
260.5 ..Invert (60/5)
260.6 ..Compress/Expand (60/6)
260.7 ..Pack/Unpack (60/7)
260.8 ..Set/Reset (60/8)
260.81 ..Encryption/decryption (60/C) *
260.9 ..Other specific transform operation (60/9)
261 .Modify (61/0)
261.1 ..Command (61/1)
261.2 ..Other specific modify operation (61/2)
261.3 .Branching (61/3)
261.4 ..Unconditional (61/4)
261.5 ..Conditional (61/5)
261.6 ..Trap (61/6)
261.7 ..Look ahead (61/7)
261.8 ..Timed (61/8)
261.9 ..Other specific branching operation (61/9)
262 .Repeating (62/0)
262.1 ..Iterated function (62/1)
262.2 ..Error detection (62/2)
262.3 ..Other specific repeating operation (62/3)
262.4 .Instruction sequence (62/4)
262.5 ..Chaining/Linking (62/5)
262.6 ..Fixed (Hardwired) (62/6)
262.7 ..Macro instructions (62/7)
262.8 ..Micro instructions (62/8)
262.81 ..Variable width (62/C) *
262.9 ..Other specific instruction sequence operation (62/9)
263 .Instruction Execution Overlap (63/0)
263.1 .Instruction Lookahead (Prefetch) (63/1)
263.2 .Instruction Interrupt (Internal) (63/2)
263.3 .Other specific operational control (63/3)

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PERFORMANCE MONITORING

264 .Anticipate/Monitor (64/0)
264.1 ..Internal/Condition code (64/1)
264.2 ..External criteria (64/2)
264.3 ..Simulated (64/3)
264.4 ..Statistical (64/4)
264.5 ..With control response (64/5)
264.6 ..Status/Busy/Idle (64/6)
264.7 ..Other specific performance anticipate/monitor (64/7)
265 .Error detection (65/0)
265.1 ..Data transmission (65/1)
265.2 ..Data encoding/decoding (65/2)
265.3 ..Storage/Addressing (65/3)
265.4 ..Arithmetic/Logic (65/4)
265.5 ..Input/Output (65/5)
265.6 ..Execution/Sequencing control (65/6)
266 ..Monitoring/Error circuitry (66/0)
266.1 ..Of synchronization error (66/1)
266.2 ..Intermittent/Transient error (66/2)
266.3 ..By parity/validity check (66/3)
266.4 ..By comparison with expected result (66/4)
266.5 ..With automatic error recovery (66/5)
266.6 .Other specific error detection (66/6)
267 .By Diagnostic/Tracing routing (67/0)
267.1 ..Scheduled/Periodic (67/1)
267.2 ..Real time (67/2)
267.3 ..With repeated operation (67/3)
267.4 ..Program controlled (67/4)
267.5 ..Operation controlled (67/5)
267.6 ..Hardware controlled (67/6)
267.7 ..With fault isolation (67/7)
267.9 ..Watchdog timer (67/9) *
267.91 ..Debugging (67/A) *
267.8 ..Other specific diagnostic/tracing routine (67/8)
268 .Alternate/Backup (68/0)
268.1 ..Concurrent (Realtime) (68/1)
268.2 ..Periodic (68/2)
268.3 ..Redundant element (68/3)
268.4 ...Arithmetic/Logic unit (68/4)
268.5 ...Memory/Sector (68/5)
268.6 ...Input/Output (68/6)
268.7 ...Channel (68/7)
268.8 ...Other specific redundant element (68/8)
268.9 ..Fault tolerant (68/9) *
269 ..Synchronization of systems/elements (69/0)
269.1 ..With majority vote for output (69/1)
269.2 ..With substitution for faulty element (69/2)
269.3 ..Other specific alternate/backup (69/3)
269.4 .Other specific performance monitoring (69/4)

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TIMING OF PROCESSING SYSTEM

270 .Interval/Clock generation (70/0)

	TIMING OF PROCESSING SYSTEM
	.Interval/Clock generation (70/0)
270.1	..Fixed (70/1)
270.2	..Variable (70/2)
270.3	..Multiple (70/3)
270.4	..Other specific time interval generation (70/4)
270.5	.Asynchronous time control (70/5)
270.6	..Between processor and input/output (70/6)
270.7	..Between processors (70/7)
270.8	..Within processor (70/8)
270.9	..Other specific asynchronous time control (70/9)
271	.Synchronous time control (71/0)
271.1	..Of external device (71/1)
271.2	..Of plural processors (71/2)
271.3	..Of plural programs (71/3)
271.4	..Other specific synchronous time control (71/4)
271.5	.Time delay (71/5)
271.6	.Cycle control (71/6)
271.7	..Cycle steal (71/7)
271.8	..Other specific cycle control (71/8)
271.9	.Other specific timing (71/9)
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	POWER SYSTEM CONTROL
273	.Sequenced/Programmable (73/0)
273.1	.Reduction (73/1)
273.2	.On demand (73/2)
273.3	.Partial (73/3)
273.4	.Failure (73/4)
273.5	.Other specific power system control (73/5)
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	ARTIFICIAL INTELLIGENCE
274	.Artificial intelligence (AI) (74/0) *
274.1	..Software (74/1) *
274.2	...Expert system (74/2) *
274.3	....Knowledge based (74/3) *
274.4	.....Model based (74/4) *
274.5	.....Rule based (74/5) *
274.6	......Fuzzy logic (74/6) *
274.7	....Rule interpreter/inference engine (74/7) *
274.71	....Other specific expert system (74/A) *
274.8	...Natural language (74/8) *
274.9	...Neural net (74/9) *
275	...Specific programming language (75/0) *
275.1	...Application (75/1) *
275.2	....Control (75/2) *
275.3	.....Manufacturing/robotic (75/3) *
275.4	.....Vehicle control/navigation (75/4) *
275.5	....Debugging (75/5) *
275.6	....Design/CAD/CAE (75/6) *
275.7	....Diagnosis/medical/electronic (75/7) *
275.8	....Instruction (75/8) *
275.9	....Interpretation/speech/pattern recognition (75/9) *
276	....Monitoring (76/0) *
276.1	....Planning (76/1) *
276.2	....Prediction/weather (76/2) *
276.3	....Repair (76/3) *
276.4	....Other specific application (76/4) *
276.5	..Hardware (76/5) *
276.6	...Neural net (76/6) *
276.7	...Single processor (76/7) *
276.8	...Plural processors (76/8) *
276.9	...Specific memory technique (76/9) *
277	.Other artificial intelligence (77/0) *
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	SYSTEM MANAGEMENT (SOFTWARE)
280	.Operating system (80/0) *
280.1	..Assembler/disassembler (80/1) *
280.2	..Booting/initialization (80/2) *
280.3	...Restart (80/3) *
280.4	..Compiler/translator (80/4) *
280.5	...Optimizing (80/5) *
280.6	..Distributed (80/6) *
280.7	..Editor (80/7) *
280.8	..Interrupt handler (80/8) *
280.9	..Kernel/BIOS (80/9) *
281.1	..Memory reclamation/garbage collection (81/1) *
281.3	..Process (task) management (81/3) *
281.4	...Concurrent (81/4) *
281.5	...Dead lock (81/5) *
281	...Load blancing (81/0)
281.6	....Resource allocation (81/6) *
281.7	...Multitasking/multiprogrammed (81/7) *
281.8	...Scheduling/Dynamic (81/8) *
281.9	..System reconfiguration after fault (81/9) *
282	..Test and set (82/0) *
282.1	.Data base (82/1) *
282.2	..Allocation/deallocation (82/2) *
282.3	..Directory structure (82/3) *
282.4	..Distributed (82/4) *
283.1	..File organization (83/1) *
283.2	..Hierarchical (83/2) *
283.3	..Interactive (83/3) *
283.4	..Relational (83/4) *
284	.Communication (84/0) *
284.1	..Buffering (84/1) *
284.2	..Input/output (84/2) *
284.3	..Message sending (84/3) *
284.4	..Network communication (84/4) *
285	.Reliability (85/0) *
285.1	..Backup procedures (85/1) *
285.2	..Checkpoint/restart (85/2) *
285.3	..Fault tolerance (85/3) *
285.4	..Verification (85/4) *
286	.Program management (86/0) *
286.1	..Prompting (86/1) *
286.2	...Menu driven (86/2) *
286.3	..Window/split screen (86/3) *
286.4	..Security (86/4) *
286.5	...Access/authentication (86/5) *
286.6	...Copy protection (86/6) *
400	APPLICATIONS
401	.Business practice and management
402	..Operations research
403	..Inventory
404	...With cash register
405	..Cash register
406	..Accounting
407	..Reservations
408	..Finance (e.g., securities, commodities)
409	.Government activities (e.g., voting, law enforcement)
410	.Games and amusements
411	..Scoring
412	..Wagering
413.01	.Life sciences
413.02	..Patient monitoring or diagnostics
413.03	...Vital signs (e.g., respiration, temperature, blood pressure, pulse)
413.04	....Physiological conditioning system
413.05	...Wave or rhythm
413.06	....Electrocardiogram
413.07	...Blood
413.08	....Blood cell analysis
413.09	....Blood chemistry (e.g., oxygen level)
413.1	...Cellular composition or activity
413.11	...Body chemistry (e.g., urine analysis)
413.12	...Fertility cycle
413.13	..Medical imaging
413.14	...Computed tomography using x-ray
413.15	....Particular data acquisition technique
413.16	....Particular projection data set creation technique

	APPLICATIONS
	.Life sciences
	..Medical imaging
	...Computed tomography using x-ray
	....Particular projection data set creation technique
413.17	.....Weighting factors
413.18	.....Interpolated or extrapolated data
413.19	....Particular image reconstruction technique
413.2	.....Fourier transformation
413.21	.....Convolution or back projection
413.22	....Image display
413.23	...Subtraction radiography using x-ray
413.24	...Including gamma camera system
413.25	...Using ultrasound
413.26	..Radiation detection or treatment
413.27	..For control of bodily function (e.g., muscle stimulation)
413.28	..Dental
413.29	..Diet
413.3	..Survival in hostile environment
413.31	...Diving decompression analysis
419	.Social sciences (e.g., linguistics, documentation, humanities)
420	.Earth sciences (e.g., weather)
421	..Seismology
422	..Well logging
423	.Military applications
424.01	.Vehicle guidance, operation, or indication
424.02	..Automatic route guidance system
424.03	..Vehicle maintenance or diagnostic
424.04	...With data recording device
424.05	..Vehicle accessory control
424.06	..Flight condition indicating system
424.07	..Construction or agricultural vehicle type (e.g., crane, forklift)
424.1	..Control of transmission
425	..Engineering of vehicles
426.01	..With indication or control of braking, acceleration or deceleration
426.02	...Antiskid/antilock
426.03	...Antispin
426.04	...Road vehicle speed control
426.05	...Railway vehicle speed control
427	..With indication or control of take-off
428	..With indication or control of landing
429	...I.L.S. or radar guidance
430	...Profile of descent
431.01	..Indication or control of power plant (e.g., performance)
431.02	...Gas turbine, compressor
431.03	...Internal combustion engine
431.04	....Digital or programmed data processor
431.05	.....Air/fuel ratio, injection, optimization
431.06	......Exhaust gas recirculation (EGR)
431.07	.....Speed, acceleration, deceleration
431.08	.....Vibration, roughness, knock
431.09	.....Engine stop, fuel shutoff
431.1	.....Starting, warmup
431.11	.....Backup, interrupt, reset or test
431.12	.....Specific memory or interfacing device
432	..With indication or control to maintain fixed position
433	..With indication or control of altitude/depth or rate of ascent or descent
434	..With indication or control of vehicle attitude
435	...Angle of attack
436	..Traffic analysis or control of surface vehicle
437	...With determination of traffic density
438	...With determination of traffic speed
439	..Traffic analysis or control of aircraft
440	...With speed control or order
441	...With course diversion
442	..With indication of fuel consumption rate or economy of usage
443	.Navigation
444	..Determination of course or distance from present position to destination
445	...Great circle route
446	..Determination of E.T.A.
447	..Determination of along-track or cross-track deviations
448	..Employing way point navigation
449	..Employing position-determining equipment
450	...Using dead-reckoning apparatus
451	...Using R-O (D.M.E. and path) or Tacan equipment
452	...Using Loran or Shoran or Decca equipment
453	...Using inertial sensor
454	....With correction by noninertial sensor
455	...Using star tracker
456	...With radar or optical ground scanner
457	..With indicated course correction (compass deviation)
458	..Determining range without range measurement
459	..Space orbits or paths
460	.Relative location
461	..Collision avoidance
462	..Course to intercept
463	.Determining balance or center of gravity (e.g., load distribution of vehicle)
464.01	.For cost/price
464.02	..Postage meter system
464.03	...Including mailed item weight
464.04	..Utility usage
465	..Fluid
466	..Weight
467	..Distance or time (e.g., taximeters)
468	.Product manufacturing
469	..Continuous material processing
470	...Textiles
471	...Paper products
472	...Metals
473	...Glass, plastic, and rubber
474.01	..Machining
474.02	...With particular tool or tool operation
474.03	....Tracing or duplicating
474.04	....Electrical discharge machining (EDM)
474.05	....3-D sculpturing using nontracing prototype sensor
474.06	....Grinding
474.07	....Bending (e.g., press brake)
474.08	....Laser
474.09	...Of elongated material (e.g., timber, veneer, web)
474.1	...Portable (e.g., hand-held)
474.11	...Supervisory control (e.g., plural tools or plural processors)
474.12	...Having particular control of a motor parameter
474.13	...Material usage optimization
474.14	...Multiple mode (e.g., rough-finish, coarse-fine)
474.15	...Adaptive (optimizing) system
474.16	...Performance monitoring
474.17	....Condition of tool or workpiece (e.g., tolerance, tool wear)
474.18	.....Offsetting
474.19	....Protective or diagnostic feature
474.2	.....Tool/workpiece interference prevention

	APPLICATIONS
	.Product manufacturing
	..Machining
474.21	...Tool selection/change
474.22	...With operator interface feature
474.23	....Specific programming format (e.g., macro)
474.24	....Including cad, cam, or cim, technique
474.25	....Preset pattern
474.26	....Machining path display
474.27	....Prompting technique
474.28	...Digital positioning technique
474.29	....For curve or contour
474.3	....Including velocity or acceleration control
474.31	....Interpolation
474.32	....Specified tool feed path at entry or withdrawal
474.33	.....Repeated machining passes
474.34	....Alignment of tool or workpiece (e.g., origin or path return)
474.35	....Positional compensation or modification
474.36	...Coordinate transformation technique
474.37	...With particular measuring device (e.g., probe)
476	..Pressing or molding
477	..Heating, sintering, or melting
478	.Article handling or distribution
479	..Dispensing
480	.Electrical/electronic engineering
481	..Measuring or testing
482	...Impedance
483	...Voltage, current, or power
484	...Frequency
485	....Frequency spectrum
486	...Pulse
487	...Waveform
488	..Design and analysis
489	...Circuits
490	....Integrated
491	.....Layout
492	..Power generation or distribution
493	...Economic dispatching
494	...Turbine or generator control
495	...With model
496	.Chemical and Engineering Sciences
497	..Chemical analysis
498	...Spectrum analysis (composition)
499	...Chemical property
500	..Chemical process control
501	...Distillation
502	...Physical mixing or separation
503	...Kilns
505	..Mechanical and civil engineering
506	...Measuring and testing
507	....Flaw or defect
508	....Stress, strain, or vibration
509	....Fluid
510	.....Fluid flow
511	....Power
512	...Structural design
513	.Artifical intelligence (e.g., speech and signal conditioning, self-organizing robot control)
513.5	..Speech signal processing
514	.Communication engineering (e.g., pictorial and pulse communication)
516	..Object detection or tracking
517	...Signal evaluation (target or noise)
518	.Control of data presentation
519	..Of line printer
520	..Of X-Y plotter
521	..Of CRT
522	...With perspective presentation
523	..For photocomposition or typesetting
524	.Physics
525	..Optics or photography
526	...Color analysis
527	..Atomic or nuclear physics
550	MEASURING, TESTING, OR MONITORING
551.01	.Measuring and evaluating (e.g., performance)
551.02	..Of machine tool
552	..Quality control determinations
553	..Transfer function evaluation
554	..Statistical data (e.g., stochastic variable)
555	..Particle count, distribution, size
556	.For basic measurements
557	..Temperature
558	..Pressure or density
559	..Orientation
560	..Dimension
561	...Distance
562	....Length or height
563	....Width or thickness
564	...Area or volume
565	..Rate of change of dimension (e.g., speed)
566	..Acceleration and further derivatives
567	..Weight
568	...Basis weight
569	..Time or time intervals
570	.Operations performed
571.01	..Calibration or compensation
571.02	...Having mathematical operation on initial measurement data
571.03	....Including environmental factors (e.g., temperature)
571.04	....Including predetermined stored data
571.05	....Using difference involving initial measurement data
571.06	....Using analog calculating elements
571.07	...By table look-up
571.08	...Using operator provided data
572	..Filtering
573	..Linearization
574	..Noise reduction
575	..Averaging
576	..Fourier analysis
577	..Interpolation/extrapolation
578	..Simulation or modeling
579	..With control of testing or measuring apparatus
580	..Programmed testing conditions
581	..Weighting
582	..Normalization
600	ELECTRIC HYBRID COMPUTER
601	.Plural complete computers
602	.Specialized function performed
603	..Evaluation of trigonometric functions
604	..Correlation, convolution, or transformation
605	..Integration or differentiation
606	..Multiplication or division
607	..Function generation
608	...Piece-wise linear synthesis
700	ELECTRIC DIGITAL CALCULATING COMPUTER
701	.Pulse repetition rate
702	..Digital differential analyzer
703	..Multiplication or division
704	.Plural complete computers
705.01	.Combined with diverse art device
705.02	..Checkbook
705.03	..Writing instrument (e.g., pen)
705.04	..Tape recorder
705.05	..Communication device (e.g., telephone, radio, television)
705.06	..Business device (e.g., billing, memorandum)
705.07	..Horological device
705.08	...Calendar
706	.Programmable calculator
707	.With power saving feature

ELECTRIC DIGITAL CALCULATING COMPUTER

708	.With specialized housing or casing
709.01	.With specialized input
709.02	..Having supplemental environment related input
709.03	...Cooking
709.04	...Business
709.05	..For security
709.06	..Input verification
709.07	..Fraction input
709.08	..Flexible input
709.09	..Including specific computing system interconnection
709.1	..Modular or overlay
709.11	..Including specific nonkeyboard type information entry
709.12	..Including specific keyboard type information entry
709.13	...Nonmechanical key actuation
709.14	...User definable key
709.15	...Plural function key
709.16	...Key sequencing (i.e., sequence defines function)
710.01	.With specialized output
710.02	..Having supplemental environment related output
710.03	...Teaching
710.04	...Business
710.05	..Output verification
710.06	..Blanking
711	...Zero suppression
710.07	..Prompting
710.08	..Selective output
710.09	..Sequential output
710.1	..Using particular format
710.11	..Symbol accompanying output
710.12	..Audio
710.13	..Printer
710.14	..Multiple simultaneous outputs
712	.Integrated circuit
713	.Electro-optical
714	.Bubble-domain
715.01	.Specialized function performed
715.02	..Compression/decompression
715.03	..Format conversion
715.04	...Normalization
715.05	..Unit conversion
715.06	..Maximum/minimum determination
715.07	..Scaling
715.08	..Shifting
715.09	..Determining number of like-valued bits in word
715.1	..Determining number of like-valued leading or trailing bits
715.11	..Detecting particular sequence of bits
716	..Multifunctional
717	..Random number generation
717.5	..Number sequence generation
718	..Function generation
719	...Linear
720	...Circular
721	...Trigonometric
722	...Logarithmic/exponential
723	..Interpolation/extrapolation
724.01	..Filtering
724.02	...Initialization
724.03	...Finite arithmetic effects
724.04	...Delta/differential coded
724.05	...Multi-dimensional data
724.06	...Frequency measurement
724.07	...Coherent
724.08	...Frequency detection
724.09	....Tone detection
724.1	...Decimation/interpolation
724.11	...Matched filter type
724.12	...By convolution
724.13	...With multiplexing
724.14	...Wave
724.15	...Lattice
724.16	...Transversal
724.17	...Recursive
724.18	...Nontime domain
724.19	...Adaptive
724.2	....Equalizer
725	..Transforms
726	...Fourier
727	...Walsh
728.01	..Convolution
728.02	...Cyclic/circular
728.03	..Correlation
728.04	...Single bit data
728.05	...Multi-dimensional data
728.06	...Using tapped delay line
728.07	...Autocorrelation
729	..Evaluation of trigonometric functions
730	...Vector resolver
731	..Coordinate conversion
732	..Differentiation
733	..Integration
734	..Averaging
735	..Solving equations
736	..Arithmetical operations
736.5	...Status condition/flag generation or use
737	...Error detection or correction
738	....Parity check
739	....Residue code
740	....Sequential repetition
741	....Plural parallel devices
742	...Cathode-ray tube
743	...Contact-making device
744	...Radix point control
745	...Precision-round off
746	...Residue numbers
746.1	...Galois field
746.2	...Multi-valued
747	...Incremental mode
748	...Floating point
748.5	...Logarithmic format
749	...Variable length
750	...Negative radix
750.5	...Sum of products generation
751	...All four basic functions
752	...Evaluation of roots
753	...Evaluation of powers
754	...Multiplication
755	....Decimal
756	....Coded decimal
757	....Binary
758	.....Sum of cross products
759	.....Repeated addition
760	......Multiple digit
761	...Division
762	....Decimal
763	....Coded decimal
764	....Binary
765	.....Multiplication by reciprocal
766	.....Repeated subtraction
767	......Multiples of divisor
768	...Addition/subtraction
769	....Comparison
770	....Incrementation/decrementation
771	....Radix correction
772	.....Serial
773	....Signal amplitude
774	....Microwaves
775	....Cryogenic
776	....Tubes
777	....Magnetic
778	....Decimal
779	.....Serial
780	.....Parallel
781	....Coded decimal
782	.....Serial
783	.....Parallel
784	....Binary

	ELECTRIC DIGITAL CALCULATING COMPUTER
	.Specialized function performed
	..Arithmetical operations
	...Addition/subtraction
	....Binary
785	.....Serial
786	.....Parallel
787	......Carry look-ahead
788	......Conditional sums
800	ELECTRIC ANALOG COMPUTER
801	.Simulator
802	..Of electrical phenomenon, devices, or systems
803	..Of fluid phenomenon, devices, or systems
804	...Wells
805	..Of vehicles, parts thereof, or traffic
806	..Of physical phenomenon (e.g., nuclear, heat, waves, geophysics)
807	.Specialized function performed
808	..Evaluation of equations
809	...Simultaneous
810	...Differential (e.g., differential analyzers)
811	..Averaging
812	..Variance or standard deviation determination
813	..Evaluation of powers
814	..Evaluation of roots (e.g., square roots)
815	..Coordinate conversion or vector resolver
816	...Electromechanical
817	..Evaluation of trigonometric functions
818	...Single triangle
819	..Correlation or convolution
820	...Of multidimensional data
821	...Acoustic
822	...Optical
823	...Magnetic or electromagnetic
824	...With tapped delay line
825	..Filtering
826	..Transforms
827	...Fourier
828	..Differentiation
829	..Integrators
830	...Plural integration
831	...Plural mode (e.g., plural scale)
832	...Reset
833	...Drift correction
834	...With simultaneous calculation of another function
835	...With a voltage to frequency converter
836	...Electromechanical
837	...Electro-optical
838	...Magnetic or electromagnetic
839	...Amplifier with additional feedback loop
840	....Additional R/C feedback loop
841	..Multiplication
842	...Time division
843	...Quarter-square
844	...With charging or discharging of energy storage device
845	...Photomultipliers
846	...Electromagnetic
847	....Hall effect
848	...Electromechanical (e.g., servomultipliers)
849	...With alternative division
850	..Division
851	..Function generation
852	...Piece-wise linear synthesis
853	....Interpolation/extrapolation
854	....Diode breakpoint
855	...Cathode-ray tube
856	...Tow or more variables
857	...Logarithmic/exponential
858	...Triangular, sawtooth, or ramp
859	...Hyperbolic
860	...Electromechanical
861	.Specialized apparatus
862	..Analog store (e.g., charge transfer)
863	..Bridge or symmetrical circuit
864	..Saturable-reactive device (e.g., magnetic amplifier)
900	MISCELLANEOUS DIGITAL DATA PROCESSING SYSTEMS

APPLICATION

NOTE: Subclasses numbered between 916 and 971.1 are cross reference art collections which exist only in electronic form and are searchable only in the CASPIR or APS Messenger systems. CASPIR Term List numbers are shown in brackets for each subclass. Paper copies of all patents in this range are found in subclass 900. A search in subclasses 916-971.1 may be indicated on the file wrapper and appropriate "copies" may be added in this range on the blue slip. When a document is to be added to a subclass in this range a copy must also be added to subclass 900. If a document is to be removed from a subclass in this range, please forward a copy of said document to Documentation for processing. Subclasses whose titles contain a single (*) are complete only for patents issued since 1980.

916	.Adaptive (16/0)
916.1	..Bionic (16/1)
916.2	..Learning/Trainable (16/2)
916.3	..Model/Simulator (16/3)
916.4	..Other specific adaptive application (16/4)
916.5	.Amusement/Sport (16/5)
917	.Article manufacturing (17/0)
917.1	..Assembly/test (17/1)
917.2	...Successive stations or operation (17/2)
917.3	..Pattern scaling/design (17/3)
917.4	..Other specific article manufacturing (17/4)
917.5	.Article/Material handling (17/5)
917.6	..Conveying (17/6)
917.7	..Dispensing (17/7)
917.8	..Storage (17/8)
917.9	..Other specific article/material handling (17/9)
917.96	.CAD/CAM (17/A) *
918	.Commerce/Business (18/0)
918.1	..Accounting/Billing (18/1)
918.2	..Banking (18/2)
918.3	..Credit (18/3)
918.4	..Inventory (18/4)
918.5	..Point of Sale (18/5)
918.51	...Vending (18/A) *
918.52	..Postage meter (18/B) *
918.6	..Reservations (18/6)
918.8	..Stock martket (18/8)
918.9	..Other specific commerce/business application (18/9)
919	.Communications/Data transmission system (19/0)
919.1	..Facsimile (19/1)
919.2	..Radio/TV (19/2)
919.3	..Via satellite (19/3)
919.4	..Telephone (19/4)
919.5	..Other specific communications application (19/5)
920	.Data Collection/recording (20/0)

APPLICATION

920.1	.Education (20/1)
920.2	.Engineering (20/2)
920.3	.Environment (20/3)
920.7	.Image processing (20/7) *
920.8	..Three dimensional (20/8) *
920.4	.Language translation (20/4)
920.5	.Law/Law enforcement (20/5)
920.6	.Library (20/6)
921	.Machine control (21/0)
921.1	..Textile/Loom (21/1)
921.2	..Tool (21/2)
921.3	..Other specific machine control application (21/3)
921.4	.Manufacturing process (21/4)
921.5	..Chemical (21/5)
921.6	..Petroleum (21/6)
921.7	..Other specific manufacturing process (21/7)
921.8	.Measure/Test/Monitor (21/8)
921.9	..With controlled response (21/9)
921.91	..Statistical (21/X)
922	.Medical (22/0)
922.1	..Accounting (22/1)
922.2	..Diagnostic (22/2)
922.3	..Monitoring (22/3)
922.4	..Other specific medical application (22/4)
922.5	.Military (22/5)
922.6	.Mining (22/6)
922.7	.Music (22/7)
922.8	.Navigation (22/8)
923	.Public utility (23/0)
923.1	..Electric power (23/1)
923.2	..Meter reading (23/2)
923.3	..Other specific public utility application (23/3)
923.4	.Radar/Sonar (23/4)
924	.Scientific (24/0)
924.1	..Astronomy (24/1)
924.2	..Biology (24/2)
924.3	..Chemistry (24/3)
924.4	..Physics/Nuclear (24/4)
924.5	..Seismology (24/5)
924.6	..Other specific scientific application (24/6)
925	.Vehicle/Transportation (25/0)
925.1	..Air/Space (25/1)
925.2	..Land (25/2)
925.3	..Other specific vehicle/transportation application (25/3)
925.4	.Other specific application (25/4)

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GENERIC DEVICE

926	.Analog input/output (26/0)
923.5	.Arithmetic/logic structure (23/5) *
923.6	..Parallel (23/6) *
923.71	..Bit slice (23/7) *
923.81	..Bit map (23/8) *
926.1	.Buffer structure (26/1)
926.2	..Multiple register buffer (26/2)
926.3	..Plural buffers (26/3)
926.4	..Recirculating (26/4)
926.5	..Shift register (26/5)
926.6	..Other specific buffer structure (26/6)
926.7	.Character generator (26/7)
926.8	.Character recognizer (26/8)
925.5	.Chip topography (25/5) *
927.8	.Chip - integrated circuit (27/8)
925.6	.Chip - Micro single chip computer (25/6) *
926.9	.Controller (26/9)
926.91	..Bus (26/A) *
926.92	..Memory (26/B) *
926.93	..Input/output (26/C) *
927	.Desk top/hand held (27/0)
927.1	.Digitizer, coordinate (27/1)
927.2	.Display (27/2)
927.3	..Color/intensity (27/3)
927.4	..CRT/TV (27/4) *
927.5	..Digital display/lights (27/5)
927.6	..With pen/pointer (27/6)
927.61	..Cursor (27/A) *
927.62	..Scrolling (27/B) *
927.63	..Window (27/C) *
927.631	...Overlapping (27/D) *
927.632	...Sizing (27/E) *
927.64	..Touch sensitive (27/F) *
927.66	..Update (27/H) *
927.67	..Bit map (27/J) *
927.7	..Other specific display (27/7)
927.81	.Emulator (27/K) *
927.82	.Firmware (27/L) *
927.83	.Housing, special (27/M) *
927.92	.Interface (27/N) *
927.93	..Bus (27/P) *
927.94	..Channel (27/Q) *
927.95	..Port (27/R) *
927.96	..Network (27/T) *
927.97	..Memory (27/V) *
927.98	..Processor (27/W) *
927.99	..Input/output (27/Z) *
929	..Line adapter/modem (29/0)
928	.Keyboard/switch (28/0)
928.1	..Data (28/1)
928.2	..Function (28/2)
928.3	..Program select (28/3)
928.4	..Test/monitor (28/4)
928.6	..Keystroke decoder (28/6) *
928.5	..Other specific keyboard/switch device (28/5)
929.1	.Matrix/switching array (29/1)
929.2	.Modular (29/2)
929.12	.Mouse (29/A) *
929.3	.Plotter/graphical (29/3)
929.4	.Plugboard/card/overlay (29/4)
929.5	..Motherboard/Backplane (29/5)
929.61	..Special application (29/6) *
929.71	..Other specific plugboard/card/overlay device (29/7) *
930	.Printer (30/0)
930.1	..Bar (30/1)
930.2	..Chain/belt (30/2)
930.3	..Disc/drum (30/3)
930.4	..Dot matrix (30/4)
930.41	..Ink jet (30/A) *
930.42	..Laser (30/B) *
930.5	..Multiple character (30/5)
930.6	..Single character (30/6)
930.7	..Other specific printer (30/7)
931	.Processor type/mode (31/0)
931.01	..Array processor (31/A) *
931.02	...Cellular array (31/B) *
931.03	...Single Instruction Multiple Data (SIMD) (31/C) *
931.1	..Bit/Byte processor (31/1)
931.11	..Data flow (31/R) *
931.2	..Electro-optical (31/2)
931.3	..Hybrid (Analog-Digital) (31/3)
931.4	..Plural/Multiprocessor (31/4)
931.41	...Parallel processing (31/D) *
931.42	...Multiple instruction multiple data (MIMD) (31/E) *
931.43	...Distributed processing (31/F) *
931.44	...Master/slave (31/G) *
931.45	...Redundant (31/H) *
931.46	...Shared memory (31/J) *
931.47	...Dedicated memory (31/K) *
931.48	...Synchronization (31/L) *
931.49	...Coprocessing (31/M) *
931.51	...Vector processing (31/N) *
931.52	...Scalar processing (31/P) *
931.55	..Reduced instruction set computer (RISC) (31/Q) *
931.5	..Other specific processing type/mode (31/5)

GENERIC DEVICE

932	.Reader/punch (32/0)
932.1	..Card (32/1)
932.2	..Cartridge/cassette (32/2)
932.3	..File (32/3)
932.4	..Magnetic (32/4)
932.5	..Paper (32/5)
932.6	..Tape (32/6)
932.61	..Optical character (32/A) *
932.62	..Scanner (32/B) *
932.7	..Other specific reader/punch (32/7)
932.8	.Receiver/transmitter (32/8)
933	.Register (33/0)
933.1	..Accumulator (33/1)
933.2	..Address (33/2)
933.3	..Data (33/3)
933.4	..Index (33/4)
933.5	..Instruction (33/5)
933.6	..Stack pointer (33/6)
933.61	..Condition code (33/A) *
933.62	..Status (33/B) *
933.7	..Other specific register (33/7)
933.8	.Simulator (33/8)
933.9	.Terminal (33/9)
934	.Time interval generator (clock) (34/0)
934.1	..Fixed (34/1)
934.2	..Multiple rates (34/2)
934.3	..Variable rates (34/3)
934.51	..Disable (34/5) *
934.61	..Expanding/stretching (34/6) *
934.71	..Frequency control (34/7) *
934.4	..Other specific time interval generator (34/4)
935	.Transmission medium (35/0)
935.1	..Electromagnetic (35/1)
935.2	..Line/link (35/2)
935.3	...Bidirectional (35/3)
935.4	...Bus (35/4)
935.41	....Arbitration (35/A) *
935.42	....Driver (35/B) *
935.43	....Decentralized control (35/C) *
935.44	....Input/output (35/D) *
935.45	....Construction (35/E) *
935.46	.....Plural (35/F) *
935.47	.....Variable width (35/G) *
935.48	.....Extension (35/H) *
935.49	.....Segmented (35/J) *
935.51	.....Ring (35/K) *
935.52	......Logical (35/L) *
935.53	......Physical (35/M) *
935.54	....Optical (35/N) *
935.55	....Other specific bus medium (35/P) *
935.5	...Coax (35/5)
935.6	...With separate data and control (35/6)
935.7	...Other specific line/link (35/7)
936	.Typewriter/TTY (36/0)
936.1	.Other specific generic device (36/1)

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GENERIC OPERATION

937.01	.Arbitration (37/B) *
937.1	.Arithmetical (37/1)
937.2	..Addition/subtraction (37/2)
937.3	..Division (37/3)
937.4	..Multiplication (37/4)
937.5	..Statistics (37/5)
937.6	..Trigonometry (37/6)
937.7	..Vector (37/7)
937.8	..Other specific arithmetical operation (37/8)
938	.Branching (38/0)
938.1	..Conditional (38/1)
938.2	..Lookahead (38/2)
938.3	..Unconditional (38/3)
938.4	..Other specific branching operation (38/4)
939	.Buffer function (39/0)
939.1	..Alternate load/unload (39/1)
939.2	..Formatting (39/2)
939.3	..With Input/Output device (39/3)
939.4	..Rate control (39/4)
939.5	..Serial/parallel conversion (39/5)
939.6	..Status checks (39/6)
939.81	..Simultaneous load/unload (39/8) *
939.7	..Other specific buffer function operation (39/7)
940	.Communication, interdevice (40/0)
940.1	..Accessing polling (40/1)
940.2	...Common bus (40/2)
940.3	...Concatenated/chained (40/3)
940.4	...Direct (40/4)
940.5	...Loop (40/5)
940.71	...Address/name table (40/7) *
940.8	...Token (40/8) *
940.9	...Mailbox (40/9) *
940.91	...Semaphore (40/A) *
940.92	...Tree/network (40/B) *
940.6	...Other specific accessing/polling operation (40/6)
940.61	..Interconnection (40/C) *
940.62	...Local area network (LAN) (40/D) *
940.63	...Ring (40/E) *
940.64	...Nodal network (40/F) *
940.65	...Star coupled (40/G) *
940.66	...Systolic array (40/H) *
940.67	...Hypercube (40/J) *
940.68	...Other specific interconnection (40/K) *
941	..Interrupt (41/0)
941.1	...Condition controlled (41/1)
941.2	...Fixed priority (41/2)
941.3	...Multiple level priority (41/3)
941.4	...Queued/table (41/4)
941.5	...Time cotrolled (41/5)
941.6	...Variable priority (41/6)
941.8	...Lockout (41/8) *
941.9	...Snapshot (41/9) *
941.91	...Daisy chained (41/A) *
941.7	...Other specific interrupt operation (41/7)
940.81	...Protocol/handshaking (40/L) *
937	.Answer-back/status (37/0)
942	..Multiplexed (42/0)
942.03	...Time division (42/A) *
942.04	...Between memories (42/B) *
942.05	...Between processors (42/C) *
942.06	...Between devices (42/D) *
942.07	...Between processes (42/E) *
942.08	...Packet switching (42/F) *
942.1	..Timeshared/Timeslot/Session (42/1)
942.2	..Other specific communication interdevice operation (42/2)
942.3	.Control, interdevice (42/3)
942.4	..Master/slave (42/4)
942.5	..Task assignment/Scheduling (42/5)
942.51	...Self configuration (42/G) *
942.6	..Other specific control interdevice operation (42/6)
942.7	.Counting (42/7)
942.79	.Data flow (42/M) *
942.8	.Decoding (42/8)
943.9	.Error/fault detection/prevention (43/9)
943.91	..Alternate/backup (43/X)
943.92	...Concurrent operation (43/Y)
944	...With element substitution (44/0)
944.1	...Periodic operation (44/1)
944.2	...Redundant elements (44/2)
944.3	...Other specific alternate/backup operation (44/3)
944.4	..arithmetic/logic (44/4)
944.5	..Data encode/decode/transmission (44/5)
944.6	..Execution sequence control (44/6)
944.61	..Fault tolerant/reconfigurable (44/A) *
944.7	..Input/output (44/7)
944.8	..Intermittent/transient errors (44/8)
944.9	..Monitor/error circuitry (44/9)
944.91	..Noise (44/A) *

GENERIC OPERATION
.Error/fault detection/prevention (43/9)
944.92 ..Storage addressing (44/X) *
945 ..With automatic recovery (45/0)
945.1 ...Repeated operations (45/1)
945.2 ...Other specific automatic recovery operation (45/2)
945.3 ..Data save (45/3)
945.4 ..With fault isolation (45/4)
945.5 ..Operator controlled (45/5)
945.6 ..Parity/validity (45/6)
945.7 ..Program controlled (45/7)
945.8 ..Skew correction (45/8)
945.9 ..Synchronization (45/9)
946 ..Verification (46/0)
946.1 ..Other specific error/fault detection/prevention operation (46/1)
946.2 .Instruction/program (46/2)
946.3 ..Chained/linked (46/3)
946.4 ..Fixed (hardwired) (46/4)
946.5 ..Macro (46/5)
946.6 ..Micro (46/6)
946.7 ..Modify (46/7)
946.8 ..Repeat (46/B)
946.9 ..Other specific instruction/program operation (46/9)
947 .Logical (47/0)
947.1 ..AND/OR/other logic (47/1)
947.2 ..Compare (47/2)
947.3 ..Invert (47/3)
947.4 ..Mask (47/4)
947.5 ..Sense special identifiers (47/5)
947.6 ..Shift/rotate (47/6)
947.7 ..Other specific logical operation (47/7)
948 .Lookahead/prefetch (48/0)
948.1 .Multimode (48/1)
948.11 .Multi-tasking (48/A) *
948.3 .Overlapping/Simultaneous/Concu rrent operations (48/3)
948.31 ..Simultaneous read/write (48/B) *
948.32 ..Plural process (48/C) *
948.33 ..External device (48/D)
948.34 .Pipeline (48/E) *
948.4 .Power control (48/4)
948.5 ..Failure (48/5)
948.6 ..On demand (48/6)
948.7 ..Partial (48/7)
948.8 ..Reduction (48/8)
948.9 ..Sequenced (48/9)
948.91 ..Other specific power control operation (48/X)
949 .Programmable (49/0)
949.1 ..Micro program (49/1)
949.2 ..Other specific programmable operation (49/2)
949.3 .Real time (49/3)
949.4 .Reconfigurable (49/4)
949.91 .Routing/Scheduling (49/A) *
949.92 ..Static (49/B) *
949.93 ..Dynamic (49/C) *
949.94 ..Optimizing (49/D) *
949.5 .Sampled data (49/5) *
918.7 ..Security (18/7)
949.71 ..Encryption/Decryption (49/7) *
949.81 ..Copy protection (49/8) *
949.96 ..Other specific security measure (49/9) *
949.6 .Stochastic process (49/6)
950 .Time control (50/0)
950.1 ..Asynchronous (50/1)
950.2 ..Cycle control/steal (50/2)
950.3 ..Synchronous (50/3)
950.4 ..Time delay (50/4)
950.61 ..External cycle (50/6) *
950.5 ..Other specific time control operation (50/5)
951 .Transfer register to register (51/0)
951.1 .Transform (51/1)
951.2 ..Complement (51/2)
951.3 ..Compress/expand (51/3)
951.4 ..Other specific transform operation (51/4)
951.5 .Variable length (51/5) *
951.6 .Zero supression (51/6) *

****

SPECIFIC STORAGE ELEMENT
952 .Dynamic (52/0)
952.1 ..Disc (52/1)
952.2 ..Drum (52/2)
952.3 ..Film/fiche (52/3)
952.31 ..Optical (52/A) *
952.4 ..Tape (52/4)
952.5 ...Cartridge/cassette (52/5)
952.6 ...Magnetic (52/6)
952.7 ...Paper (52/7)
952.8 ...Other specific dynamic tape element (52/8)
952.9 ..Other specific dynamic storage element (52/9)
953 .Static (53/0)
953.1 ..Bubble (53/1)
953.2 ..Capacitor (53/2)
953.3 ..Card (53/3)
953.4 ..Core (53/4)
953.5 ..CRT storage tube (53/5)
953.6 ..Cryogenic (53/6)
953.7 ..Delay line (53/7)
953.8 ..Hologram (53/8)
954 ..Semiconductor (54/0)
954.1 ...Charge coupled (54/1)
954.2 ...Integrated circuit (54/2)
954.3 ...Other specific static semiconductor storage element (54/3)
954.4 ..Thin film (54/4)
954.5 ..Other specific static storage element (54/5)

****

STORAGE ACCESSING/ADDRESSING
955 .Address modification (55/0)
955.1 ..Base and segment/tag and set (55/1)
955.2 ..Bit insertion (55/2)
955.3 ..Indexing (55/3)
955.4 ..Prefixing (55/4)
955.5 ..Table lookup (55/5)
955.6 ..Other specific address modification (55/6)
956 .Associative (56/0)
956.1 ..Matching data (56/1)
956.2 ..User (56/2)
956.3 ..Other specific associative storage accessing (56/3)
956.4 .Complementary (56/4)
956.5 ..Digit (56/5)
956.6 ..Other specific complementary storage accessing (56/6)
957 .Group (57/0)
957.1 ..Block/page (57/1)
957.8 ...Replacement (57/8) *
957.9 ...Prefetch (57/9) *
957.2 ..Chip/module (57/2)
957.3 ..Linked (57/3)
957.4 ..Multiple instruction/word (57/4)
957.5 ..Multiple location/access (57/5)
957.6 ..Queue/stack (57/6)
957.7 ..Other specific group accessing/addressing (57/7)
958 .Key/partial (58/0)
958.1 ..Key (58/1)
958.2 ..Masking (58/2)
958.3 ..Word/byte field (58/3)
958.4 ..Other specific key/partial accessing (58/4)
958.5 .Multiple mode (58/5)
959 .Multiplex (59/0)

STORAGE ACCESSING/ADDRESSING

959.1 .Random (59/1)
959.2 ..Shortest distance (59/2)
959.3 ..Track/sector identification (59/3)
959.4 ..Other specific random accessing (59/4)
960 .Sequential (60/0)
960.1 ..Chained (60.1)
960.2 ..Counter controlled (60/2)
960.3 ..Nonunit increment/decrement (60/3)
960.4 ..Timer controlled (60/4)
960.5 ..Tree structured (60/5)
960.6 ..Unit increment/decrement (60/6)
960.7 ..Other specific sequential accessing (60/7)
961 .Substituted (61/0)
961.4 ..Address transparency (61/4) *
961.1 .Variable length (61/1)
961.2 .Virtual (61/2)
961.3 .Other specific storage accessing/addressing (61/3)
****

STORAGE MANAGEMENT

962 .File maintenance/operation (62/0)
962.1 ..Insert/Delete/Update (62/1)
962.2 ..Merge/collate (62/2)
962.3 ..Sort (62/3)
962.4 ..Other specific file maintenance/operation (62/4)
963 .Information retrieval (63/0)
963.1 ..By content (63/1)
963.2 ..By location (63/2)
963.3 ..By table lookup/linking (63/3)
963.4 ..Of film/document (63/4)
963.5 ..Other specific information retrieval (63/5)
964 .Plural memory configuration (64/0)
964.1 ..Data store and program store (64/1)
964.2 ..Fast store and slow store (64/2)
964.21 ...Bypass (64/A) *
964.22 ...Instruction (64/B) *
964.23 ...Data (64/C) *
964.24 ...Instruction prefetch (64/D) *
964.25 ...Address (64/E) *
964.26 ...Pipeline (64/F) *
964.27 ...Common/shared (64/G) *
964.28 ...Parallel (64/H) *
964.29 ...Variable length (64/J) *
964.31 ...Dual ported (64/K) *
964.32 ...Plural (64/L) *
964.33 ...Interleaved (64/M) *
964.34 ...Update (64/N) *
964.341 ....Store through (64/P) *
964.342 ....Nonstore through (64/Q) *
964.343 ...Multilevel (64/R) *
964.3 ..Main memory and external bulk store (64/3)
964.4 ..Main memory and local input/output (64/4)
964.5 ..Main memory and intermediate store (64/5)
964.6 ..With memory to memory transfer (64/6)
964.7 ..Plural main memories (64/7)
964.9 .Refresh (64/9) *
964.8 .Self clocking recorded sensing (64/8)
965 .Single memory configuration (65/0)
965.1 ..Compound type (65/1)
965.2 ..Logic in memory (65/2)
965.3 ..Within memory transfer (65/3)
965.9 ..Multiported (65/9) *
965.4 ..Queued/stacked (65/4)
965.5 ..Read only/micro program (65/5)
965.6 ..Recirculating (65/6)
965.7 ..Shifting (65/7)
965.76 ..PROM/EPROM/EEPROM (65/A) *
965.77 ..PLA/PAL (65/B) *
965.78 ..Volatile (65/C) *
965.79 ..Nonvolatile (65/Y) *
965.8 ..Other specific memory management (65/8)
966 .Specific storage encoding/decoding technique (66/0)
966.1 ..Storage assignment (66/1)
966.2 ...Hierarchical (66/2)
966.3 ...Interleaved/interlaced (66/3)
966.4 ...Mapped/partitioned (66/4)
966.5 ...Redundant information (66/5)
966.6 ...Resolution between memories (66/6)
966.7 ...Resolution within single memory (66/7)
966.8 ...Other specific storage assignment (66/8)
967 .Storage dedication (67/0)
967.1 ..Input/output device (67/1)
967.2 ..User (67/2)
967.4 ..Resource allocation (67/4) *
967.5 ...Free storage allocation (67/5) *
967.3 ..Other specific storage dedication (67/3)
968 .Storage medium controller (68/0)
968.1 .Storage medium preparation (68/1)
968.2 ..Key to card/tape/disc (68/2)
968.3 ..Other specific storage medium preparation (68/3)
969 .Storage protection (69/0)
969.1 ..Comparison of boundary address(es) (69/1)
969.2 ..Locked/unlocked (removable) (69/2)
969.4 ..Unauthorized access (69/4) *
969.3 ..Other specific storage protection (69/3)
970 .Storage reconfiguration (70/0)
970.1 ..Defective storage substitution/patching (70/1)
970.5 ..Expansion (70/5) *
970.2 ..Relocatable (70/2)
970.3 ..Variable length (70/3)
970.4 ..Other specific storage reconfiguration (70/4)
971 .Storage status (71/0)
971.1 .Other specific storage management (71/1)
****

PROGRAMMING SYSTEMS

972 .Artificial intelligence (72/0) *
972.1 ..Natural language interface (72/1) *
972.2 ..Expert system (72/2) *
972.3 ...Rule based (72/3) *
972.4 ..Neural network (72/4) *
973 .Compiler (73/0) *
974 .Data base system (74/0) *
974.1 ..Model (74/1) *
974.2 ...Network (74/2) *
974.3 ...Hierarchical (74/3) *
974.4 ...Relational (74/4) *
974.5 ...Entity attribute (74/5) *
974.6 ..Query (74/6) *
974.7 ..Distributed (74/7) *
975 .Dictionary (75/0) *
943 .Document or display preparation (43/0)
943.1 ..Insertion/deletion/correction (43/1)
943.2 ..Justification/hyphenation (43/2)
943.3 ..Photocomposing (43/3)
943.4 ..Typesetting (43/4)
943.41 ..Spelling check (43/A) *
943.42 ..Synonym (43/B) *
943.43 ..Word processing (43/C) *
943.44 ..Editor (43/D) *
943.5 ..Other specific document or display preparation operation (43/5)
975.1 .Downloading/uploading (75/1) *
975.2 .Initialization/bootstrap program (75/2) *
975.4 .Kernal (75/4) *
975.5 .Load balancing (75/5) *
976 .Operating system (76/0) *

	PROGRAMMING SYSTEMS
	.Operating system (76/0) *
976.1	..Host (76/1) *
976.2	..Guest (76/2) *
976.3	..Plural (76/3) *
976.4	..Recovery (76/4) *
948.2	.Operator prompting/guidance (48/2)
948.21	..Menu driven (48/F) *
948.22	..User friendly (48/G) *
976.5	.Petri net (76/5) *
977	.Programming language (77/0) *
977.1	..Graphic (77/1) *
977.2	..Nonprocedural (77/2) *
977.3	..Dialogue (77/3) *
977.5	.State machine (77/5) *
978	.Virtual (78/0) *
978.1	..Machine (78/1) *
978.2	..Operating system (78/2) *
978.3	..Terminal (78/3) *

1 MAGNETIC BUBBLES
2 .Disposition of elements
3 ..Lattice
4 .Decoder
5 .Logic
6 .Rotating field circuits
7 .Detectors
8 ..Magnetoresistive
9 ..Hall effect
10 ..Optical
11 .Generators
12 ..By splitting
13 .Plural interacting paths
14 ..Closed loop
15 ...Major-minor
16 ..With switch at interacting point
17 ...Idler switch
18 ..Boundary
19 .Conductor propagation
20 ..Including A.C. signal
21 ..Three phase signals
22 .One's and zero's
23 .Plural direction propagation
24 ..Nonsequential
25 .Velocity
26 ..Turns
27 .Bias
28 ..Variable
29 .Strip domain
30 .In-plane field (nonrotating)
31 .Different size bubbles
32 .Multiple magnetic layer
33 .Magnetic storage material
34 ..Amorphous
35 .Guide structure
36 ..Ion implantation
37 ..Slots or rails
38 ..Zigzag
39 ..Overlays
40 ...On opposite sides of storage medium
41 ...Dots
42 ...Wedges
43 ...Chevrons
44 ...Rectangular bars
45 ANALOG STORAGE SYSTEMS
46 .Resistive
47 .Thermoplastic
48 .Magnetic
49 ASSOCIATIVE MEMORIES
50 .Magnetic
51 FORMAT OR DISPOSITION OF ELEMENTS
52 HARDWARE FOR STORAGE ELEMENTS
53 .Shields
54 .Ground plane
55 .Magnetic
56 ..Spacers
57 ..Keeper
58 ..Slot
59 ..Embedded conductor
60 ..Air gap
61 ..Hairpin conductor
62 ..Permanent magnet
63 INTERCONNECTION ARRANGEMENTS
64 .Optical
65 .Ferroelectric
66 .Magnetic
67 ..Plural diagonal
68 ..Tree
69 ..Crossover
70 ..Woven
71 .Negative resistance
72 .Transistors or diodes
73 RECIRCULATION STORES
74 .Magnetic
75 .Stepwise
76 .Delay lines
77 .Plural paths
78 PLURAL SHIFT REGISTER MEMORY DEVICES
80 MAGNETIC SHIFT REGISTERS
81 .Bidirectional
82 .Two cells per bit
83 .SiPo/PiSo
84 .Core in transfer loop
85 .Continuous
86 ..Plated wire
87 .Thin film
88 ..Domain tip
89 .Logic
90 .Multiaperture cell
91 ..Ladder
92 ..With other type core
93 .Including delay means
94 READ ONLY SYSTEMS (I.E.. SEMIPERMANENT)
95 .With override (i.e., latent images)
96 .Fusible
97 .Magnetic
98 ..Random core
99 ..Random wiring
100 .Resistive
101 .Inductive
102 .Capacitative
103 .Semiconductive
104 ..Transistors
105 ..Diodes
106 RADIANT ENERGY
107 .Chemical fluids
108 .Liquid crystal
109 .Photoconductive and ferroelectric
110 .Electroluminescent and photoconductive
111 .Electroluminescent
112 .Photoconductive
113 .Amorphous
114 .Semiconductive
115 ..Diodes
116 .Plasma
117 .Ferroelectric
118 .Electron beam
119 .Color centers
120 INFORMATION MASKING
121 .Polarization
122 ..Magneto-optical
123 .Bragg cells
124 .Diffraction
125 ..Holograms
126 .Thermoplastic
127 .Transparency
128 .Electron beams
129 SYSTEMS USING PARTICULAR ELEMENT
130 .Three-dimensional magnetic array
131 .Two magnetic cells per bit
132 .Different size cores
133 .Cells of diverse coercivity
134 .Continuous cells
135 ..Elongated or bar-shaped cell
136 ...Twisters
137 ...Tubular
138 ...Chain
139 ...Plated wire
140 .Multiaperture cell
141 ..Aperture plate
142 ..Aperture with transverse axis
143 ...Biax
144 ..Same size apertures
145 .Ferroelectric
146 .Electrets
147 .Persistent internal polarization (PIP)
148 .Resistive
149 .Capacitors
150 ..Inherent
151 .Molecular or atomic
152 ..Nuclear induction or spin echo
153 .Electrochemical
154 .Flip-flop (electrical)
155 ..Plural emitter or collector
156 ..Complementary
157 .Magnetostrictive or piezoelectric

	SYSTEMS USING PARTICULAR ELEMENT
158	.Magnetoresistive
159	.Negative resistance
160	.Superconductive
161	..Thin film
162	..Josephson
163	.Amorphous (electrical)
164	.Electrical contacts
165	..Coherer
166	..Relay
167	.Simulating biological cells
168	.Ternary
169	.Gunn effect
170	.Hall effect
171	.Magnetic thin film
172	..Isotropic
173	..Multiple magnetic storage layers
174	.Semiconductive
175	..Diodes
176	..Silicon on sapphire (SOS)
177	..Bioplar and FET
178	..Ion implantation
179	..Plural emitter or collector
180	..Four layer devices
181	..Complementary conductivity
182	..Insulated gate devices
183	...Charge coupled
184	...Variable threshold
185	...Floating gate
186	..Single device per bit
187	..Three devices per bit
188	..Four or more devices per bit
189.01	READ/WRITE CIRCUIT
189.02	.Multiplexing
189.03	.Plural use of terminal
189.04	.Simultaneous operations (e.g., read/write)
189.05	.Having particular data buffer or latch
189.06	.Including signal clamping
189.07	.Including signal comparison
189.08	.Including specified plural element logic arrangement
189.09	.Including reference or bias voltage generator
189.11	.Including level shift or pull-up circuit
189.12	.With shift register
190	.For complementary information
191	.Signals
192	..Radio frequency
193	..Strobe
194	..Delay
195	..Inhibit
196	...Sense/inhibit
197	..Microwave
198	..Transmission
199	..Coincident A.C. signal with pulse
200	.Bad bit
201	.Testing
202	.Complementing/balancing
203	.Precharge
204	.Accelerating charge or discharge
205	.Flip-flop used for sensing
206	.Noise suppression
207	..Differential sensing
208	...Semiconductors
209	...Magnetic
210	....Reference or dummy element
211	..Temperature compensation
212	...Semiconductor
213	...Magnetic
214	..Particular wiring
215	.Optical
216	..Holographic
217	.Electron beam
218	.Erase
219	.SiPo/PiSo
220	.Parallel read/write
221	.Serial read/write
222	.Data refresh
223	.Bridge
224	.Eddy current
225	.Minor loop
225.5	.Including magnetic element
225.6	.Having bipolar circuit element
225.7	.Having fuse element
226	POWERING
227	.Conservation of power
228	.Data preservation
229	..Standby power
230.01	ADDRESSING
230.02	.Multiplexing
230.03	.Plural blocks or banks
230.04	..Alternate addressing (e.g., even/odd)
230.05	.Multiple port access
230.06	.Particular decoder or driver circuit
230.07	..Including magnetic element
230.08	.Including particular address buffer or latch circuit arrangement
230.09	.Combined random and sequential addressing
231	.Using selective matrix
232	..Magnetic
233	.Sync/clocking
233.5	..Transition detection
234	.Optical
235	..Page memories
236	.Counting
237	.Electron beam
238	.Cartesian memories
238.5	.Byte or page addressing
239	.Sequential
240	..Using shift register
241	..Detectors
242	.Current steering
243	..Diode
243.5	.Including magnetic element
244	MISCELLANEOUS

CLASS 366 AGITATING

1 MORTAR MIXER TYPE
2 .Methods
3 ..Gas incorporating; fluid mixing, delivering, or conveying
4 ...With heating or cooling
5 ...Gas incorporating at delivery
6 ..Treatment or preparation of material
7 ...By heating or cooling
8 ...By ingredient proportioning
9 .Gravity type
10 .With gas incorporating; fluid mixing, delivering, or conveying
11 ..Gas incorporating at delivery nozzle
12 ..Into rotating mixing chamber
13 ..With rotatable stirrer
14 .Plural mixing chambers
15 ..Intercommunicating
16 .With ingredient proportioning
17 ..By condition sensing means
18 ..By weight
19 ..By volume
20 ..By screw conveyer charging means
21 ..By varying opening of charging means
22 .With heating or drying
23 ..Heating mixing chamber and ingredient preheater
24 ..Heating mixing chamber
25 ...By hot gases to interior
26 .With elevating means
27 .With dynamic charging and dynamic delivery
28 ..Interrelated
29 ...With automatic control means
30 .With dynamic charging
31 ..By vibration
32 ...Of skip or hopper
33 ..Plural charge means
34 ...Including dynamic liquid charge
35 ...Including screw conveyer
36 ...Skip and liquid
37 ...Plural dynamic
38 ..By screw conveyer
39 ..Skip
40 .With liquid charge
41 .Movable charge hopper or chute
42 .With dynamic delivery
43 ..Including automatic control means
44 ..Rotatable mixing chamber reversible for delivery
45 ..Mixing chamber tiltable for delivery
46 ...With stirrer
47 ...Hand operated tilt
48 ....Wheelbarrow-type support
49 ..Endless belt
50 ..Rotary screw
51 ..Pump
52 ..Scraper or deflector
53 .Movable mixing chamber
54 ..Rotatable
55 ...With additional diverse motion
56 ...With agitator
57 ....Rigid deflector fixed to chamber wall
58 .....Compartmental-type chamber
59 .....Helical
60 ...With specified actuating or control means
61 ....Hydraulic drive or control
62 ...With specified support structure
63 ....Specified rotational mounting
64 .Movable stirrer
65 ..Vertical mixing chamber
66 ..Plural stirrers
67 ..Including scraper, wiper, or brush
68 .Movable chute
69 RUBBER OR HEAVY PLASTIC WORKING
70 .Candy puller type
71 .Roll couple and scraper
72 .Roll couple and work handler
73 .Roll couple having adjustment means
74 .Roll traveling within platen
75 .With specified vent means
76 .With specified feed means
77 .With specified discharge means
78 .Rotating and reciprocating stirrer
79 .Stirrer is through-pass screw conveyer
80 ..With deflector
81 ..With additional stirrer element on screw conveyer
82 ...Ring or disk
83 ..Plural screw conveyers on separate shafts
84 ...In parallel intercommunicating mixing chambers
85 ....Screw conveyers intermeshing
86 ....Intercommunication by conduit
87 ..And downstream breaker plate or screen
88 ..Including sections of different pitch
89 ..Varying diameter of shaft
90 ..Notched, apertured, or interrupted thread
91 .Plural mixing chambers
92 .With means to move mixing chamber
93 ..Rotating mixing chamber
94 ...With rotating stirrer
95 ....Single stirrer
96 .Stationary mixing chamber
97 ..With rotating stirrer
98 ...Single stirrer
99 ....Horizontal
100 .Stirrer with specified drive means
101 BY INJECTING GAS INTO CHAMBER
102 .With stirrer
103 ..Plural stirrers
104 ...Diverse
105 .Into rotating mixing chamber
106 .Intermittent or pulsating feed
107 .Plural gas feeders
108 BY VIBRATION
109 .Including endless conveyer
110 .Of holder for mixing chamber
111 .Of platform or mixing chamber supported by vibrator
112 ..Supported by vibrator solely
113 .Vibrator mounted in aperture of mixing chamber bottom wall
114 .Vibrator attached to mixing chamber wall or platform
115 ..By bonding
116 .With amplitude or frequency regulator
117 .Of stirrer
118 ..In mixing chamber
119 ...Actuated by flow of material
120 ..Pencil type
121 ...With lubricating means
122 ...Specified end structure
123 ...Actuated by rotary movement of unbalanced-weight shaft
124 .Vibrator actuated by fluid under pressure
125 ..Including shaft with radially movable element
126 ..Fluid acting on orbital rolling ball
127 .By electrostrictive or magnetostrictive transducer
128 .By rotary movement of unbalanced-weight shaft
129 OPERATOR SUPPORTED
130 .Mixing chamber type
131 WITH INTERRELATED FEED AND DISCHARGE MEANS
132 .Including means to monitor or control operation
133 .By single endless or screw conveyer
134 .Plural feed or discharge means
135 .Rotatable mixing chamber

WITH INTERRELATED FEED AND DISCHARGE MEANS
136 .Recirculating from and to mixing chamber
137 ..Directly
138 WITH FLUSHING OF MIXING CHAMBER
139 IN VACUUM CHAMBER
140 WITH SAMPLING
141 WITH WEIGHING
142 WITH TEST, SIGNAL OR INDICATOR MEANS
143 WITH INSPECTION MEANS (E.G., WINDOW)
144 WITH HEATING OR COOLING
145 .Including temperature control
146 .Electrical heating
147 .Medium in stirrer or mixing chamber
148 .Of supply
149 .Jacket
150 WITH SPECIFIED FEED MEANS
151 .Responsive to condition sensor
152 ..Proportioning plural material components
153 ..Controlling level of material in mixing chamber
154 .With agitation of material in feeder or supply reservoir
155 ..Rotatable impeller
156 ...Screw conveyer
157 ....Coaxial or unitary with stirrer
158 ....Axis parallel to stirrer in mixing chamber
159 .Including returning material to supply
160 .Including mixing ratio control
161 ..By variable pump
162 .Predetermined mixing ratio
163 .Suction
164 ..By stirrer
165 .Causing rotary motion in mixing chamber (e.g., cyclonic)
166 .Print washer type
167 .Liquid injector within mixing chamber
168 ..With rotatable stirrer
169 ...Fed through stirrer or stirrer shaft
170 ....Rotating mixing chamber
171 ...With cooperative stationary element
172 ...Plural injectors
173 ..Plural injectors
174 ..With deflector
175 ...Rotating mixing chamber
176 .Pump forcing through restriction (e.g., emulsifier)
177 .Plural feeders
178 ..Concentric
179 ..Intermittent feed
180 ..Into rotating mixing chamber
181 ..Including chute or hopper
182 .Including means for controlling flow
183 .Static conveyer
184 WITH SPECIFIED DISCHARGE MEANS
185 .By tilting mixing chamber
186 .By endless belt or screw conveyer
187 .Rotatable or oscillatable mixing chamber
188 ..Closure-type discharge
189 .Batch discharge
190 .By pump within mixing chamber
191 .By suction or compressed air
192 .Valve or gate
193 ..Sliding gate
194 .With rotatable or oscillatable stirrer
195 ..Interrelated with discharge means
196 ..Discharge effected by stirrer
197 MIXING CHAMBER REMOVABLE FROM STIRRER AND SUPPORT
198 .Plural supports
199 .Removable power drive means
200 .Support rotatable only
201 ..Adjustable stirrer
202 .Support oscillatory only
203 .Support rectilinearly reciprocable only
204 .Mixing chamber mounted within container
205 .Stirrer mounted through mixing chamber bottom wall
206 .With motor control
207 .Adjustable
208 BY MOVEMENT OF SUPPORT FOR REMOVABLE MIXING CHAMBER
209 .Mixing chamber secured to support
210 ..Support oscillatory only
211 ...Motor driven
212 ..Support rectilinearly reciprocable only
213 ..Support rotatable only
214 ...And means to clamp plural mixing chambers
215 ..Support pivotally mounted by plural linkage
216 ..Support oscillatory with additional motion
217 ..Support rotates about plural axes
218 .Mixing chamber conveyed by support during agitation
219 BY MOVEMENT OF MIXING CHAMBER RELATIVE TO STATIONARY SUPPORT
220 .Mixing chamber rotatable only
221 ..With scraper
222 ..Interrelated stirrer and mixing chamber drive
223 ...Effecting counter rotation
224 ..With rotatable stirrer
225 ..With deflector
226 ...Foraminous type
227 ...Helical type
228 ...Attached directly to chamber wall
229 ....Additional deflector on support in chamber
230 ...Deflector stationary
231 ....Suspended within chamber
232 ..Mixing chambers supported by shaft at one end only
233 ..Roller or suspended support for mixing chamber
234 ..Foraminous mixing chamber
235 ..Plural mixing chamber
236 ..Rectangular mixing chamber
237 .Mixing chamber oscillating only
238 ..With stirrer
239 .Mixing chamber rocking only
240 .Mixing chamber rectilinearly reciprocating only
241 STIRRER WITHIN STATIONARY MIXING CHAMBER
242 .Mounted in removable mixing chamber closure
243 ..Oscillatory stirrer
244 ..Rotatable stirrer
245 ...Axis fixed
246 ....Coincident axes
247 ....Single stirrer
248 .....Bent bar
249 .....Motor driven
250 ......Fluid motor
251 ......Electric motor
252 .....Gear drive
253 ......With cooperative stationary element
254 ......Adjustable stirrer or stirrer element
255 ..Translatable stirrer
256 ...Rectilinearly reciprocable only
257 ....Plural stirrers
258 ....With rotary input drive
259 ....Actuated by pivoted lever
260 ....Spring return
261 .With means to move stirrer and support
262 .Pump type
263 ..Centrifugal
264 ...Impeller with outer stationary ring

	STIRRER WITHIN STATIONARY MIXING CHAMBER
	.Pump type
	..Centrifugal
265	...Impeller only
266	..Screw
267	..Piston
268	...Plural
269	...Inlet and outlet at same end of flow path
270	..Propeller blade type
271	.Endless conveyer with paddles
272	.Gear-type stirrer
273	.Magnetic stirrer
274	..Actuating means in base support
275	.Flexible diaphragm
276	.Oscillatory stirrer
277	..With additional motion
278	..Including rotatable input drive
279	.Rotatable stirrer
280	..With movable element actuated by material
281	..With support for attachment to mixing chamber rim
282	...With motor drive
283	...With gear drive
284	....Including adjustable rim contact support
285	..Adjustable
286	...Axially
287	..Planetary
288	...Axes of rotation and revolution parallel
289	..Also axially reciprocable
290	..In at least one of intercommunicating adjacent mixing chambers
291	...Plural stirrers on parallel axes in adjacent mixing chambers
292	..Plural stirrer
293	...Coaxial
294	....Differing in speed
295	....Diverse stirrers
296	....Rotating in opposite directions
297	...On parallel axes
298	....Differing in speed
299	....Diverse stirrers
300	....Rotating in opposite directions
301	....Intermeshing with each other
302	..With cooperative stationary element
303	...Interdigitating
304	....Parallel to axis of rotation
305	...Cylindrical or conical stirrer or element
306	...Element mounted on mixing chamber end wall
307	...Element mounted on cylindrical mixing chamber wall
308	..Collapsible articulated stirrer
309	..Including scraper, wiper, or brush
310	...Helical type
311	...Pivotally mounted on noncoincident axis
312	...Plural distinct scraping edges or wiping surfaces
313	....Axially offset
314	..Mounted in mixing chamber bottom wall
315	..Disk-type stirrer
316	...Apertured or notched
317	...With projection
318	..Screw-type stirrer
319	...With additional agitator elements on screw
320	...Openwork helical ribbon
321	...Opposite pitch
322	...Discontinuous screw
323	...Varying diameter of convolutions or shank or varying pitch
324	...Apertured or notched
325	..Relatively fixed plural elements
326	...Adjustable or flexible
327	...Of differing pitch
328	...Apertured or notched
329	...Diverse
330	...Propeller type
331	..With specified mounting means
332	.Rectilinearly reciprocable stirrer
333	..In contact with mixing chamber
334	..Plural
335	...On parallel axes
336	STATIONARY DEFLECTOR IN FLOW-THRU MIXING CHAMBER
337	.Angularly related flat surfaces
338	.Curved deflector surface
339	..Helical ribbon or strand
340	.Plate or block, being apertured, notched, of truncated in shape
341	STATIONARY MIXING CHAMBER
342	AGITATOR
343	.Stirrer
344	..With ejector
345	..Ambulant over material-supporting surface
346	...Track guided
347	COVER OR SHIELD FOR MIXING CHAMBER
348	METHOD
349	MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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600	BODINE VIBRATOR
601	MOTOR CONTROL
602	AMALGAM MIXER, E.G., DENTAL FILLING
603	ANIMAL FOOD MIXER
604	LATHER MAKER
605	PAINT MIXER
606	TRACTOR MOUNTED MORTAR MIXING CHAMBER
607	CHAIN-TYPE STIRRER

CLASS 367 COMMUNICATIONS, ELECTRICAL: ACOUSTIC WAVE SYSTEMS AND DEVICES

1 SONAR COUNTER-MEASURES
2 TRANSPONDERS
3 .Sonobuoys and sonobuoy systems
4 ..With component activating or deployment means
5 ..With plurality of sonobuoys
6 .With plurality of transponders
7 ACOUSTIC IMAGE CONVERSION
8 .Acoustic holography
9 ..Seismic display
10 ..Liquid or deformable surface holography
11 .With memory means
12 BEAM STABILIZATION OR COMPENSATION
13 TESTING, MONITORING, OR CALIBRATING
14 SEISMIC PROSPECTING
15 .Offshore prospecting
16 ..Transducer position control
17 ...Hydromechanical
18 ...Fluid variation
19 ..Transducer cable location determination
20 ..Multiple hydrophone cable systems
21 ..Signal processing
22 ...Transducer output weighting
23 ...Controlled source signalling
24 ...Reverberation removal
25 .Well logging
26 ..Threshold set system
27 ..Time interval measurement
28 ..Amplitude measurement
29 ...Peak amplitude
30 ...Amplitude comparison
31 ...Of noncompressional acoustic wave energy
32 ...Frequency dependent determination
33 ..Depth recording or control
34 ..Received signal cycle discrimination
35 ..Borehole or casing condition
36 .Land-refraction type
37 .Land-reflection type
38 ..Signal analysis and/or correction
39 ...Random signal correlation
40 ...Received correlation
41 ...Transmitted correlation
42 ...Standard correlation
43 ...Filters
44 ....Comb filters
45 ....Adaptive filters
46 ....Inverse filters
47 ...Amplitude
48 ...Phase
49 ...Frequency
50 ...Timing correction
51 ....Dynamic timing correction
52 .....Normal moveout
53 ....For dip
54 ....For weathering layer
55 ...Timing mark generation
56 ...Particular source-receiver array
57 ....Vertical receiver or source array
58 ...By receiver pattern arrangement
59 ...Compositing system
60 ....Special digital system
61 ....Beam steering
62 ....Array weighting
63 ....With preliminary signal processing
64 ...Optical processing
65 ...Gain control
66 ....Analog/digital compatible systems
67 ....Digital
68 ..Display systems
69 ...Well logging type
70 ...Color
71 ...CRT
72 ...3-D
73 ..Synthetic seismograms and models
74 ..Format conversion
75 ..Shear wave
76 ..Telemetry
77 ...Radio wave
78 ...Multiplex
79 ....Time
80 ....Frequency
81 WELLBORE TELEMETERING
82 .Through drill string or casing
83 .Through well fluids
84 ..Rotary valve control
85 ..Linear valve control
86 BOREHOLE TESTING
87 ECHO SYSTEMS
88 .Side scanning or contour mapping sonar systems
89 .Speed determination
90 ..By doppler effect
91 ...Vehicle mounted system for determining vehicle speed
92 .Parametric sonar
93 .Presence or movement only detection
94 ..By doppler effect
95 .Returned signal used for control
96 ..External device
97 ..Receiver system
98 ...Automatic gain or threshold control
99 .Distance or direction finding
100 ..With correlation or matched filtering
101 ..Frequency modulation
102 ...Linear modulation (e.g., sawtooth)
103 ..With beam steering, scanning, or focussing
104 ...By transducer movement
105 ...Transducer switching or gating
106 ..With towing
107 ..With indicator
108 ...Digital readout
109 ...Rotating lamp
110 ...Color display
111 ...Luminous array
112 ...Alarm
113 ...Cathode-ray tube
114 ...Meter
115 ...Permanent record
116 ...Audible or tactile
117 PLURAL TRANSMITTERS TO RECEIVER OR TRANSMITTER TO PLURAL RECEIVERS
197 SELECTIVE (E.G., REMOTE CONTROL)
198 .Humanly generated sound or speech responsive (e.g., human whistle)
199 .Frequency responsive actuation
118 DISTANCE OR DIRECTION FINDING
119 .With beam steering, scanning, or focussing
120 ..By transducer movement
121 ..By electrical means
122 ...Transducer switching or gating
123 ...With phase shifter or delay means
124 .By combining or comparing signals
125 ..Phase comparison and/or correlation
126 ..Addition or subtraction
127 .With time interval measuring means
128 .With electromagnetic wave
129 .With plurality of transducers
130 .With towing
131 UNDERWATER SYSTEM
132 .Analog speech communication
133 .Remote control
134 .Telemetering
135 RECEIVER CIRCUITRY
136 .Responsive to intruder energy
137 TRANSMITTER SYSTEMS
138 .With beam forming, shaping, steering, or scanning
139 .Animal control
140 SIGNAL TRANSDUCERS

SIGNAL TRANSDUCERS
141 .Underwater type
142 ..Exclusive-type transmitter
143 ...Hydraulically driven vibrator
144 ...Air guns
145 ...Explosives
146 ...Implosion devices
147 ...Spark discharge devices
148 ...Electrically driven underwater bells or sirens
149 ..Exclusive-type receiver
150 ..With modifying lens
151 ..With reflector
152 ..With impedance matching means
153 ..Plural transducer array
154 ...Line array
155 ...Piezoelectric
156 ...Magnetostrictive
157 ..Piezoelectric
158 ...Head and tail mass
159 ...Elongated cylindrical element
160 ...Bending type
161 ....Multimorph
162 ...With resonant or damping structure
163 ...With diaphragm
164 ...Single element having a plurality of electrodes
165 ...Specific support structure
166 ...Liquid filled
167 ...Pressure compensating means
168 ..Magnetostrictive
169 ..Elongated continuous type
170 ..Electret
171 ..Liquid filled transducer
172 ..Transducer with pressure compensating means
173 ..Transducer with support
174 ..Transducer with diaphragm
175 ...Diaphragm with electric driving coil
176 ..Transducer with resonant or damping structure
177 .Towed land cables
178 .Receivers
179 ..Pendulum type
180 ..Piezoelectric
181 ..Capacitive
182 ..Moving coil
183 ...Spider spring
184 ...Having arcuate movement
185 ..Moving magnet
186 ...Having arcuate movement
187 ...Spider spring
188 ..Casing or housing
189 .Vibrator-type transmitter
190 ..With feedback control
191 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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900 SONAR TIME VARIED GAIN CONTROL SYSTEMS
901 NOISE OR UNWANTED SIGNAL REDUCTION IN NONSEISMIC RECEIVING SYSTEM
902 SPEED OF SOUND COMPENSATION
903 TRANSMIT-RECEIVE CIRCUITRY
904 DOPPLER COMPENSATION SYSTEMS
905 SIDE LOBE REDUCTION OR SHADING
906 AIRBORNE SHOCK-WAVE DETECTION
907 COORDINATE DETERMINATION
908 MATERIAL LEVEL DETECTION, E.G., LIQUID LEVEL
909 COLLISION AVOIDANCE
910 PORTABLE SONAR DEVICES
911 PARTICULAR WELL-LOGGING APPARATUS
912 .Particular transducer

CLASS 368 HOROLOGY: TIME MEASURING SYSTEMS OR DEVICES

DECEMBER 1990

1 CONTROLLED BY A DISPARATE DEVICE
2 .Speed checker
3 .Game
4 .Telephone
5 .Engine (e.g., internal combustion)
6 .Vehicle (e.g., aircraft, automobile) or vehicle part
7 ..Actuation of a parking meter
8 ..Actuation of a running-time meter
9 .Electrical device
10 COMBINED WITH DISPARATE DEVICE
11 .Ambient condition detector
12 .External alarm
13 .Telephone
14 .Navigational instrument
15 ASTRONOMICAL
16 .With sun, earth, and moon display
17 .With sun and earth display
18 .With moon and earth display
19 .With tide display
20 .With navigational display
21 PLURAL TIME ZONES
22 .With manually actuated display
23 .With a world globe
24 ..Including illumination means
25 .With movable belt display
26 .With movable drum display
27 .With movable disk display
28 WITH CALENDAR INDICATOR
29 .Electro-optical
30 ..Liquid crystal display (i.e., LCD)
31 .Winding and setting
32 ..Having clutch coupling
33 .Winding
34 .Setting or resetting
35 ..Movable ring or disk
36 ...With clutch
37 .Movable ring or disk
38 ..With jumper spring
39 .Movable drum
40 .Movable belt
41 WITH MEMORANDUM HOLDER OR ERASABLE WRITING SURFACE
42 .Motion controlled by timepiece
43 .Having alarm controlled by holder
44 .Having pointer controlled by timepiece
45 TOY
46 PLURAL TIMEPIECE SYSTEM OR SYSTEM DEVICE (E.G., PRIMARY OR SECONDARY CLOCKS)
47 .With wireless synchronization
48 .With auxiliary power source
49 .With significant winding or setting means
50 ..For winding only
51 ..For setting only
52 .Primary with direct synchronization or drive
53 ..By external condition responsive means
54 ..By fluidic actuation means
55 ..By communication means
56 ..By signal frequency change
57 ..By signal amplitude change
58 ..By signal polarity change
59 .Secondary
60 ..With mechanical or electromechanical resetting
61 ...Having mechanically actuated electrical switch
62 CHRONOLOGICAL
63 .Phonetic (e.g., talking clock)
64 .With supplemental power source
65 .With fluidic actuation means
66 .With power monitor
67 .With auxiliary illumination for display
68 .With intensity control of display
69 .With manually actuated display
70 ..Operated sequentially for distinct time data
71 .With simultaneous time indicating means
72 ..Alarm type
73 ...Actuated by electrical means
74 ...With significant winding or setting
75 ..Sequential hourly sounding means
76 .With mechanical or electromechanical driven display
77 ..Rotating disk
78 ..Drum
79 ..Optical
80 ..Hand and dial
81 ...Having motor located in hand
82 .With electro-optical display
83 ..Solid body light emitter (e.g., LED)
84 ..Liquid crystal display (i.e., LCD)
85 .With pulse transforming means
86 ..Including transistor
87 ...Integrated circuit
88 .With significant casing or mounting support structure
89 TIME INTERVAL
90 .Parking meter type
91 ..With gravity actuated timer
92 ..With overtime indicator
93 .Gravity actuated type (e.g., hourglass)
94 ..With alarm means
95 ..With special support means
96 .With alternately operating indicators (e.g., chess clock)
97 .With predetermined mechanical timing means
98 ..Including alarm means
99 ...With combined alarm and time motor
100 ...With cam controlled striker
101 .Mechanical stop time type
102 ..With plural second hands (e.g., split-seconds)
103 ..With pivoted coupler
104 ..With sliding coupler
105 ..With positive stop
106 ..With reset means
107 .Electrical or electromechanical
108 ..For predetermined interval
109 ...Including alarm means
110 ..Mechanically actuated stop time type
111 ...With electronic memory storage
112 ...With reset means
113 ..Stop time type
114 ...With physically changeable element
115 ...Including cathode-ray tube oscilloscope
116 ....With brightner means
117 ....With variable delay means
118 ...Including time base oscillator
119 ....Plural
120 ...Including delay means
121 ...Including time indicating means actuated by voltage or electrical charge
122 ....With null indicator having variable circuit element
123 ....With vacuum-tube voltmeter
124 ESCAPEMENTS
125 .With oscillating or reciprocating means
126 ..Magnetic type
127 ..Balance wheel type
128 ...With motion conversion drive
129 ...Carrying impulse receiving means
130 ....On balance shaft
131 .....With pallet lock
132 ...With levers
133 ....In straight-line configuration
134 ..Pendulum type
135 ...With motion conversion drive
136 ...With gravity actuation
137 ...With beat adjuster
138 ....Having a verge
139 MECHANICAL TIME BASE

MECHANICAL TIME BASE
140 .Mainspring
141 ..With protection means
142 ..With mainwheel on barrel
143 ..With mainwheel on arbor
144 ..With attachment means for spring
145 ..With winding and setting
146 ...Stem
147 ..With winding
148 ...Self
149 ....Electric
150 .....Weight controlled
151 ....Spring
152 ...Gravity
153 ...Case controlled
154 ..With spring click
155 ELECTRICAL TIME BASE
156 .Solid state oscillating circuit type
157 ..For reciprocating or oscillating element
158 ...Balance wheel type
159 ...Crystal
160 .For reciprocating or oscillating element
161 ..Balance wheel type
162 ...With coil
163 ...With magnet
164 ...With opening and closing of contacts
165 ..Pendulum
166 ...With drive means control
167 ..Tuning fork
168 OSCILLATING OR RECIPROCATING MEANS
169 .Balance wheel type
170 ..With regulation
171 ...By compensation
172 ...By rack and pinion
173 ...By screw
174 ....With spring bias
175 ...By hairspring
176 ....With curb pins
177 ....With collet
178 ....With stud
179 .Pendulum type
180 ..Torsion
181 ..With regulation
182 ...By thermal compensation
183 ..With lock
184 REGULATING MEANS
185 .For setting
186 ..With rate regulation
187 ..By electrical device actuation
188 ...With single actuation and plural pulses
189 ...With pulse blocking means
190 ..By winding means (e.g., stem)
191 ...Having a clutch
192 ....With lever engagement
193 .....Coupling
194 ......To notch in stem
195 ....With coupling spring biased
196 ...Having a movable plate
197 ....With double gear
198 .....Cam engagement
199 .....Lever engagement
200 .For adjusting the frequency or beat
201 ..Of frequency divider
202 .For compensation
203 POWER SUPPLY DETAILS
204 .Electrical
205 ..Solar cell
206 WINDING MEANS
207 .Self
208 ..Inertia
209 .With overwind prevention
210 .With condition indicator
211 ..Audio
212 ..Pointer and scale
213 .For cranked lever
214 .Key
215 .Rim
216 .Stem
217 PULSE TRANSFORMING MEANS
218 .With transistor
219 ..Field-effect transistor
220 DISPLAY TRAINS
221 .For rotatable disk dial type
222 .For drum or plate dial type
223 DISPLAYS OR DISPLAY DEVICE DETAILS
224 .With manual activation
225 ..By motion or position
226 .With luminous material
227 .With auxiliary illumination for display
228 .Dial or hand
229 ..With animation (e.g., motion clock)
230 ..For tactile time perception (e.g., braille clock)
231 ..With time indicia shifting means
232 ..Including dial details only
233 ...Of rotatable disk type
234 ...Translucent
235 ...Of drum or plate type
236 ...Of dial fasteners
237 ....Screw
238 ..Including hand details only
239 .Optical
240 ..With circular pattern of light sources
241 ..With solid body light emitter (e.g., LED)
242 ..With liquid crystal display (i.e., LCD)
243 SIGNALLING MEANS
244 .Time condition responsive (i.e., alarm)
245 ..With variable loudness or tone
246 ..With same day plural time selection
247 ..For more than one day (e.g., eight-day clock)
248 ..With automatic repetition over short interval
249 ..With signal condition indicator
250 ..Electrical
251 ...With electronic memory storage
252 ...With contact on a circle
253 ...With contact on a hand
254 ...With cam control
255 ...With piezoelectric means
256 ...With optical signal
257 ...With mechanical let-off
258 ....Having alarm winding arbor
259 ...With combined alarm and time motor
260 ..With combined alarm and time motor
261 ..Plural
262 ..With shutoff
263 ...For short period
264 ...Having spring wind release
265 ..With let-off
266 ...Setting
267 .Repeat
268 ..Double snail
269 .Cam controlled
270 ..Snail
271 ..Pin
272 .Musical (e.g., "cuckoo-clock")
273 ..Chimes
274 .Recorded
275 .With deactivation during setting
276 CASES
277 .Adaptable
278 .Combined with disparate device
279 ..Ring
280 .Of particular material
281 .Wrist worn
282 ..With band or bracelet details
283 ..With a cover
284 .With tubular shape
285 .With ornamentation
286 .With protection means

CASES
.With protection means
287 ..Shock absorbing
288 ..For crown or stem
289 ...By waterproofing
290 ....Push-button stem type
291 ..Waterproofing
292 ...Noncircular-type case
293 ..Antimagnetic shielding
294 .With bezel or crystal details
295 ..Of bezel only
296 ..Of crystal only
297 .With details of center
298 ..Integral to front or back
299 .With movement ring details
300 .With movement securing means
301 .With pendant details
302 ..Bow
303 ...Fastener
304 ....Pin or screw
305 ....Sleeve
306 ..Crown or stem
307 ...Fastener
308 .With crown or stem details
309 .With front or back details
310 ..Of screw-threading to case center
311 ..Of opening spring
312 ...Cover connection
313 ..Of hinge connection
314 .With dial or sash securing means
315 .With alarm or striking attachment
316 .With support details
317 ..Base
318 PLATE DETAILS
319 CROWN OR STEM DETAILS
320 .Switch or detent
321 ..Electrical
322 ARBOR AND PINION DETAILS
323 CANNON PINION DETAILS
324 STAFF AND BEARING DETAILS
325 .Balance
326 ..For protection (e.g., shock absorbing)
327 MISCELLANEOUS

CLASS 369 DYNAMIC INFORMATION STORAGE OR RETRIEVAL

DECEMBER 1990

1 COMBINED INDEPENDENT AUDIO SYSTEMS
2 .Changeover between audio systems
3 ..Fading between plural signals
4 .Combining signals to form composite (e.g., mixing)
5 .One of systems having plural concurrent signals (e.g., stereophonic)
6 .Radio
7 ..Including recording from radio
8 ..Oscillator modulated by retrieved information signal
9 ..Mechanical phonograph
10 ..With common cabinet for cartridge or cassette
11 ..Including separable assembly
12 ..Cabinet details
13 STORAGE DIFFERENT FROM RETRIEVAL (E.G., OPTICAL RECORDING AND MAGNETIC REPRODUCTION)
14 SIMULTANEOUS DIVERSE TYPES OF STORAGE OR RETRIEVAL
15 ALTERNATIVE DIVERSE TYPES OF STORAGE OR RETRIEVAL
16 MECHANICAL PRODUCTION OF OPTICAL STORAGE TRACK
17 TRACK CONVERSION
18 OPTICAL READING OF MECHANICAL RECORD

****
CLASS 360 IS AN INTEGRAL....
PART OF CLASS 369 AS SHOWN..
BY THE POSITION OF THIS BOX.
****

19 CONTROL BY TIMER OR EXTERNAL EXTRANEOUS CONDITION
20 .By diverse art device
21 ..In vehicle or elevator
22 ..Audible indicator
23 ...Talking clock
24 OPERATOR-ACTUATED REMOTE CONTROL OR INFORMATION LOCATION
25 .Dictation or transcribing
26 ..Privacy
27 ..With access to or marking of specified location (e.g., indexing)
28 ...By stored additional signal (e.g., tone)
29 ..Remote station (e.g., multiple stations or recording devices)
30 .Selective addressing of storage medium (e.g., programmed access, "juke box")
31 ..Novelty device (e.g., talking doll)
32 ..With specified electrical information signal processing
33 ..With specified electrical control signal processing
34 ...Plural storage medium elements
35 ..Plural nontranslating storage elements (e.g., in situ)
36 ..With unitary plural disc carrier
37 ...Radial array
38 ...Moving linear array
39 ...Scanning turntable
40 ..By manually actuated mechanism for movement of tone arm
41 ..Of track on single storage medium
42 .By mechanical linkage
43 WITH SERVO POSITIONING OF TRANSDUCER ASSEMBLY OVER TRACK COMBINED WITH INFORMATION SIGNAL PROCESSING
44.11 .Optical servo system
44.12 ..Solid state optical element with plural dissimilar optical components (e.g., using I.C. block, etc.)
44.13 ..Dithering or wobbling the beam or track
44.14 ..Optical head servo system structure
44.15 ...Elastic, flexible, pliant or spring support of lens or mirror
44.16 ....Flat flexible support (e.g., parallel leaf spring, etc.)
44.17 ...Optical head element with rotary motion
44.18 ....Rotary head wheel or scanner (e.g., for use with arcuate, transverse or slant tracks, etc.)
44.19 ....Head element pivots on arm (e.g., optical head disk arm etc..)
44.21 ....Lens or mirror pivots off center (e.g., on a shaft, etc.)
44.22 ...Lens or mirror floats, (e.g., magnetic field support or lens/mirror can freely float and pivot about its own axis, etc.)
44.23 ...Structure for shaping beam or causing astigmatic condition
44.24 ....Means to mask or shield a portion of the beam
44.25 ..Servo signal compared to a reference signal
44.26 ..Servo system operation related to disc structure information format
44.27 ..Initialization/start-up or changing modes of system
44.28 ...While track jumping or crossing
44.29 ...Servo loop gain/switching control
44.31 ....Recording
44.32 ..Means to compensate for defect or abnormal condition
44.33 ...Recording (e.g., inhibit recording upon defect, etc.)
44.34 ..Sampling servo system
44.35 ..Servo loop gain/switching control
44.36 ...Variable gain
44.37 ..Plural incident beams
44.38 ...Recording
44.39 ..Recording
44.41 ..Arithmetic operation using plural photodetectors
44.42 ...Beam or detector is not rectangular or circular
47 CONTROL OF STORAGE OR RETRIEVAL BY A SIGNAL TO BE RECORDED OR REPRODUCED (E.G., PILOT OR CONTROL SIGNAL)
48 .Control of information signal channel
49 ..Of plural interrelated channels
50 .Mechanism control by information signal (e.g., voice responsive)
51 ..Control of spiral track spacing (e.g., signal variable pitch)
52 CONTROL STRUCTURE ON STORAGE MEDIUM SENSED BY OTHER THAN TRANSDUCER SUPPORT (E.G., CONDUCTIVE STRIP, NOTCHED EDGE SENSOR)
53 WITH CONDITION INDICATING (E.G., MONITORING) OR TESTING
54 .With radiation storage or retrieval
55 .Of transducer
56 ..Location on storage medium
57 ..Positioning adjunct (e.g., indexing)
58 .Of record carrier
59 WITH BINARY PULSE TRAIN INFORMATION SIGNAL
60 SIGNAL PROCESSING BY STORAGE AND SUBSEQUENT RETRIEVAL (E.G., FREQUENCY SHIFT, DELAY)
61 STORAGE OF DIRECTLY RETRIEVABLE MODULATED R.F. OR SUPERAUDIBLE CARRIER SIGNAL
62 STORAGE OF SIGNAL MODULATING COMPONENT
63 SOUND REPRODUCTION FOR TOY OR NOVELTY DEVICE (E.G., TALKING DOLL)
64 .With electrical information signal processing
65 .Indexing to track (e.g., consecutive)
66 ..By chance

SOUND REPRODUCTION FOR TOY OR NOVELTY DEVICE (E.G., TALKING DOLL)
67 .With beginning or end of cycle stylus return
68 .Manual motion application (e.g., novelty card, hand-held stylus)
69 SYSTEMS OR SUBSYSTEMS COMBINED WITH DIVERSE ART DEVICE
70 .For control of diverse art device
71 WITH STYLUS CLEANING OR TREATMENT (E.G., GRINDING)
72 WITH STORAGE MEDIUM CLEANING OR ELECTROSTATIC CHANRGE NEUTRALIZATION
73 .By charge leakage (e.g., ionized particles)
74 .By tone arm attachment
75.1 WITH PARTICULAR CABINET STRUCTURE
75.2 .With mechanism to place disc on a turntable
76 .With electrical information signal processing
77.1 .Slotted for edgewise insertion of storage disc
77.2 ..Having disc stored in protective jacket
78 .With lid-mounted transducer assembly carrier
79 .With closure-operated interlock or braking actuator
80 .Particular acoustical structure (e.g., baffle)
81 ..Having collapsible or expandable acoustic path
82 ..Having parallel acoustic paths
83 EDITING OF STORED INFORMATION
84 DUPLICATION OR COPYING (E.G., RERECORDING)
85 .To diverse type of storage medium
86 STORAGE OR RETRIEVAL OF SPATIALLY RELATED ACOUSTIC SIGNALS (E.G., STEREO)
87 .Simulated spatial effect (e.g., pseudo-stereo)
88 .With transformation or intentional distortion of information signal (e.g., preemphasis)
89 .Quadraphonic
90 ..Including modulated subchannel signal
91 .Having distinct electrical channels
92 .Including distinct storage tracks on record medium
93 SYSTEMS HAVING PLURAL PHYSICALLY DISTINCT INDEPENDENT TRACKS ON A SINGLE STORAGE MEDIUM SURFACE
94 .Having layered storage medium
95 .Common time base (i.e., simultaneous)
96 .Continuous consecutive storage or retrieval of interrupted track for single signal (e.g., automatic reversal)
97 ..Tracks transverse to a motion component
98 .Indexing to discrete signal tracks (e.g., consecutive, by chance)
99 SPECIFIC DETAIL OF INFORMATION HANDLING PORTION OF SYSTEM
100 .Radiation beam modification of or by storage medium
101 ..Invisible radiation (e.g., electron beam or X-ray)
102 ..Multiplex
103 ..Holographic
104 ..Ribbon light modulator
105 ..Penumbra or push-pull optical system
106 ..Optical feedback
107 ..Ground noise suppression, signal envelope, or plural optical modulation
108 ..Color
109 ..With diffraction (e.g., pits, grating)
110 ..By polarization
111 ..Spiral or helical track
112 ..With particular imaging element
113 ..With medium contacting drum or gate in optical system (e.g., sound head)
114 ...Movable roller support for optical path
115 ...With driving or stabilizing mechanism
116 ..Light intensity adjustment or maintenance
117 ..Having movable shutter or light gate
118 ..With detail, configuration, or adjunct of element having slit or aperture in radiation path
119 ...With movement of optical beam (e.g., galvanometer)
120 ..Having particular radiation sensor
121 ..With particular light source (e.g., laser, CRT with phosphor)
122 ...Solid state
123 ...Glow lamps
124 ..With details of electrical signal procesing
125 ..Having photographic storage medium (e.g., variable density or area)
126 .Electrical modification or sensing of storage medium (e.g., capacitive, resistive, electrostatic charge)
127 .Mechanical modification or sensing of storage medium
128 ..With electrical information signal processing
129 ...From information modulated oscillator
130 ...Sensing of elastic deformation or relaxation of storage medium (e.g., skid type)
131 ...Bidirectional information flow (e.g., record/replay switching)
132 ...Recording
133 ....With transformation or intentional distortion of information signal (e.g., compensation for velocity variation with diameter)
134 ...With particular amplification characteristic or signal control circuitry (e.g., muting)
135 ..Specified structure of electrical transducing assembly
136 ...Multichannel (stereo cartridge)
137 ....By stress application to solid transducing element (e.g., piezoelectric)
138 .....With adjustable or replaceable stylus coupling structure
139 ....With details of damping or compliance
140 ...Plural styli
141 ...Plural alternative or with signal handling adjunct
142 ...Stylus controlled optical element
143 ...Electron tube
144 ...Electret or piezoelectric
145 ...Semiconductive
146 ...Magnetic field variation (e.g., magnetostrictive)
147 ....Moving signal coil
148 ....Variable reluctance
149 .....Fixed coil surrounding fixed part of magnetic path
150 ...Capacitive or electrolytic liquid
151 ...Electrostatic or capacitive
152 ...Variable resistance
153 ..Including treatment to facilitate storage (e.g., storage medium softening)
154 ...Heating (e.g., heated stylus)

SPECIFIC DETAIL OF INFORMATION HANDLING PORTION OF SYSTEM
.Mechanical modification or sensing of storage medium
155 ..Mechanical conversion to or from sound
156 ...Including fluid coupling in force linkage
157 ...Sound box with mounting structure
158 ...Acoustical tone arm
159 ....Having plural acoustical paths
160 ...Sound box
161 ....With interchangeable styli
162 ....Including stylus pivoted from fixed casing
163 ....With sound modification
164 ....Convertible between lateral and perpendicular modulation modes
165 ....Perpendicular mechanical modulation
166 .....Recording
167 .....With mechanical amplification (e.g., frictional coupling)
168 .....Floating weight
169 ....Lateral mechanical modulation
170 ..Stylus holder or shield
171 ...With structure to interchange styli
172 ....By replacement
173 ..Stylus
174 .Including signal modification
175 ..Frequency dependent (e.g., separation)
176 DYNAMIC MECHANISM SUBSYSTEM
177 .Having stationary storage medium
178 .Access of multiple storage elements (e.g., record changer)
179 ..Cylindrical storage element
180 ..Flexible disc
181 ..Stack height adjustment for tone arm or turntable
182 ..Numerical count shut-off
183 ..Cam shaft transverse to turntable spindle axis of record changer
184 ..Tone arm position control by sensing of disc (e.g., disc or hole size)
185 ...Disc size sensor on or using tone arm
186 ...Stepped tone arm stop element
187 ...Disc size sensor in feed path
188 ...Disc size sensor at turntable position
189 ..Turntable speed control
190 ...By sensing of disc (e.g., disc or hole size)
191 ..Storage disc fed to and removed from turntable
192 ...Plural disc holder having unitary separating structure
193 ...Grouped removal with sequential feed
194 ...Coplanar storage
195 ...Both sides of disc used
196 ..Separate motors operate turntable and disc change mechanism
197 ..Plural turntables
198 ...Plural tone arms
199 ..Both sides of disc used
200 ...By inverting disc
201 ..Discs sequentially removed from turntable
202 ..Discs sequentially fed to turntable
203 ...Tone arm set down adjustment
204 ...By edge controlled feeding of disc
205 ....With feed cooperating structure on spindle
206 ...By center hold feeding of disc (e.g., spindle drop)
207 ....Support mechanism adapter for large hole records on small hole spindles
208 ....Having specified spindle structure
209 .....Umbrella type
210 .....Having shoulder and ejector lever
211 ......With edge stabilizer
212 ..Auxiliary structure (e.g., shut-off preventer, disc spacer)
213 .Additional motion of storage element support to effect tracking
214 ..Cylindrical storage element
215 .Having power driven transducer assembly
216 ..Having tone arm set-down control
217 ...By disc sensing (e.g., by sensed disc or hole size)
218 ..Having groove engaging driving element
219 ..With drive transverse to storage track during storage or retrieval
220 ...Controlled by transducer assembly support
221 ...With additional drive (e.g., scanning, restoring, or return)
222 ...Having pivoted tone arm
223 ...By lead screw
224 ..With passive linear tracking
225 ..Restoring after passive tracking
226 ...Responsive to transducer support condition (e.g., movement or position)
227 ....Numerical count replay
228 ....Controllable position
229 ...Turntable mounted template
230 ..Power cueing (i.e., engage/disengage)
231 .Mechanism responsive to control structure on storage medium sensed by transducer assembly support (e.g., trip device)
232 ..With turntable braking (e.g., velocity or reverse responsive)
233 .Mechanism condition or storage medium responsive control
234 ..With turntable braking (e.g., tone arm position responsive)
235 ...With stopping of motor
236 ...Adjustable
237 ...With electrical control of brake
238 ...End limit sensor coupled with tone arm
239 ..Speed
240 ...Variable radius compensation (e.g., constant interaction speed)
241 ...Self-responsive (e.g., governor)
242 ..Antiskating
243 ..Energizing circuit
244 .Specific detail of transducer assembly support structure (e.g., tone arm)
245 ..With manual tone arm displacement adjunct (e.g., cueing)
246 ...With viscous limiting of motion (e.g., rate damping)
247 ..Vibration or resonance suppression (e.g., damping)
248 ...By viscous damping
249 ..Having linear guide
250 ..Pivoted arm with tracking path compensation
251 ..Having application of counterbalancing force
252 ...Lateral (e.g., antiskating)
253 ...By resilient force element (e.g., spring)
254 ...Specified weight mounting
255 ..Having specified bearing structure
256 ..Mechanical details of cartridge mounting
257 ..Rest
258 .Specific detail of storage medium support or motion production
259 ..For endless web looped about plural rotatable mounts (e.g., belt)
260 ..For cylinder
261 ..For pliable (e.g., floppy) disc
262 ..With storage medium removal adjunct

DYNAMIC MECHANISM SUBSYSTEM
.Specific detail of storage medium support or motion production
263 ..Mounting structure for support or motion producing assembly (e.g., vibration damping
264 ..Turntable
265 ...With auxiliary turntable
266 ...Driving mechanism
267 ....Speed changing
268 ...Braking
269 ...Bearing structure
270 ...Disc holding or locating (e.g., spindle structure)
271 ....With detail of storage medium contact structure on turntable surface
272 STORAGE MEDIUM STRUCTURE
273 .Combined with diverse art structure
274 .Composite (e.g., package with preview record)
275.1 .Optical track structure (e.g., phase or diffracting structure, etc.)
275.2 ..Erasable, reversible or re-recordable
275.3 ..Track data format/layout
275.4 ..Pit/bubble/groove structure specifies
275.5 ..Protection (e.g., preventing damage to medium, etc.)
276 .Electrical track structure
277 .Special groove (e.g., particular groove shape)
278 ..Groove acts as control system signal
279 ..Guide during storage or retrieval
280 .Specific disc profile
281 ..With interdisc coupling
282 .Specified center hole or locating structure
283 .Layered (e.g., permanent protective layer)
284 ..Radiation beam modified or controlling (e.g., photosensitve, optical track)
285 ...With mask
286 ..Laminated or unified discrete layers
287 .Flexible
288 .Specified material
289 .Adjuncts or adapters
290 ..For central area of disc (e.g., hole size or drive sticker)
291 ..Protectors
292 MISCELLANEOUS

CLASS 370 MULTIPLEX COMMUNICATIONS

DECEMBER 1990

1	OPTICAL
2	.Polarization
3	.Frequency division
4	.Time division
5	PHANTOM
6	CROSS TALK SUPPRESSION
7	AMPLITUDE COMPRESSION/EXPANSION
8	PULSE WIDTH AND PULSE POSITION MODULATION
9	PULSE WIDTH (PULSE DURATION) MODULATION
10	PULSE POSITION MODULATION
125	SIMULTANEOUS TELEGRAPHY AND TELEPHONY
11	PLURAL DIVERSE MODULATION TECHNIQUES
12	PHASE MODULATION
13	TESTING (OTHER THAN SYNCHRONIZATION)
13.1	.Of repeater
14	.Path check
15	.Loopback
16	.Alternate routing in response to failure
16.1	..Loop or ring
17	.Determination of communication parameters
18	CODE WORD MULTIPLEX
19	GENERALIZED ORTHOGONAL OR SPECIAL MATHEMATICAL TECHNIQUES
20	.Quadrature carries
21	.Particular set of orthogonal functions
22	..Walsh functions
23	.Fourier transform
24	DUPLEX
25	.Artificial line
26	.Duplex repeaters/extenders
27	.Differential
28	.Bridge
29	.Time division
30	.Frequency division
31	.Convertible to half duplex
32	.Transmit/receive interaction control
32.1	..Echo suppression or cancellation
33	SEXTUPLEX
34	QUADRUPLEX
35	.Repeaters
36	.Duplex diplex
37	DIPLEX
38	PLURAL USAGE OF COMMON ANTENNA
39	.Common heterodyne stage
40	.Carrier control to prevent interaction among connected devices
41	LOW SPEED ASYNCHRONOUS DATA SYSTEMS (E.G., TELETYPEWRITER SERVICE)
42	.Data switching exchanges
43	.Data assembly or formatting
44	.Transmitting time of transition and logic state
45	.Channels separated in frequency
46	.Rotary distributor
47	..Synchronizers
48	...Start-Stop
49	....Nonmechanical
49.5	TRANSMULTIPLEXERS
50	COMBINED TIME DIVISION AND FREQUENCY DIVISION
51	RESONANT TRANSFER TECHNIQUES
52	RESONANT TRANSFER SUBSTITUTES
53	MULTIPLEX SWITCHING
54	.Pathfinding
55	.Drop channel
56	.Concentrators
57	.FDM Switching (Frequency Division Multiplexing)
58.1	.TDM switching (time division multiplex)
58.2	..Control processing
58.3	...Distributed
59	..T-S (Time-Space) or S-T
60	..Packet or addressed data
60.1	...Combined with circuit switching
61	..Store and forward
62	..Special services with switching (e.g., conference)
63	..TST (Time-Space-Time)
64	..STS (Space-Time-Space)
65	..Folded network
65.5	..Space stage per se
66	..Time only
67	...Bus switch
68	..Time slot interchangers per se
68.1	..With signalling feature
69.1	FREQUENCY DIVISION
120	.Multiple frequency translations
121	.Carrier generation
122	.Angle modulation
123	.Filtering techniques
70	.Digital analysis or synthesis of group
71	.Subscriber carrier
72	..Connecting filters
73	..Program distribution
124	.Bus (distributed stations)
74	.Pilot
75	.Repeaters
76	.Signalling
77	TIME DIVISION
78	.Polarity multiplex
79	.Adaptive systems
80	..Only active channels transmitted
81	...TASI (Time assigned speech interpolation)
82	..Frame length
83	..Byte length
84	..Rate
85.1	.Bus transmission
85.2	..Contention
85.3	...Carrier sense
85.4	...Token passing
85.5	....Loop or ring
85.6	..Priority
85.7	..Variable channel assignment
85.8	...Polling
85.9	..Plural bus
85.11	...With separate control bus
85.12	...Loop or ring
85.13	...Bridge between bus systems
85.14	....Interconnection between ring or loop
85.15	..Loop or ring
91	.Asynchronous and nonsynchronous
92	..Address transmitted
93	...Multiple access, discrete address
94.1	...Packet
94.2	....Combined with synchronous information
94.3	....Star, tree or mesh networks
95.1	.Variable channel assignment
95.2	..Polling
95.3	..Time division multiple access
97	.TDM pulse repeater
98	.Pilot
99	.Byte assembly and formatting
100.1	.Synchronizing
101	..Reference indication consists of a gap
102	..Pulse stuffing or deletion
103	..Mutual (reciprocal) synchronization
104.1	..Moving satellite
105	..Distributed
105.1	..Frame
105.2	..Channel
105.3	..Bit phase or jitter
105.4	..Unique synchronization word
105.5	..Unique synchronization pulse
106	..Plural synchronizing words
107	..Pseudo-random
108	..Including delay device
109	.Time compression or expansion
110.1	.Signalling (ancillary to main information)
110.2	..Digital tone signal generation
110.3	..Digital tone detection

	TIME DIVISION
	.Signalling (ancillary to main information)
110.4	..Superimposed or modulated on principal information
111	..Inserted in gaps in main information
112	.Multiplexers/distributors (hierarchy and level)
113	..Apparatus and techniques for handling low level input signals
114	..Pulse amplitude modulation
115	..Electron beam switcing device
116	.Staircase wave
117	.Magnetic core for switching or storage
118	TRANSMISSION BANDWIDTH CONSERVATION
119	Miscellaneous

CLASS 371 ERROR DETECTION/CORRECTION AND FAULT DETECTION/RECOVERY

1	SKEW DETECTION/CORRECTION
2.1	DATA FORMATTING TO IMPROVE ERROR DETECTION/CORRECTION CAPABILITY
2.2	.Memory access (e.g., address permutation)
3	TESTING OF ERROR-CHECK SYSTEM
4	ERROR/FAULT ANTICIPATION
5.1	ERROR COUNT OR RATE
5.2	.Pseudo-error rate
5.3	.Up-down counter
5.4	.Synchronization control
5.5	.Shutdown or establishing system parameter (e.g., transmission rate)
6	DATA PULSE EVALUATION/BIT DECISION
7	APPARATUS FAULT RECOVERY
8.1	.Replacement with spare device or system
8.2	..Transmission facility or channel
9.1	..Standby data processor or computer
10.1	..Memory
10.2	...Spare location, portion or segment
10.3	....Spare row or column
11.1	.Reconfiguration
11.2	..Transmission facility
11.3	..Data processor or computer
12	.Program restart/operation retry
13	..Storage readout
14	.Fail-safe shutdown
15.1	DIAGNOSTIC TESTING
16.1	.Programmable processor testing
16.2	..Emulator device
16.3	..Watchdog timer (e.g., time-out)
16.4	..Processor within diverse device (microwave, photocopier)
16.5	..Error or fault, logging or tracking
17	..Operator controlled
18	..Dedicated maintenance subsystem
19	.Testing of computer programs
20.1	.Transmission facility testing
20.2	..For channel having repeater
20.3	..By tone signal
20.4	..Test pattern with comparison
20.5	...Loop-back
20.6	..Loop or ring configuration
21.1	.Memory
21.2	..Read-in with read-out and compare
21.3	...Special test patterns (e.g., checkerboard, walking ones)
21.4	..Electrical parameters (e.g., threshold voltage)
21.5	..Arithmetic function of memory contents
21.6	..Error mapping or logging
22.1	.Digital logic testing
22.2	..Programmable logic array (PLA) testing
22.3	..Scan path testing (LSSD)
22.4	..Signature analysis
22.5	..Built-in testing circuit (BILBO)
22.6	..Structural (in-circuit test)
23	.Fault simulation/circuit simulation
24	.Device response compared to input pattern
25.1	.Device response compared to expected fault-free response
26	.Device response compared to fault dictionary/truth table
27	.Including test pattern generator
28	.Determination of marginal operation limits
29.1	.Error or fault, logging or tracking (e.g., status display)
29.5	.Bus fault testing
30	DIGITAL DATA ERROR CORRECTION
31	.Substitution of previous valid data
32	.Request for retransmission
33	..Retransmission if no ACK returned
34	..Feedback to transmitter for comparison
35	..Including forward error correction capability
37.1	.Block code
37.2	..Double error correcting with single error correcting code
37.3	..Error correction during refresh cycle
37.4	..Double encoding codes (e.g., product, concatenated)
37.5	...Cross-interleave reed-solomon code (CIRC)
37.6	..Parallel generation of check bits
37.7	..Error correcting code with additional error detection code (e.g., cyclic redundancy character, parity)
37.8	..Look-up table encoding or decoding
37.9	..Threshold decoding (e.g., majority logic)
38.1	..Random and burst error correction
39.1	..Burst error correction
40.1	..Memory access
40.2	...Error correct and restore
40.3	...Error pointer
40.4	...Check bits stored in separable area of memory
41	..Adaptive error-correcting capability
42	..Synchronization
43	.Convolutional code
44	..Random and burst errors
45	..Burst errors
46	..Synchronization
36	.Majority decision/voter circuit
47.1	ERROR DETECTION FOR SYNCHRONIZATION CONTROL
48	ERROR/FAULT DETECTION TECHNIQUES
49.1	.Parity bit
49.2	..Parity generator or checker circuit detail
49.3	..Even and odd parity
49.4	..Parity prediction
50.1	..Plural dimension parity check
51.1	..Storage accessing (e.g., address parity check)
52	.Constant-ratio code (m/n)
53	.Check character
54	..Modulo-n residue check character
55	.Code constraint monitored
56	..Multilevel coding (n>2)
57.1	.Forbidden combination or improper condition
57.2	..Specified digital signal or pulse count
59	..Two key-down detector
60	..Improper operation sequence
61	..Data timing/clocking
62	..Time delay/interval monitored
63	..Two-rail logic
64	..Noise level
65	..Missing-bit/drop-out detection
66	..Power failure
67.1	.Comparison of data
68.1	..Plural parallel devices of channels
68.2	...Transmission facility
68.3	...Data processor or computer
69.1	..Sequential repetition
70	...True and complement data
71	..Device output compared to input
72	MISCELLANEOUS

CLASS 372 COHERENT LIGHT GENERATORS

DECEMBER 1990

1	SUPERRADIANT LASER
2	FREE ELECTRON LASER
3	RAMAN LASER
4	LONG WAVELENGTH (E.G., FAR INFRARED)
5	SHORT WAVELENGTH LASER
6	OPTICAL FIBER LASER
7	THIN FILM LASER
8	LASER LOGIC SYSTEM
9	PARTICULAR BEAM CONTROL DEVICE
10	.Q-switch
11	..Absorption type
12	..Electro-optic
13	..Acousto-optic
14	..Mechanical
15	...Rotating mirror
16	...Rotating prism
17	..Plural Q-switches
18	.Mode locking
19	.Mode discrimination
20	.Tuning
21	.Nonlinear device
22	..Frequency multiplying (e.g., harmonic generator)
23	.Producing plural wavelength output
24	.Scanning
25	.Control of pulse characteristics
26	.Modulation
27	..Polarization
28	..Frequency
29	.Output stabilization
30	..Pulse
31	..Amplitude
32	..Frequency
33	PARTICULAR OPERATING COMPENSATION MEANS
34	PARTICULAR TEMPERATURE CONTROL
35	.Liquid coolant
36	.Heat sink
37	HAVING AN APPLIED MAGNETIC FIELD
38	WITH PARTICULAR COMPONENT CIRCUITRY
39	PARTICULAR ACTIVE MEDIA
40	.Amorphous (e.g., glass)
41	.Insulating crystal
42	..Utilizing color centers
43	.Semiconductor
44	..Injection
45	...Particular confinement layer
46	...Particular current control structure
47	....Transverse junction
48	....Channeled substrate
49	...Particular coating on facet
50	...Monolithic integrated
51	.Liquid
52	..Chelate
53	..Dye
54	..Particular structural features
55	.Gas
56	..Metal vapor
57	..Excimer or exciplex
58	..With means for controlling gas flow
59	..Gas maintenance (e.g., purification, replenishment, etc.)
60	..Including a specified gas additive
61	..Discharge tube feature
62	...Segmented
63	...Backflow feature
64	...Waveguide
65	...Support
66	.Active media with particular shape
67	..Disc-shaped
68	.Plural active media or active media having plural dopants
69	PARTICULAR PUMPING MEANS
70	.Pumping with optical or radiant energy
71	..End-pumped laser
72	..Pump cavity
73	..High-energy particles
74	...Electron beam
75	..Semiconductor
76	..Plasma
77	..Exploding or combustible material
78	..Heat
79	..Solar
80	..Excited phosphor
81	.Electrical
82	..Inductive or capactive excitation
83	..Transversely excited
84	...Traveling wave
85	..Glow discharge
86	..Having an auxiliary ionization means
87	..Having particular electrode structure
88	...Hollow electrode
89	.Chemical
90	.Gas dynamic
91	.With depopulation of lower states
92	PARTICULAR RESONANT CAVITY
93	.Folded cavity
94	..Having a ring configuration
95	.Unstable resonator
96	.Distributed feedback
97	.Plural cavities
98	.Specified cavity component
99	..Reflector
100	..Prism
101	..Lens or lens system
102	..Grating
103	..Window, aperture, and mask
104	...Aerodynamic window
105	..Birefringent material
106	..Polarizer
107	.Mirror support or alignment structure
108	.Specified output coupling device
109	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
700	.Optical delay
701	.Nozzle
702	.Isotope
703	.Optical isolater
704	.Summary reference
705	.Neat thing

CLASS 373 INDUSTRIAL ELECTRIC HEATING FURNACES

DECEMBER 1990

1 PLURAL DIVERSE HEATING MEANS
2 .Arc
3 ..With resistance
4 ..With induction
5 .Resistance
6 ..With induction
7 .Induction
8 ENVIRONMENTAL CONTROL
9 .Arc furnace
10 ELECTRON BEAM FURNACE DEVICE
11 .Vaporizing furnace
12 ..Power supply and control circuit
13 ..Gun assembly
14 ...With deflection control
15 .Ingot remelting
16 .With plural beam devices
17 .Zone melting
18 PLASMA FURNACE DEVICE
19 .Indirect heating
20 ..Rotary furnace
21 .Remelting furnace (i.e., ingot remelting)
22 .Direct furnace (i.e., plasma flame impinges on the melt)
23 ..Expanded arc column
24 ..Sidewall mounted plasmatron
25 ..Control system
26 GLOW DISCHARGE FURNACE DEVICE
27 GLASS FURNACE DEVICE
28 .Filament discharge (i.e., bushing)
29 .Joule effect heating
30 ..Furnace body detail
31 ...Multi-chamber
32 ....With heating between chambers
33 ..Charging or discharging
34 ...Including batch pre-heating
35 ...Including discharge area heating
36 ..Electrode assembly
37 ...Protection means
38 ...Holder
39 ..Electrical system
40 ...Regulation
41 ...Electrode arrangement (e.g., array)
42 ELECTROSLAG REMELTING DEVICE
43 .Plural furnace units
44 .Body detail
45 ..Crucible
46 .Start-up
47 .Power supply system
48 ..Conductor arrangement
49 ..Control
50 ...By changing electrode position
51 .Electrode replacement
52 .Electrode support
53 ..Plural electrodes
54 .Electrode
55 ..With protective shield
56 WITH CONDENSATING DEVICE
57 .Including resistance furnace detail
58 ..With open circuit (i.e., charge internal resistance heating)
59 .Including induction furnace detail
60 ARC FURNACE DEVICE
61 .Indirect
62 ..Arc between spaced electrodes
63 ...Charge fed into space
64 ...With arc deflection means
65 ..Arc between electrode and crucible exterior
66 ..Combined with or convertible to direct arc furnace
67 .Ingot remelting
68 ..With internal atmosphere control (e.g., pressure, vacuum, etc.)
69 ..With electrode holder or guide
70 ..With power regulation
71 .Furnace body detail
72 ..Hearth or crucible
73 ..Roof
74 ...With cooling
75 ..Sidewall
76 ...With cooling
77 ..With internal atmosphere control (e.g., pressure, vacuum, etc.)
78 .Plural furnace units
79 .Charging or discharging
80 ..With charge pre-heating
81 ..Top charging
82 ...Through electrode
83 ..Bottom pour
84 ..Discharge by tilting
85 .For manipulation of the charge or melt (e.g., stirring)
86 ..Mechanical
87 ..Crust breaking device
88 .Electrode
89 ..Self-baking (i.e., Soderberg)
90 ..Non-consumable
91 ..Sectional
92 ...With means to join sections
93 ..Composite (e.g., water cooled body with carbon tip)
94 .Electrode support
95 ..Seal
96 ..With electrode shield
97 ..For Soderberg electrode (e.g., casing)
98 ..Mast
99 ...Crosshead
100 ..Slipping holder
101 ..With electrical contact or terminal
102 .Power supply system
103 ..Cable or cable suspension arrangement
104 ..With power regulation
105 ...By changing arc length
106 ....Using a hydraulic or pneumatic device
107 ..With magnetically influenced arc
108 ..D.C. power
109 RESISTANCE FURNACE DEVICE
110 .With internal atmosphere control (e.g., pressure, vacuum, etc.)
111 ..Having tubular charge containing or supporting element
112 ..Vacuum
113 .For cooling
114 ..Terminal
115 .Charging or discharging
116 .For manipulation of the charge or melt (e.g., stirring)
117 .With heating element detail
118 ..Resistance crucible
119 ..Wall contained
120 ..Open circuit (e.g., charge internal resistance heating)
121 ...Salt bath heating
122 ...Including crucible or hearth structure details
123 ...With preheating
124 ....Including starting resistor
125 ...Including terminal detail
126 ....With axial bore
127 ..Having resistance encasement means
128 ..Mounting
129 ...Base
130 ...Side wall
131 ....With resistor element compression
132 ..Non-metallic resistor
133 ...Rod-like
134 ..Including resistor shape detail
135 .Control
136 ..Temperature
137 .Lining
138 INDUCTION FURNACE DEVICE
139 .Zone melting
140 .With internal atmosphere control (e.g., pressure, vacuum, etc.)

INDUCTION FURNACE DEVICE
.With internal atmosphere control (e.g., pressure, vacuum, etc.)
141 ..Vacuum
142 .For charging or discharging
143 ..By tilting
144 .Having plural heating elements
145 .Having condition signaling means
146 .With means for manipulation of the charge or melt (e.g., stirring)
147 .Power supply system
148 ..Regulating
149 .For furnace regulating
150 ..Electrical
151 .Coreless
152 ..Coil
153 ...Support
154 ...Cooling
155 ..Lining
156 ..Crucible
157 ...Conducting (e.g., graphite)
158 ..Cooling
159 .Core-type (i.e., channel)
160 ..Coil
161 ..Channel
162 ...Lining
163 ..Crucible or hearth
164 ..Lining
165 ..Cooling
166 MISCELLANEOUS

1	THERMAL CALIBRATION SYSTEM
2	.By thermal radiation emitting device (e.g., blackbody cavity)
3	.By immersion in liquid having controlled temperature
4	LEAK OR FLAW DETECTION
5	.With heating or cooling of specimen for test
6	DISTANCE OR ANGLE
7	.Thickness, erosion, or deposition
8	FLAMMABILITY TESTING
9	EMISSIVITY DETERMINATION
10	DIFFERENTIAL THERMAL ANALYSIS
11	.Detail of electrical heating control
12	.Detail of sample holder or support therefor
13	..Formed by thermoelectric element
14	THERMAL GRAVIMETRIC ANALYSIS
15	BY APPLYING KNOWN THERMAL GRADIENT (E.G., INDICATION OF RESPONSE BY LOCATION)
16	TRANSFORMATION POINT DETERMINATION (E.G., DEW POINT, BOILING POINT)
17	.By change in optical property (e.g., transmission)
18	..By reflection (e.g., polished surface)
19	...Sensed by instrument (e.g., photocell)
20	....Controlling heating or cooling
21	.By electrical condition of specimen
22	.By change in motion of movable element
23	..Driven element
24	.By change in pressure of flow rate
25	.By thermal arrest (e.g., time-temperature curve)
26	..Of molten metal (e.g., carbon content)
27	.Between gaseous and liquid states
28	..Dew point
29	HEAT FLUX MEASUREMENT
30	.By differential temperature measurement along undisturbed thermal gradient
31	CALORIMETRY
32	.Total radiant energy or power measurement
33	.With control of heat added to or lost from a sample container (e.g., isothermal calorimetry)
34	..With controlled adiabatic shield
35	.Heat absorbing heigh temperature gas probe (e.g., enthalpy or fluid cooled probe)
36	.Heat value of combustion (e.g., 'calorific value')
37	..Having specified control of input of mixture
38	..Having bomb or cartridge ignition chamber
39	.Gain or loss of heat by heat utilizing load in path of heat exchange fluid
40	..Determined by combining flow rate and temperature signals of heat exchange fluid
41	...Signals combined electrically
42	.Throttling calorimeter (e.g., steam quality)
43	DETERMINATION OF INHERENT THERMAL PROPERTY (E.G., HEAT FLOW COEFFICIENT)
44	.Thermal conductivity
45	THERMAL TESTING OF A NONTHERMAL QUANTITY
46	.With loading of specimen (e.g., stress or strain)
47	..Cyclic
48	...Torsional
49	..Tensile
50	...With detail of heating or cooling structure
51	..Compressional
52	..Bending or flexing
53	.Of cure or hardenability
54	.Of fluid volume
55	.Expansion or contraction characteristics (e.g., dilatometry)
56	..Including electrical sensor
57	.Of susceptibility to thermally induced deteriouration, flaw, or failure
100	TEMPERATURE MEASUREMENT (E.G., THERMOMETER)
101	.Composite temperature-related paramenter
102	..Time-temperature relationship (e.g., integral, deterioration, change)
103	...Time-temperature integration performed by particular circuit arrangement
104	...Peak (maximum or minimum) with respect to time
105	....Indicating tube with sensing material return prevention
106	....Permanent visual indication (i.e., irreversible)
107	...Rate of change
108	...Degree-days
109	..Climate related (e.g., wind-chill factor, discomfort index)
110	..Plural spaced temperature function
111	...Highest or lowest of spaced temperatures
112	...Difference or gradient
113	....By thermoelements connected in series opposition
114	....By current modifying elements in circuit (e.g., bridge)
115	...Space average
116	...By single sensor (e.g., elongate or with plural fluid intakes)
117	.By a vibratory effect (e.g., resonant frequency, acoustical)
118	..Resonant frequency by fluid flow
119	..Vibration velocity (e.g., echo timing)
120	.In spaced noncontact relationship to specimen
121	..By thermally emitted radiation
122	...By microwave arrangement
123	...Transparent material measurement or compensation (e.g., spectral line, gas, particulate suspension
124	...With scanning or temperature distribution display
125	...With fluid flow purging device
126	...Having emissivity compensating or specified radiating surface
127	...Having significant frequency limitation or relationship (e.g., peak, ratio)
128	...Having significant signal handling circuitry (e.g., linearizing, emissivity compensation)
129	...Comparison with radiation reference standard
130	...Optical system structure (e.g., lens)
131	....With radiation conducting element
132	...Sensor or mounting temperature control
133	...Ambient temperature compensated (e.g., dummy sensor)
134	..Extrapolation (e.g., simulation, heat flow)
135	..By fluid flow within or to sensor (e.g., convection, heat transfer, differential pressure)
136	.Geophysical (e.g., well bore, underwater)
137	.Temperature distribution or profile
138	.With fluid flow deflector
139	.Of molten metal
140	..Lance (e.g., consumable)

TEMPERATURE MEASUREMENT (E.G., THERMOMETER)

141 .Combined with diverse art device
142 ..With other measuring device
143 ...Pressure
144 ..With combustion engine
145 ...Cooling system
146 ....Radiator cap mounted thermometer
147 ..With fluid carrying conduit (e.g., shower pipe)
148 ...Sensor within conduit
149 ..With cooking compartment or door thereof (e.g., oven)
150 ..With bottle (e.g., nursing)
151 ..With confection or infant pacifier
152 ..With electrical component (e.g., transformer)
153 ..With roll or rotary specimen or support
154 ...With coupling between rotating sensor and stationary electrical circuitry
155 ..With percing element
156 ..With float
157 ..With sampling cup
158 .With removable cover for sensor (e.g., disposable sheath)
159 .Nonelectrical, nonmagnetic, or nonmechanical temperature responsive property
160 ..Melting or softening
161 ..Change of optical property
162 ...Color
163 .By electrical or magnetic heat sensor
164 ..With preheated sensing probe
165 ..With heat exchanger or conductor
166 ..At plural zones
167 ...Scanning
168 ..With self-rebalancing arrangement (e.g., servo-potentiometer, thermal link)
169 ..With thermal lag compensation
170 ..Digital output
171 ...With digital linearizing circuitry
172 ..With compensation for sensor nonlinearity or lead impedance
173 ...By feedback in amplifier circuit or with constant current source in circuit
174 ..By conductive fluid or work function within sensor (e.g., ionization)
175 ..Thermal noise generated in conductor
176 ..Including sensor having hysteresis or cryogenic property (e.g., ferromagnetism, superconductivity)
177 ...Ferroelectric
178 ..By barrier layer sensing element (e.g., semiconductor junction)
179 ..By thermoelectric potential generator (e.g., thermocouple)
180 ...Specimen is part of thermoelectric circuit
181 ...Reference junction compensation
182 ...Reference junction temperature control
183 ..By current modifying sensor
184 ...Reactive element (e.g., capacitive)
185 ...Detail of resistive sensor
186 .With specified recording arrangement
187 .Mechanical (e.g., expansion or contraction of materials)
188 ..Having electrical indication
189 ..Plural zones (e.g., indoor-outdoor)
190 ..Indicating tube type
191 ...With optical element (e.g., magnifying)
192 ...With holder for shaking
193 ...Having specified cross section
194 ...With support or housing
195 ..With detail of motion transmitting mechanism
196 ..One sensing element within another
197 ..With compensation
198 ..With adjustment
199 ...Mechanical loading of sensor
200 ...Adjustment of limit stop
201 ..Expanding fluid
202 ...With distinct pressure transmitting fluid
203 ...Bourdon tube or bellows
204 ..Multiple distinct sensing elements
205 ..Compound sensing element (e.g., bimetallic)
206 ...Coil
207 ....Helix
208 HOUSING, SUPPORT, OR ADJUNCT
209 .Removable probe cover
210 MISCELLANEOUS

CLASS 375 PULSE OR DIGITAL COMMUNICATIONS

1	SPREAD SPECTRUM
3	REPEATERS
3.1	.Testing
4	.Including pulse regeneration or conversion
5	APPARATUS CONVERTIBLE TO ANALOG
6	EARTH OR WATER MEDIUM
7	TRANSCEIVERS
8	.Modems (data sets)
9	..Angle modulation
10	TESTING
11	EQUALIZERS
12	.Automatic
13	..Training period or initial set up
14	..Adaptive
15	...Quadrature channels
16	...Accumulator or up/down counter
17	MULTILEVEL
18	.Partial response
19	.Disparity reduction
20	.Synchronized
21	PULSE NUMBER MODULATION
22	PULSE WIDTH MODULATION
23	PULSE POSITION, FREQUENCY, OR SPACING MODULATION
24	PULSE AMPLITUDE MODULATION
25	PULSE CODE MODULATION
26	.Correcting or reducing quantizing errors
27	.Differential
28	..Single bit (delta)
29	...Nonamplitude delta (area, etc.)
30	...Compand (overload prevention)
31	....Redundancy Removal
32	....Syllabic
33	...Plural feedback loops
34	.Noise or distortion reduction
122	BANDWIDTH REDUCTION OR EXPANSION
35	PULSE TRANSMISSION VIA RADIATED BASEBAND
36	CABLE SYSTEMS AND COMPONENTS
37	SYSTEMS USING ALTERNATING OR PULSATING CURRENT
38	.Plural channels for transmission of a single pulse train
39	..Quadrature amplitude modulation
40	..Diversity
41	.Amplitude modulation
42	..With phase or frequency shift keying
43	..Vestigial or single sideband or suppressed carrier
44	.Angle modulation
45	..Frequency shift keying
46	...Combined with phase shift keying
47	...Minimum shift keying
48	...More than two frequencies
49	...One cycle or less per bit
50	...Vestigial or single sideband, or suppressed carrier
51	...Anti-noise or distortion
52	..Phase shift keying
53	...More than two phases
54	....Quaternary
55	...Biphase (manchester codes)
56	...Differential phase shift keying (diphase)
57	...Antinoise or distortion
58	.Antinoise or distortion
59	TRANSMITTERS
60	.Antinoise or distortion (includes predistortion)
61	.Single or vestigial sideband or suppressed carrier
62	.Frequency shift keying
63	..Antenna tuning with frequency shift
64	..Minimum shift keying
65	..One oscillator
66	..Two or more oscillators
67	.Phase shift keying
68	.Keying circuits
69	..Remote controlled
70	..Automatic
71	..Power or bias voltage supply keying
72	..Key shock or click prevention
73	..Including auxiliary control tube
74	..Modulation by absorption of signal, changing antenna dimension or changing antenna impedance
75	RECEIVERS
76	.Automatic baseline or threshold adjustment
77	.Single or vestigial sideband or suppressed carrier
78	.Angle modulation
79	..Combined phase shift keyed and frequency shift keyed
80	..Particular demodulator
81	...Phase locked loop
82	...Including switching or gating (digital circuits)
83	..Phase shift keying
84	...Differential (diphase)
85	....More than two phases
86	....Plural phase (>2)
87	...Biphase (manchester code)
88	..Frequency shift keying
89	...More than two frequencies
90	...Minimum shift keying
91	...Separate mark and space channels
92	.Interrupted carrier wave
93	..Carrier controlling local generator
94	.Particular pulse demodulator or detector
95	..Locating predetermined portion of pulse
96	..Correlative or matched filter
97	.Automatic frequency control
98	.Automatic gain control
99	.Interference or noise reduction
100	..Diversity (frequency or time)
101	..Intersymbol interference
102	..Plural signal paths in receiver
103	..By filtering (e.g., digital)
104	..Gating, blanking, etc.
105	.With elctromagnetic relay or solenoid
106	SYNCHRONIZERS
107	.Network synchronizing more than two stations
108	.Synchronization failure prevention
109	.Feedback, receiver to transmitter
110	.Self synchronizing signal (self clocking codes, etc.)
111	.Frequency or phase control using synchronizing signal
112	..Synchronization bit insertion into artificially created gaps
113	..Synchronization signals with unique amplitude, polarity, length or frequency
114	..Synchronization word
115	...Pseudo noise
116	...Synchronizer pattern recognizers
117	..Start - stop
118	.Phase displacement, slip or jitter correction
119	..Phase locking
120	...Phase locked loop
121	MISCELLANEOUS

CLASS 376 INDUCED NUCLEAR REACTIONS, SYSTEMS AND ELEMENTS

100 NUCLEAR FUSION
101 .Pellet guidance systems (e.g., pellet injection means)
102 .Inertial confinement (e.g., nuclear explosive)
103 ..Photon beam (e.g., laser) irradiation
104 ...Optics
105 ..Particle beam irradiation (excluding photons)
106 ...Ion beam irradiation
107 .Fusion reaction by plural colliding plasmas or particle beams
108 .Including accelerating particles into a stationary or static target (e.g., Cockcroft-Walton generator type)
109 ..With target replenishing
110 ..With means for modifying the resultant neutron output, e.g., moderator means
111 ..With means to pulsate ion beam
112 ..Cyclotron type acceleration of nuclei
113 ..With electrostatic voltage generating means
114 ..Self-contained neutron sources (e.g., neutron or accelerator tube)
115 ...With cooled electrodes or target
116 ...With ion beam collimator or filtering structure (e.g., extractor electrode)
117 ..With ion beam collimator or filtering structure
118 ..Subterranean sources
119 ..With control circuitry
120 .Including bunched particle beam
121 .Magnetic confinement of plasma
122 ..Plasma formed in situ by laser
123 ..Principal heating by wave energy
124 ...Heating by time varying magnetic field (e.g., by compression)
125 ..Imploding liners
126 ..With enveloping charged particle confinement (e.g., E or P layer)
127 ..With injection of electrically charged or accelerated particles
128 ...Plasma injection
129 ...Negatively charged particle injection
130 ...Neutral particle injection
131 ..Auxiliary heating
132 ...Electromagnetic wave energy
133 ..Toroidal confinement of plasma
134 ...Divertors
135 ....Effuser
136 ...Limiters or liners
137 ...With solid internal conductor
138 ...Bumpy torus
139 ..Linear confinement
140 ...Mirror devices
141 ....Plasma formed or contained between spaced electrodes
142 ..Magnetic structure
143 ..With circuitry
144 .Plasma formed between spaced electrodes
145 ..Plasma focus
146 .Including removal or use of impurities or reaction products (e.g., energy)
147 ..Direct conversion of energy
148 ..Including use of heat or radiation to effect a chemical reaction
149 .Shock wave heating of plasma or gas (e.g., MHD heating)
150 .Chamber structure or material
151 .Fusion targets or pellets
152 ..For inertial confinement
153 DETECTION OF RADIATION BY AN INDUCED NUCLEAR REACTION
154 .By fission
155 .With boron
156 NUCLEAR TRANSMUTATION (E.G., BY MEANS OF PARTICLE OR WAVE ENERGY)
157 .Gamma or charged particle activation analysis
158 .By neutron bombardment
159 ..Neutron activation analysis
160 ...Subterranean
161 ....Specific nuclides
162 .....Metals
163 ......Aluminum, silicon
164 ......Uranium
165 .....Hydrogen, chlorine
166 .....Oxygen, carbon
167 ....With tracer injection
168 ..Halogens
169 ...Iodine
170 ..Actinides
171 ...Breeder or converter reactor structures
172 ....Fertile fuel assembly structure or arrangement
173 .....Having internal fertile regions
174 ....Having particular coolant fluid flow path or pattern within reactor core
175 .....Orifice or fluid control at inlet or outlet of coolant channels
176 ......Hydraulic holddown
177 .....Plural coolant loops or passes through reactor core
178 ....Fuel assembly holddown or support
179 ....Coolant manipulated and used exterior of reactor core
180 ...Formation of uranium isotopes
181 ....Uranium 233
182 ...Formation of plutonium isotopes
183 ..Doping of semiconductors
184 ..Rare earths
185 ..Alkali and alkaline elements
186 ..Molybdenum, technetium
187 ..Lead, polonium, bismuth
188 ..Sulfur, phosphorus
189 ..With reaction product treatment (e.g., recovery, separation)
190 .By charged particle bombardment
191 ..Alpha-neutron sources
192 ..To produce spallation reactions
193 ...To produce fissile isotopes
194 ..Proton bombardment
195 ...With reaction product treatment (e.g., recovery, separation)
196 ..Alpha (helium nucleus) bombardment
197 ...Wherein the reaction product is an actinide or transuranium element
198 ...With reaction product treatment (e.g., recovery, separation)
199 ..Deuteron bombardment
200 ...Wherein the reaction product is an actinide or transuranium element
201 ...With reaction product treatment (e.g., recovery, separation)
202 .Irradiation capsule, holder, or support
203 SEAL ARRANGEMENTS
204 .For nozzle
205 .Between pressure vessel cover and vessel or portion thereof
206 ..Rotating plug-type cover
207 WITH CONTROL OF REACTOR (E.G., CONTROL OF COOLANT FLOW)
208 .Pulsed reactors
209 .Spectral shift
210 .By coolant flow
211 ..Exterior of core (e.g., secondary loop control)
212 .By altering quantity of characteristic of fuel within critical area
213 ..Wherein control element includes a fissile material

WITH CONTROL OF REACTOR (E.G., CONTROL OF COOLANT FLOW)
214 .Reactor start-up
215 .By electronic signal processing circuitry (e.g., plural redundant circuits)
216 ..Plural sensed different conditions or measured variables correlated
217 ...Control programs
218 ....Xenon control
219 .By movement of control element or by release of neutron absorbing material
220 ..Wherein the control element is a reflector or moderator material
221 ...Variable fluent reflector/moderator level or density
222 ....Moderator dump
223 ..Rotatable control elements
224 ..Finger-type control elements (insertable into fuel element positions)
225 ...Including shock absorber
226 ..Wherein control element is driven directly into bed of fuel elements
227 ..Control element movable by means of cable and winch, chains or reels
228 ..Wherein driver or motivating is electric
229 ...Electrofluidic
230 ..Wherein driver or motivating is fluid
231 ...Pneumatic
232 ..By motion transforming means, e.g., rack and pinion
233 ..Releasable coupling
234 ..Including shock absorber
235 ..Means for locking control element in desired position
236 ..Including control rod insertion and removal schemes
237 ...Group movement of control elements
238 ...Setback
239 ..Rod or support carrying plural elements or diverse materials
240 .Sensing or detecting device attached to, embedded in, or integral with control element
241 .Power output control (e.g., load follows with steam dump)
242 .Means to inhibit control rod movement
243 .With cooling of control element
244 .Temperature reactivity control
245 TESTING, SENSING, MEASURING, OR DETECTING A FISSION REACTOR CONDITION
246 .Flowmeters
247 .Temperature or pressure measurement
248 .Optics
249 .Vessel monitoring or inspection
250 .Leak detection
251 ..Fuel element leak detection
252 ...By acoustic or ultrasonic wave energy
253 ...By the detection of fission products external to the fuel element
254 .Flux monitoring
255 ..Directly generating electrical signal (e.g., ion detection)
256 .Gas sensors (e.g., hydrogen detectors)
257 .Fuel assay (e.g., burnup)
258 .Position detection
259 .By particular instrumentation circuitry
260 HANDLING OF FISSION REACTOR COMPONENT STRUCTURE WITHIN REACTOR SYSTEM
261 .Fuel component
262 ..Including handling of a second different, diverse reactor component (e.g., control element, moderator element, vessel cover removal)
263 ...With pressure vessel cover removal
264 ..Charging or discharging of fuel
265 ...Refueling ball-type reactors
266 ....Means for separating low exposure from high exposure elements
267 ...Refueling schemes, patterns, or fuel cycles (e.g., in/out systems)
268 .Refueling machines
269 ..With magazine
270 ..With nonaxial transfer capability
271 ..Upper axial transfer
272 .Storage container systems for new and/or irradiated core elements
273 SUBTERRANEAN REACTOR STRUCTURES (E.G., UNDERGROUND CONTAINMENT, UNDERGROUND EXPLOSIVE)
274 .For minimizing radioactive contamination within an underground chamber or of the material removed therefrom
275 .For extracting materials or energy from the earth
276 ..In the form of heated water or steam
277 REACTOR PROTECTION OR DAMAGE PREVENTION
278 .By minimizing positive coolant void coefficient
279 .Fire extinguishing or prevention
280 .Core catchers
281 .Fluid flow reversal protection
282 .Emergency core coolant systems (e.g., injecting coolant into reactor or pipe systems)
283 .Pressure suppression and relief
284 ..By fusible means (e.g., ice)
285 .Expansion means (e.g., shock absorbers, roller bearings)
286 ..Pipe expansion joints
287 .Shield or barrier between radiation or heat source and object to be protected (e.g., insulation, thermal shield)
288 ..Particular materials
289 ..Thermal insulation
290 ...For liquid metal cooled fast reactors (e.g., insulation for vault roof, or for the vessel walls as by a layer of stagnant or quasi-stagnant coolant)
291 ...Concentric tubes or conduits with insulation
292 ..Concentric tubes or conduits
293 ..Containment structures
294 ...Pressure vessels
295 ....Concrete
296 .....Prestressed
297 .With turbine protection means (e.g., turbine trip or overspeed protection means)
298 .Auxiliary heat removal structure
299 ..Decay heat removal
300 .Recombiners
301 ..Catalytic
302 .Core restraint means
303 ..In-core restraint means
304 ..For moderator structures
305 .Corrosion or damage prevention
306 ..By addition of material to coolant
307 .With pressurizer means
308 FISSION REACTOR MATERIAL (INCLUDING REACTION PRODUCTS) TREATMENT
309 .Post accident impurity or contaminant removal
310 .Impurity removal
311 ..Reprocessing of fuel during reactor operation
312 ..By cold traps or hot traps
313 ..By filters, ion exchangers, or absorbers
314 ...Gas filters (e.g., adsorbers)
315 ...Electrostatic or magnetic filters

FISSION REACTOR MATERIAL (INCLUDING REACTION PRODUCTS) TREATMENT
.Impurity removal
316 ..By pressurized fluid (i.e., blowdown)
317 COMBINED
318 .With propulsion means
319 ..Gaseous core
320 .With direct conversion means
321 ..Thermionic
322 .For storing excess energy
323 .With chemical reaction
324 ..To produce a combustible fuel
325 ...Cracking of hydrocarbons
326 .With laser
327 CONTROL COMPONENT FOR A FISSION REACTOR
328 .Liquid control component
329 ..With vaporization
330 ..Liquid metal control component
331 .Gaseous control component
332 .Telescopic control devices
333 .Wherein concentration of the reactivity affecting material varies radially or axially of the control element
334 ..By utilizing a follower
335 .Flexible control element
336 .Fuse actuated devices
337 ..Particulate type
338 .Particulate type (e.g., balls)
339 .Nonconventional control material
340 REACTOR STRUCTURES WITH TESTING OR IRRADIATION FACILITIES
341 .With material holder or support positioned outside the radiation source
342 .With provision for insertion of material to be irradiated into the radiation means
343 ..Flux trap reactor structures
344 ..By fluid pressure
345 ...Wherein the fluid is a liquid
346 EPI-THERMAL REACTOR STRUCTURES (E.G., INTERMEDIATE NEUTRON SPECTRUM)
347 REACTOR STRUCTURES
348 .Fast thermal composite core
349 .Flux flattening
350 .Moderator component varies in its effective density or materials
351 ..Spaced internal reflectors or moderators
352 .Orifice or fluid control at inlet or outlet of coolant channels
353 .With particular control rod guide structure
354 .Fuel material in contact with and supported by fluid
355 ..Fluidized beds
356 ..Fuel dispersed in liquid moderator, solution, etc.
357 ...Vapor forming, separating, or manipulating
358 ...With particular in situ reconstitution or modification of fuel moderator material
359 ..Fuel in molten state or in molten vehicle
360 ...Fuel in form of fused salt
361 .Circulating fluid within reactor
362 ..Fuel assembly supports
363 ...Suspended fuel assembly
364 ...Fuel assembly holddown or locking means
365 ....Hydraulic or pneumatic
366 ..Plural fluids or a fluid in plural phases circulating within reactor (e.g., pressure tube reactors)
367 ...In heat pipe means
368 ...Including chemically distinct gas
369 ....With formation, separation, or manipulation of a second gas
370 ...With formation, separation, or manipulation of a vapor (e.g., boiling water reactor (BWR) type)
371 ....With vapor-liquid separating means
372 ....With jet pump
373 ....Having specified fluid flow path or pattern within reactor core
374 .....Plural separate coolant loops through reactor core
375 .....With plural, coolant passes through reactor core
376 ......Re-entrant type
377 .....With particular flow directing or diverting means (e.g., flow baffle)
378 ....Vapor manipulated or used exterior of reactor core
379 .....With flow control of fluid within reactor
380 ....Nonaqueous vapor
381 ..Pebble bed reactor
382 ...Having core of separate pebble containers
383 ..Fluid is a gas
384 ...Wherein the gas is steam
385 ...Having specified flow path or pattern within reactor core
386 ....Plural separate loops
387 ....Plural passes through core
388 .....Re-entrant type
389 ....With particular flow directing or diverting means (e.g., flow baffle)
390 .....With core bypass means (e.g., passage along core barrel or through shield structure)
391 ...Manipulated or used exterior of the reactor core
392 ....With jet pump
393 ....With coaxial flow
394 ....With single structure component containment (e.g., pod arrangement)
395 ..Having specified fluid flow path or pattern within reactor core
396 ...Plural separate coolant loops through reactor core
397 ...Plural passes
398 ....Re-entrant type
399 ...With particular flow directing or diverting means (e.g., flow baffle)
400 ....With core bypass means (e.g., passage along core barrel or through shield structure)
401 ...One-fluid-type pressure tube reactor
402 ..Manipulated or used exterior of reactor core
403 ...Including tank, pool, or reservoir (e.g., swimming pool)
404 ....Having reactor core and heat exchanger or pump therein
405 .....With particular heat exchanger structure
406 ...Compact or integral (e.g., heat exchanger, core, pumps in same vessel)
407 ...With jet pumps
408 ...With means or structure to flash coolant into vapor
409 FUEL COMPONENT STRUCTURE
410 .With means to prevent thinning of the cladding (e.g., amoeba effect)
411 .Spherical particles
412 .Encased with nonfuel component
413 ..With internal pressurizer

FUEL COMPONENT STRUCTURE
.Encased with nonfuel component
414 ..Coated, preformed, or impregnated layer or part or adhesively bonded layers or parts
415 ...Lubricating layer
416 ...Multiple or composite cladding-type layers
417 ....Including getter layer or barrier layer
418 ..Getter, fission product retainer of filter
419 ..Burnable poison
420 ..Interpellet spacing or positioning means
421 ..Homogeneously intermixed
422 ...Alloyed fuel
423 ..Moderator or reflector
424 ..Coolant or heat exchange material
425 ..Heat insulating material
426 .Plural fuel segments or elements
427 ..In solid moderator block
428 ..Wherein the fissile content varies radially or axially within the same container (e.g., plural fuel layers)
429 ..Complementary segments within same container
430 ..Spherically shaped segments within same container
431 ..Concentric cylindrical elements
432 ..Plate-type fuel elements
433 ..Stacked (e.g., Candu type reactor fuel components)
434 ..In pack or bundle
435 ...Wherein the fissile content varies radially or axially across the pack or bundle
436 ...Wire-wrapped fuel elements
437 ...Having the fuel element ends positioned on or attached to rails
438 ...Including grid
439 ....With coolant flow path deflecting means
440 ....For ends of fuel elements
441 ....With nonintegral fuel element contacting means
442 ....With fuel element contacting protuberance or projection
443 ...With coolant flow path deflecting means
444 ....With coolant flow bypass means
445 ...With thermal expansion compensating means
446 ...With removable member
447 ...Including separate burnable poison or moderator
448 ...With means for spacing apart adjacent packs or bundles
449 ...Having provision or structure for insertion of control elements therein
450 .With condition sensing or indicating means
451 .Having particular end closure or seal (e.g., weld, plug, cap, etc.)
452 ..With indexing means
453 .Fuel support or covering provided with fins, projections, prongs, etc.)
454 ..With external fins, projections, prongs, etc.
455 .Hollow, annular, or graduated fuel layers or members (e.g., concentric, helical, etc.)
456 .Vented fuel
457 .Nonconventional jacket or can material
458 MODERATOR OR REFLECTOR COMPONENT STRUCTURE FOR A FISSION REACTOR
459 .With means for keying or assembling moderator blocks together
460 ROTATING PLUG-TYPE COVER
461 VESSEL SUPPORT (E.G., CORE VESSEL SUPPORTS)
462 GRIDS
463 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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900 PARTICULAR MATERIAL OR MATERIAL SHAPES FOR FISSION REACTORS
901 .Fuel
902 ..With external lubricating or absorbing material
903 ..Shapes
904 .Moderator, reflector, or coolant materials
905 ..Organic
906 ..Metal
907 ..Dissociative coolants
908 REACTOR GEOMETRY (OR PART THEREOF) DEFINED IN TERMS OF NUMERICAL VALUES
909 MOBILE REACTORS
910 ROTATING REACTORS
911 PLURAL REACTOR SYSTEMS
912 NUCLEAR REACTOR SYSTEMS SITUATED IN THE OCEAN
913 ANTIMATTER DEVICES AND METHODS
914 NUCLEAR EXPLOSIVES
915 FUSION REACTOR FUELS
916 METHODS OF MAKING FUSION FUEL TARGETS
917 UTILIZING DIFFERENT FUELS OR FUELS IN DIFFERENT FORMS, IN DIFFERENT REACTOR REGIONS IN RELATION TO AMOUNTS OF HEAT PRODUCED IN SAID REGIONS
918 ENTIRE REACTOR CORE OF SINGLE INTEGRAL STRUCTURE

CLASS 377 ELECTRICAL PULSE COUNTERS, PULSE DIVIDERS OR SHIFT REGISTERS: CIRCUITS AND SYSTEMS

DECEMBER 1990

1 APPLICATIONS
2 .Control
3 .Counting on an object, areas having alternating physical properties (e.g., counting lines on grid, teeth on gear, windings on coil)
4 .Betting on the outcome of an event; Totalizers
5 .Game or sport
6 .Counting animate or inanimate entities
7 ..Coins
8 ..Flat articles (e.g., sheet, bill, ticket)
9 ..Vehicles
10 ..Field of view contains plural entities or entities scanned plural times (e.g., microscopic particles)
11 ...Including particle size determination variations
12 ...Counting by detecting electrical impedance variations
13 .Registering counts for different categories (e.g., accounting)
14 ..Where the different categories represent monetary amounts (e.g., wages, charges)
15 .Counting based on number of times machine or apparatus operates
16 .Determining machine or apparatus operating time or monitoring machine, apparatus or operation
17 .Position determining
18 ..Of flat flexible strip (e.g., tape)
19 .Measuring or testing
20 ..Time combined with measurement of another parameter
21 ..Fluid flow
22 ..Weight
23 ..Acceleration
24 ..Dimension
24.1 ...Distance and Powered Vehicle (e.g., odometer)
24.2 ...Distance and Human Activity (e.g., pedometer, nonpowered golf carts)
25 ..Temperature
26 .Including memory
27 SYSTEMS
28 .Identifying or correcting improper counter operation (e.g., error checking, monitoring; preventing or correcting improper counter operation)
29 ..Testing or calibrating the counter
30 ..Preventing an inaccurate count as a result of an external condition
31 ...Automatic preset
32 ...Power failure
33 .Using particular code or particular counting sequence
34 ..Minimum change code (e.g., Gray code)
35 ..Excess three code
36 ..Biquinary code
37 .Sequential readout of plural counters or sequential sampling of inputs to a counter
38 .Plug in counter
39 .Comparing counts
40 .Nonsignificant zero elimination
41 .Complementing a count
42 .Converting input or output signal from or to an analogue signal
43 .Having phase shift
44 .Counter controlled counter
45 .Including reversible counter
46 .Including ring counter
47 .Pulse multiplication or division
48 ..Multiplication or division by a fraction
49 .Counter includes circuit for performing an arithmetic function
50 .Compensation for excess or shortage of pulses
51 .Including structure for detecting or indicating overflow condition
52 .With programmable counter (i.e., with variable base)
53 .With photoelectric sensor
54 .Using shift register
55 .Particular input circuit
56 .Particular output circuit
57 CHARGE TRANSFER DEVICE (E.G., ANALOGUE SHIFT REGISTER, CCD, BUCKET BRIGADE DEVICE)
58 .Compensating for or preventing signal charge deterioration
59 .With feedback
60 .Particular input or output means
61 .Direction and/or path flow control (e.g., by clocking or biasing, by charge splitting)
62 ..In charge-coupled device
63 .Charge-coupled device
64 SHIFT REGISTER
65 .Using electromechanical relays
66 .Asynchronous
67 .Multirank (i.e., rows of storage units form a shift register)
68 .Compensating for or preventing signal deterioration
69 .Shift direction control
70 .Particular input circuit
71 ..Pulse shaping
72 ..With feedback
73 ..Including logic circuit
74 ...Field-effect transistor
75 .Particular output circuit
76 ..Sequential output (e.g., tapped delay line)
77 .Particular transfer means
78 ..Phase clocking or synchronizing
79 ...Field-effect transistor
80 ..Parallel clocking
81 ..Logic circuit
82 ELECTROMECHANICAL COUNTER
83 .Counting or dividing chains using relays
84 .Programmable (i.e., with variable base)
85 .Reversible
86 .Particular input means
87 .Particular output means
88 .With resetting
89 .Rotary magnet
90 .Stepping switch
91 .Clutch or escapement
92 .Pawl and rachet
93 WITH SUPERCONDUCTIVE ELEMENT
94 COUNTING OR DIVIDING IN INCREMENTAL STEPS (I.E., STAIRCASE COUNTER)
95 .Charge storage (e.g., capacitor without polarization hysteresis)
96 ..Using auxiliary pulse generator triggered by incoming pulses
97 .Hysteresis storage (e.g., counters using saturable magnetic core elements)
98 .DEVICES HAVING MORE THAN TWO STABLE STATES
99 .Beam type tube (e.g., magnetron, cathode-ray tube)
100 .Multi-cathode gas discharge tubes
101 USING BISTABLE MAGNETIC CORES OR FERROELECTRIC CAPACITORS
102 USING BISTABLE ELECTRO-OPTICAL DEVICES

103 COUNTING OR DIVIDING CHAINS USING GAS-FILLED TUBES
104 PHASED CLOCKING
105 .Field-effect transistor
106 PARTICULAR PARALLEL GATING OR CLOCK SIGNAL
107 STARTING, STOPPING, PRESETTING OR RESETTING THE COUNTER
108 .Counter chains with a radix or base other than the number two raised to an integral power
109 ..Decade
110 ..Programmable (e.g., with mechanical or electromechanical switch means for selecting the count
111 PARTICULAR INPUT CIRCUITS FOR COUNTER
112 INDICATING MEANS
113 .Using glow discharge lamps
114 PARTICULAR OUTPUT CIRCUITS FOR COUNTER
115 PARTICULAR TRANSFER MEANS (E.G., MASTER-SLAVE)
116 .Including logic circuit
117 ..Field-effect device (e.g., JFET, IGFET, MNOS)
118 PULSE COUNTING OR DIVIDING CHAINS
119 .Using bistable regenerative trigger circuits
120 ..Using only semiconductors having at least three electrodes
121 ...Field-effect device (e.g., JFET, IGFET, MNOS)
122 ...Ring counter
123 ...Reversible counter
124 ..Ring counter
125 ..Reversible counter
126 .Ring or reversible counter
127 .Using bistable semiconductors having at least three electrodes or analogous complementary transistor circuits (e.g., avalanche transistor, SCR's)
128 .Using bistable semiconductors having only two electrodes (e.g., tunnel diode, multilayer diode)
129 PULSES CONTINUOUSLY CIRCULATED IN A CLOSED LOOP
130 MISCELLANEOUS

CLASS 378 X-RAY OR GAMMA RAY SYSTEMS OR DEVICES

1	SPECIFIC APPLICATION
2	.Radiation coding
3	.Mossbauer effect
4	.Computerized Tomography
5	..Energy discriminating
6	..Fluorescence or scatter mapping
7	..Scatter compensating
8	..Object responsive
9	..Plural sources
10	..Nonrotating source or detector
11	..Source or detector translation within plane
12	...With electronic scanning
13	...Radial
14	...Fan beam translation
15	..Continuous mechanical rotation
16	..Beam energy or intensity control
17	..Tiltable or nonvertical examination plane
18	..With tissue equivalent material
19	..Beam detection system
20	..Object positioning or aligning
21	.Tomography
22	..With nonphotographic detector
23	..Dynamic tomography
24	..Transverse tomography
25	..Planar tomography
26	...Linear tomography
27	..Nonplanar tomography
28	.Xeroradiography
29	..With real time display
30	..With focussed gap field
31	..With auxiliary electrode
32	..With uniform charging of image receptor
33	..With gap fluid handling
34	.Lithography
35	..Pattern mask
36	.Holography or interferometry
37	.Mammography
38	.Dental panoramic
39	..Moving source and detector
40	...Continuous image
41	.Stereoscopy
42	..Fluoroscopy
43	.Telescope or microscope
44	.Fluorescence
45	..Composition analysis
46	...Plural diverse X-ray analyses
47	...Fluid analyte
48	...With standardization
49	...With spatially dispersive energy analysis
50	..Thickness or density analysis
51	.Absorption
52	..Fluid level measuring
53	..Composition analysis
54	..Thickness or density analysis
55	...With movable source or detector
56	...With standardization
57	..Inspection of closed container
58	..Flaw analysis
59	...Pipe testing
60	....Pipe crawler
61	...Tire testing
62	..Imaging
63	...Combined with non-X-ray imaging
64	..Irradiating
65	...Therapy
66	...Of fluid
67	....With tortuous flow
68	...Including object support or positioning
69	....With object moving
70	.Diffraction, reflection or scattering analysis
71	..Diffractometry
72	...Stress analysis
73	...Crystalography
74	....Topography
75	....Powder technique
76	....Back reflection
77	....Precession
78	....Piezoelectric crystal
79	...Analyte support
80	....With environmental control
81	....Goniometer
82	..Spatial energy dispersion
83	...Composition analysis
84	...Monochromator or focussing device
85	....With plural dispersing elements
86	..Scatter analysis
87	...Imaging
88	...Composition analysis
89	...Thickness or density analysis
90	....Plural diverse X-ray analysis
91	ELECTRONIC CIRCUIT
92	.For plural X-ray sources
93	.For electrode movement
94	..With movement sensing
95	.Object responsive control
96	.Exposure timer
97	..Dose responsive
98	.With display or signaling
99	..Television
100	...Color
101	.X-ray source power supply
102	..Mobile or portable
103	..Energy storage
104	..With specific rectifier
105	..High frequency
106	..With pulse output
107	..With A.C. output
108	..Dose regulated
109	..Current regulated
110	...Automatic
111	..Voltage regulated
112	...Automatic
113	..Electron beam control
114	.With switching means
115	..For selecting
116	...Technique or detector
117	..For safety or protection
118	...Tube overload
119	SOURCE
120	.Nuclear excited
121	.Electron tube
122	..Field emission or cold cathode
123	..Vacuum control
124	..With plural targets or anodes
125	..With movable target
126	...Translation or nutation
127	...Temperature modification
128	....With thermal impedance
129	....With increased emissivity
130	....With cooling fluid
131	...With specific motor means
132	...With specific bearing means
133	....With lubrication
134	..With plural cathodes or heaters
135	..With movable electrode
136	..With specific cathode
137	..With electron scanning or deflecting means
138	..With electron focusing or intensity control means
139	..With potential stress distribution
140	..With X-ray window or secondary radiation screen
141	..With cooling means
142	...With solid heat conductor or shield
143	.Target
144	..Rotary
145	BEAM CONTROL
146	.Scanner
147	.Collimator

BEAM CONTROL
.Collimator
148 ..Plural selectable
149 ..Multiaperture
150 ..Variable
151 ...Automatic
152 ...With linear leaf motion
153 ...With pivotal leaf motion
154 .Antiscatter grid
155 ..With grid moving means
156 .Filter
157 ..Plural
158 ..Single filter with plural elements
159 ..Contoured
160 .Shutter or chopper
161 .Window
162 AUXILIARY DATA ACQUISITION OR RECORDING
163 .Distance or dimension marker
164 ..Coordinate grid
165 .Patient or exposure data
166 ..With light projection
167 PHOTOGRAPHIC DETECTOR SUPPORT
168 .Dental
169 ..Cassette
170 ..With aligning
171 .For roll or strip film
172 .Serial plate or cassette changer
173 .Serial film or film pack changer
174 .For plural films or plates
175 .For plural exposures on single film or plate
176 ..With real time imaging
177 .With object support or positioning
178 ..For seated object
179 ..Pivoted object support
180 ..With object retaining
181 .For movable film or plate
182 .Sheet film cassette
183 ..Self-developing
184 ..Flexible
185 ..With radiation modifying
186 ...With antiscatter means
187 ...With film clamping
188 ..With hinged cover
189 NONPHOTOGRAPHIC DETECTOR SUPPORT
190 .Fluoroscope
191 ..Dental
192 ..Foot or shoe examination
193 SOURCE SUPPORT
194 .Including cable handling
195 .Including object support or positioning
196 ..With movable source
197 .Including movable source
198 ..With mobile support
199 .Source cooling
200 ..Liquid coolant
201 .Shock proofing
202 ..Fluid immersion
203 .Shielding
204 ACCESSORY
205 .Alignment
206 ..With light projection
207 .Testing or calibration
208 .Object holder or support
209 ..Table or couch
210 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTION

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901 COMPUTER TOMOGRAPHY PROGRAM OR PROCESSOR

1 DIAGNOSTIC TESTING, MALFUNCTION INDICATION, OR ELECTRICAL CONDITION MEASUREMENT
2 .Including fault responsive disconnection of tested component
3 .Of hybrid, or echo suppressor or canceller
4 .Of repeater
5 .By loopback
6 .By analysis of injected tone signal
7 .For detection of eavesdropping device
8 .With blocking of normal usage
9 .Of centralized switching system
10 ..By automatic testing sequence (e.g., programmable, scanning)
11 ...Routiner
12 ..With dedicated testing line or trunk
13 ..Of call timing or charging equiment
14 ..Of plural exchange network
15 ..Of automatic switching equipment
16 ...Of switching path
17 ...Of switching selector
18 ...By use of call address signal
19 ...Rapid manual connecting structure for test equipment
20 ..Of switchboard element condition (e.g., lamp)
21 .Using portable test set (e.g., handset type)
22 .Of trunk or long line
23 ..Of line signalling
24 ..Electrical parameter measurement (e.g., attenuation)
25 ..Conductor identification or location
26 ..Fault detection or location (e.g., continuity, leakage)
27 .Of subscriber loop or terminal
28 ..Of data transmission instrument
29 ..Terminal arrangement to enable remote testing (e.g., testing interface)
30 ..Loop impedance (e.g., resistance, capacitance)
31 ..Of line signalling generator (e.g., dial, tone code generator)
32 .Indication of nonstandard condition of telephone equipment
33 ..Alarm or emergency (e.g., cut line)
34 SERVICE MONITORING OR OBSERVATION
35 .Listening-in or eavesdropping type
36 FREE CALLING FROM PAYSTATION
37 EMERGENCY OR ALARM COMMUNICATIONS (E.G., WATCHMAN'S CIRCUIT)
38 .Personal monitoring (e.g., for the ill or infirm)
39 .Responsive to sensed nonsystem condition
40 ..Automatic dialing
41 ..Transmission of recorded audio message
42 ..Plural conditions
43 ..Fire
44 ..Intrusion
45 .Central office responsive to emergency call or alarm (e.g., "911", operator position display)
46 .Called line or station condition responsive (e.g., recall if busy)
47 .Plural alarms over single line
48 .Announcement or alarm received at terminal station (e.g., "butt-in", alarm)
49 .Central station with plural substations
50 .By pulse or digital signal
51 .With automatic dialing or transmission of recorded audio message
52 INCLUDING AID FOR HANDICAPPED USER (E.G., VISUAL, TACTILE, HEARING AID COUPLING)
53 WITH CONVERSATIONAL VIDEO COMMUNICATION (I.E., VIDEOPHONE)
54 .Switching control
55 HAVING NEAR FIELD LINK (E.G., CAPACITIVE, INDUCTIVE)
56 HAVING ELECTROMAGNETIC LINK FOR SPEECH OR PAGING SIGNAL (E.G., LIGHT WAVE LINK)
57 .Control of selectively responsive paging arrangement over telephone line
58 .Radio telephone system or instrument
59 ..Zoned or cellular system
60 ...Having zoned/cellular system switching (e.g., handoff)
61 ..Including cordless extension set (i.e., having single subscriber line access)
62 ...With privacy or lockout (e.g., identity verification)
63 ..Including supervisory or control signalling
64 HAVING SINGLE CHANNEL TELEPHONE CARRIER
65 .Including call signalling (e.g., ringing, off-hook, dialing)
66 .Over power line
67 WITH AUDIO MESSAGE STORAGE OR RETRIEVAL
68 .Dynamic audio signal recording or reproduction
69 ..Call originating
70 ..Call intercept or answering
71 ...Consecutive use of recorded phrases or words to form message
72 ...Sequential or repeated announcement during single call initiated cycle
73 ...Plural record carrier channels
74 ...Remote control over telephone line
75 ....Remote dictation
76 ....Announcement selection or replacement
77 ....Control by generated tone
78 ...Acoustic coupling
79 ...With specified call initiated cycle control circuitry
80 ....Voice signal presence responsive
81 ....Call termination responsive (e.g., hang-up)
82 ....Having specified call initiation (e.g., ringing) responsive circuitry
83 ....Structural detail of storage medium drive
84 ...At switching facility (e.g., central office, switchboard)
85 ..Recording of telephone signal during normal operation
86 ...Inductive pickup
87 ..Reproduced signal distributed over telephone line
88 .Stored in digital form
89 ..Subscriber control of central office message storage or retrieval
90 TELEPHONE LINE OR SYSTEM COMBINED WITH DIVERSE ELECTRICAL SYSTEM OR SIGNALLING (E.G., COMPOSITE)
91 .Credit authorization
92 .Polling (e.g., audience survey)
93 .With transmission of a digital message signal over a telephone line
94 ..Including switching station
95 ..Access restricting
96 ..Including terminal for display of digital information
97 ..By voice frequency signal (e.g., tone code)
98 ...By modulated audio tone
99 ...Having acoustic link

TELEPHONE LINE OR SYSTEM COMBINED WITH DIVERSE ELECTRICAL SYSTEM OR SIGNALLING (E.G., COMPOSITE)
100 .To produce visual-graphic copy reproduction (e.g., facsimile)
101 .Audio program distribution
102 .Remote control
103 ..Of entrance or exit lock
104 ..With indication
105 ..From terminal
106 .Remote indication over telephone line (e.g., telemetry)
107 ..Meter reading
108 .Telegraphy
109 ..Over telephone line
110 COMPOSITE SUBSTATION OR TERMINAL (E.G., HAVING CALCULATOR, RADIO)
111 WITH USAGE MEASUREMENT (E.G., CALL OR TRAFFIC REGISTER)
112 .Computer or processor control
113 ..Call traffic recording
114 .Call charge metering or monitoring
115 ..Interexchange operations
116 ...Hardcopy record generating
117 ..Of station on polystation or party line
118 ...Identification of station
119 ..Hardcopy record generating (e.g., ticket printing)
120 ...With line identification or class of service determination
121 ..At central office
122 ...With display
123 ...Paystation (e.g., escrow control)
124 ...Pulse counting or accumulating (e.g., "message metering")
125 ....Local or zone
126 ....Automatic message accounting
127 .....Having line identification (e.g., automatic number identification - "ANI")
128 ....Time of day controlled
129 ...Manually set (e.g., key and lock)
130 ..At subscriber station
131 ...Time controlled
132 ....Paystation (e.g., escrow control)
133 .Call traffic recording or monitoring
134 ..At central station
135 ...With hardcopy record generation (e.g., ticket printing)
136 ...With display
137 ...Trunk usage (e.g., peg count)
138 ....All trunks busy metering
139 ...Counting the number of completed connections
140 ..At subscriber
141 ...Mechanical register
142 WITH CALLING NUMBER DISPLAY OR RECORDING AT CALLED SUBSTATION
143 WITH CHECK OPERATED CONTROL (E.G., PAYSTATION)
144 .Other than coin
145 .Fraud or interference prevention
146 .Coin signalling or control
147 ..Coin box audit or totalizer
148 ..Denomination
149 ..Post-pay coin collection
150 ..Coin disposition (i.e., return or collection)
151 ...Upon connection to called station
152 ...Magnet, electromagnet, or relay controlled from central office
153 ...Paystation (e.g., control by refund key)
154 .At central office
155 .At terminal station (e.g., coin paystation)
156 MULTI-LINE OR KEY SUBSTATION SYSTEM WITH SELECTIVE SWITCHING AND CENTRAL SWITCHING OFFICE CONNECTION
157 .With special service
158 ..Conferencing
159 .With intercom system
160 ..With connection of intercom station to subscriber line
161 .With exclusion or priority feature (e.g., lockout or privacy)
162 .Detail of hold circuitry
163 ..Electronic
164 .Line status indication or call alerting
165 .Switching or supervision feature (e.g., common control, digital)
166 .Detail of line circuit or line card
167 PRIVATE (E.G., HOUSE OR INTERCOM) OR SINGLE LINE SYSTEM
168 .Lockout
169 ..Central power source
170 .With paging
171 .Having plural stations with selective calling (e.g., master)
172 ..With call addressing
173 .With call addressing
174 .Including body or apparel supported terminal (e.g., headgear)
175 ..For underwater use (e.g., in diver's suit)
176 .With central power source
177 POLYSTATION LINE SYSTEM (I.E., PARTY LINE)
178 .Revertive call
179 .Call alerting (e.g., ringing)
180 ..Full selective or tuned (e.g., harmonic)
181 ..Semi-selective (e.g., line side, polarized)
182 .Automatic or unattended
183 ..Station identification
184 ..Lockout
185 .Portable or mobile
186 .Central power source
187 .Connected to central office
188 CALL OR TERMINAL ACCESS ALARM OR CONTROL
189 .Fraud or improper use mitigating or indication (e.g., "blue box", "black box")
190 .Time out
191 ..At switching center
192 ...Of call duration (e.g., conversation timer)
193 ...Of specific equipment
194 .Lockout or double use signalling
195 ..In automatic system
196 .At switching center
197 ..Central office
198 ..PBX
199 .At substation
200 ..Restrictive dialing circuit
201 SPECIAL SERVICES
202 .Conferencing
203 ..Operator control
204 ..Subscriber control
205 ...Conference initiation by single calling station
206 ..At substation
207 .At plural exchanges
208 .Priority override (e.g., butt-in)
209 .Repetitive call attempts (e.g., camp-on-busy, retry)
210 .Call diversion (e.g., call capture)
211 ..Call forwarding
212 ..Call transfer
213 ..Intercept (e.g., dead or changed number)
214 ..Secretarial or answering service
215 .Call waiting

SPECIAL SERVICES
216 .Abbreviated dialing or direct call (e.g., hot line)
217 .Audible paging
218 .Performed by operator (e.g., butt-in, busy verification)
219 PLURAL EXCHANGE NETWORK OR INTERCONNECTION
220 .With interexchange network routing
221 ..Alternate routing
222 .Toll center
223 ..With operator assistance
224 .Tandem switching center
225 .Multi-PBX interconnection
226 .Having a manual exchange
227 ..With an automatic exchange
228 ...Having signalling to operator
229 .Interexchange signalling
230 ..Signalling path distinct from trunk (e.g., CCIS)
231 ..Central office-to-PBX signalling
232 ...PBX trunk groups
233 ...Direct inward dialing
234 ..PBX to central office signalling (e.g., direct outward dialing)
235 ..Voice frequency signalling over trunk
236 ..D.C. signalling over trunk
237 ...Pulse or digital signalling
238 ....Having signalling repeater
239 ....Using register-sender
240 ..Interexchange trunk circuit
241 ...Glare or simultaneous seizure mitigation
242 CENTRALIZED SWITCHING SYSTEM
243 .Class of service determination or transmission
244 ..In common control system
245 .Identification
246 ..Of line or trunk
247 ...With display
248 ...Using matrix
249 ...For nuisance call mitigation
250 .Four-wire switching
251 .With generating of call associated substation signal
252 ..For alerting signal at called station (e.g., ringing)
253 ...Electronic
254 ...Associated with connector
255 ...With interrupter
256 ..Having automatic or through ringing
257 ..For calling station (e.g., status or progress tones)
258 .Switching controlled in response to called station addressing signal
259 ..Including deflected electron beam switching device or mechanical or optical switching control (e.g., fluidic)
260 ..With operator position or completion of call (e.g., dial "O", semiautomatic)
261 ...Operator controlled register-sender
262 ...Call extension by operator
263 ....With call indicator or annoucer
264 ....A to B operator
265 ...Call distribution to operator
266 ....Call queuing
267 ...Operator's console
268 ..Having shared or common switching control
269 ...Distributed control
270 ...In-stage or interstage scanning (e.g., link scanning)
271 ...Having multistage switching
272 ....Path selection or routing
273 .....Alternate routing
274 ......With busy or idle test
275 .....Including marking circuit
276 ......End-to-end marking (e.g., self-seeking)
277 .....With busy or idle test
278 ....Interstage junctor or "trunk"
279 ...Control reliability (e.g., redundancy)
280 ...Including registering or storing device for call address signal
281 ....Conversion between dial pulse and voice frequency signal
282 ....Voice frequency receiver
283 .....Dual tone multifrequency (DTMF) receiver
284 ....With processor
285 ....With magnetic memory
286 ....Signal processing (e.g., dial pulse analysis)
287 ....Electronic
288 ....Register-sender
289 ...Translator
290 ...With time division of Control or supervisory signals
291 ...With detail of crosspoint switching structure (e.g., crossbar)
292 ....Electronic crosspoint (e.g., solid state)
293 ..Having line finder
294 ...Including electronic element (e.g., tube or semiconductor)
295 ...Plural
296 ..With repeater
297 ..Having specified busy-idle test
298 ..Direct control
299 ...Step-by-step system
300 ....Having plural wiper sets
301 ....Having potential control
302 ....Having rotary switch
303 ....Coordinate system (e.g., X-Y)
304 ...All relay type
305 ...Having motor-driven switch
306 ..With crosspoint switch detail
307 ..With power supply
308 .Switching apparatus for connecting calling line to operator's position
309 ..Call distribution or queuing
310 .Divided central (e.g., communication between switchboards
311 ..Having signalling path feature
312 .Having multiple answering jacks for multipled line
313 .Multiple section switchboard
314 ..Auxiliary (e.g., overflow)
315 .With line-signal control
316 ..Spring-jack cut-off
317 ..Relay cut-off
318 ..Central power source
319 .Single switchboard (e.g., cord circuit)
320 ..Switchboard circuit
321 ...Connection to operator's terminal
322 .Power supply
323 ..Power to switching equipment
324 ..Central power source (e.g., common battery, line current feed)
325 .Structure of equipment
326 ..Wire or cable distribution
327 ...Main or intermediate distribution frame
328 ..Equipment mounting or support
329 ...Allowing movement of equipment (e.g., movable, modular)
330 ..Housing
331 .Having protective circuit
332 .Plug and socket
333 CONCENTRATOR OR TRUNK SELECTOR
334 .Concentrator-distributor pair (e.g., line concentrator)
335 .Using crossbar or crosspoint switching

CONCENTRATOR OR TRUNK SELECTOR
336 .With magnet, electromagnet, or relay
337 .With busy-idle test (e.g., idle trunk finder)
338 REPEATER (E.G., VOICE FREQUENCY)
339 .With signal conversion (e.g., dial to DTMF, analog to PCM)
340 .Having line length compensation or equalization
341 .Pulse or tone repeater (e.g., electromechanical relay)
342 ..Electronic (e.g., logic circuitry)
343 .Controlled by a pilot or reference signal
344 .Component processes bidirectional signals
345 ..Including two-to-four wire conversion or hybrid circuit
346 .With frequency discriminator or negative impedance element
347 .With gain or attenuation control
348 .Transmission of power to distant repeater
349 .Having voice frequency transformer
350 SUPERVISORY OR CONTROL LINE SIGNALLING
351 .Signalling integrity protection (e.g., voice signal immunity)
352 .Substation originated
353 ..Conversion of signal form
354 ..With called number display
355 ..Repertory or abbreviated call signal generation
356 ...With dynamic memory
357 ...Insertable control element or circuitry (e.g., card)
358 ...By motor driven dial rotating device
359 ...Pulse signal generating (e.g., dialing)
360 ..Voice frequency band signalling (e.g., reed devices)
361 ...Electronic (e.g., tone generator)
362 ..Pulse signal generator (e.g., rotary dial)
363 ...Control of motor driven dial rotating device
364 ...With nonrotary actuator (e.g., key or slide type)
365 ...Specified switching contact (e.g., contact spring)
366 ...With detail of dial return mechanism (e.g., driving spring, speed governor)
367 ...Finger wheel or mechanical adjunct (e.g., finger stop)
368 ..Plural-switch number input device (e.g., keypad)
369 ..Detail of mounting of switch pad or dial
370 ...In handset
371 ..Magneto signalling
372 .Signal reception at substation
373 ..Incoming call alerting (e.g., ringing)
374 ...With music or audible message generation
375 ...With electronic call sounder (e.g., tone "ringer")
376 ...With visual indication of incoming call
377 .Using line or loop condition detection (e.g., line circuit)
378 ..With current controlling electromagnetic core device (e.g., Hall-effect device)
379 ..With optical link between line and switching system
380 ..By bridge circuit
381 ..Busy test or make busy
382 ..For ring trip or polarity reversal detection
383 ..Of plural lines
384 ...By scanning
385 ..Relayless
386 .Signal receiver (e.g., tone decoder)
387 SUBSTATION OR TERMINAL CIRCUITRY
388 .For loudspeaking terminal
389 ..With circuitry for voice control of transmission direction
390 ..With amplification or attenuation level control
391 .Sidetone control or hybrid circuit (e.g., induction coil)
392 ..Suppression (e.g., antisidetone)
393 .Hold circuit
394 .Impedance matching or line equalizing
395 .Amplifying
396 .Visual signalling (e.g., lamp)
397 .Wire distribution
398 LINE EQUALIZATION OR IMPEDANCE MATCHING
399 SUBSCRIBER LINE OR TRANSMISSION LINE INTERFACE
400 .For line length compensation
401 ..Voltage boosting circuit
402 .Hybrid circuit
403 ..With adjustable balance circuit
404 ...Automatic adjustment
405 ..Electronic noninductive
406 .Echo suppression, antisinging, or reverse path blocking
407 ..Disable or inhibit
408 ..Control by pilot frequency signal
409 ..Having variolosser or attenuator
410 ..Echo cancellation (e.g., phase opposition)
411 ...Having transversal filter
412 .Protective circuit
413 .Power supply (e.g., battery feed)
414 TRANSMISSION LINE CONDITIONING
415 .Reactance neutralizing
416 .Interference suppression
417 ..Anti-crosstalk
418 CALL SIGNAL GENERATING (E.G., RINGING OR TONE GENERATOR)
419 TERMINAL
420 .Having loudspeaking conversation capability (e.g., hands-free type or speakerphone)
421 .Having muting
422 .Switch or switch actuator structure
423 ..Line selection
424 ..Receiver or handset position responsive (e.g., hookswitch)
425 ...With mechanism for latching hookswitch or plunger against motion
426 ...Movable holder for receiver or handset
427 ...Having plunger and lever linkage
428 .Housing or housing component
429 ..Having distinct circuitry support structure (e.g., circuit board)
430 ..Body supported (e.g., headgear)
431 ..Separate housings for earphone and microphone (e.g., candlestick type)
432 ..Loudspeaking set
433 ..Handset structure
434 ..Specified terminal configuration (e.g., novelty type)
435 ..Wall set or convertible type
436 ..Desk set
437 ..Protective structure
438 ...Of cord or connector
439 ...Antiseptic
440 ..Casing or enclosure, per se.
441 TERMINAL ACCESSORY OR AUXILIARY EQUIPMENT

TERMINAL ACCESSORY OR AUXILIARY EQUIPMENT
442 .With circuit connection to terminal
443 .Including coupler (e.g., inductive)
444 ..Acoustic
445 .Locking device
446 .Telephone receiver support
447 .Attachable to terminal housing
448 ..Hookswitch operator
449 ..Handset holder (e.g., shoulder rest)
450 ..Clips onto terminal structure
451 .Protective structure
452 ..Antiseptic, disinfecting or disposable
453 .Hood or enclosure (e.g., booth)
454 .Support or stand
455 ..Handset holder
456 .Dialing tool
457 MISCELLANEOUS

1 CRYPTANALYSIS
2 EQUIPMENT TEST OR MALFUNCTION INDICATION
3 STORED INFORMATION ACCESS OR COPY PREVENTION
4 .Digital data (e.g., software program protection, data encryption)
5 .Video
6 ELECTRIC SIGNAL MASKING
7 .Video
8 .By signal having discrete step amplitude variation
9 ELECTRIC SIGNAL MODIFICATION (E.G., SCRAMBLING)
10 .Video
11 ..Variable time delay modulation of baseband video signal
12 ..Carrier phase shift
13 ..Carrier frequency conversion
14 ..Nonstandard scan of video information
15 ..By modifying synchronizing signal
16 ..Record or coin controlled
17 ..Phase inversion of scan line information
18 ..Facsimile
19 ..Encrypting of accompanying audio signal
20 ..Control coding
21 .Having transmission or distribution of key signal
22 .With magnetic record carrier (e.g., tape, drum)
23 .With user or record actuated authentication
24 ..Electronic funds transfer (e.g., automatic teller)
25 ..Computer
26 .With mechanical control of signal encryption (e.g., cam)
27 ..By perforated record
28 .By particular algorithmic function encoding
29 ..NBS/DES algorithm
30 ..Public key
31 .Plural modulation of single carrier
32 ..Wobbling of carrier
33 .Using plural paths or channels
34 ..Plural carrier frequencies
35 .Variable time delay modulation
36 .Time segment interchange
37 ..Block/data stream enciphering
38 .Frequency shift or inversion
39 ..With plural band pass filters
40 .With plural band pass filters
41 .With quantizing and subsequent normalizing of signal (e.g., reentry telephone circuitry)
42 .Data stream/substitution enciphering
43 ..Key sequence signal combined with data signal
44 ..With particular key generator
45 ...Multiple key level
46 ...Nonlinear (e.g., pseudorandom)
47 ...Plural generators
48 .With particular synchronization or initiation
49 .With digital signal handling (e.g., digital control, digital computer communication)
50 ..Including shift register or memory
51 .With production of printed copy (e.g., printer, typewriter)
52 .Including particular structure or housing (e.g., display, keyboard)
53 ..Audio transducer mounting or structure
54 BY MODIFYING OPTICAL IMAGE (E.G., TRANSMISSIVE OVERLAY)
55 WITH PRODUCTION OF PRINTED COPY (E.G., CRYPTOGRAPHIC PRINTER OR TYPEWRITER)
56 SELECTIVELY MOVABLE ELEMENT HAVING CODE CHARACTERS
57 .Rotatable
58 ..Characters on peripheral surface (e.g., cylinder section)
59 MISCELLANEOUS

CLASS 381 ELECTRICAL AUDIO SIGNAL PROCESSING, SYSTEMS, AND DEVICES

DECEMBER 1990

1	BINAURAL AND STEREOPHONIC
2	.Broadcast or multiplex stereo
3	..FM final modulation
4	...AM subcarrier
5	....Four discrete channels
6	.....Having transmitter
7	....Switch type detector or modulator
8	.....Two diodes
9	.....Four or more diodes
10	....Channel seperation control
11	....Automatic switchover between mono and stereo modes
12	....Stereo indicators (e.g., stereo presence)
13	....Antinoise
14	....Having transmitter
15	..AM or both AM and angle final modulation
16	...Having transmitter
17	.Pseudo stereophonic
18	..Pseudo quadrasonic
19	.Quadrasonic
20	..Matrix
21	...4-2-4
22	....Variable decoder
23	....With encoder
23.1	.Hearing aid
24	.Speaker arrangement
25	..Earphone
26	.Stereo sound pickup device (microphone)
27	.Center channel
28	.Amplifier
29	AUDIO BANDWIDTH COMPRESSION OR EXPANSION
30	.With content reduction encoding
31	.With digital signal processing or transmission
32	..Random access memory
33	.Delay line
34	TIME COMPRESSION OR EXPANSION (E.G., RUN LENGTH CODING)
35	.With content reduction encoding
36	SPEECH ANALYSIS AND SYNTHESIS COMBINED
37	.Using frequency
38	..Pitch
39	..Formants
40	.Using time
41	SPEECH ANALYSIS (E.G., PHONEME RECOGNITION)
42	.Voice recognition
43	.Word recognition
44	..Phonetic typewriters
45	..Frequency domain
46	.Detection of speech in noise
47	.Signal to noise ratio enhancement
48	.Speech parameter display
49	.Speech pitch fundamental frequency
50	.Speech formant frequencies
51	SPEECH SYNTHESIS
52	.Speech from printed matter
53	.Vocal tract model
54	HELIUM SPEECH
55	AUDIO TRANSDUCER PROTECTION CIRCUITRY
56	MONITORING OF SOUND
57	.Amplification control responsive to ambient sound
58	MONITORING/MEASURING OF AUDIO DEVICES
59	.Loudspeaker operation
60	.Testing of hearing aids
61	SOUND EFFECTS
62	.Tremelo or vibrato effects
63	.Reverberators
64	..Mechanical (e.g., reverberation chamber)
65	...Helical spring
66	DEREVERBERATORS
67	STETHOSCOPES, ELECTRICAL
68	HEARING AIDS, ELECTRICAL
68.1	.Directional
68.2	.Frequency control
68.3	.Bone conduction
68.4	.Gain control
68.5	.Spectacle
68.6	.Ear insert
68.7	.Hook over ear
69	.Specified casing or housing
69.1	..Having vacuum tube amplifier
69.2	..Having battery
70	ARTIFICIAL LARYNX, ELECTRICAL
71	ACOUSTICAL NOISE OR SOUND CANCELLATION
72	HEARING PROTECTORS, ELECTRICAL
73.1	SOUND OR NOISE MASKING
74	HEADPHONE CIRCUITS
75	MEGAPHONES
76	LECTERNS
77	ONE-WAY AUDIO SIGNAL PROGRAM DISTRIBUTION
78	.Drive-in
79	.Near field
80	.Multiple channel
81	..With switching
82	.Public address system
83	..Feedback suppression
84	..Spare amplifier substitution
85	..Speaker or channel switching
86	VEHICLE
87	HAVING NON-ELECTRICAL FEATURE (E.G., MOUNTING)
88	.Having enclosure or housing
89	..With loudspeakers driven in given phase relationship
90	..With loudspeaker (e.g., baffle, spatial orientation, etc.)
91	..With microphone
92	DIRECTIVE CIRCUITS FOR MICROPHONES
93	FEEDBACK SUPPRESSION
94	NOISE SUPPRESSION
95	MICROPHONE FEEDBACK
96	LOUDSPEAKER FEEDBACK
97	INCLUDING PHASE CONTROL
98	INCLUDING FREQUENCY CONTROL
99	.Having crossover filter
100	..With active device
101	.Automatic tone control
102	..With amplitude control
103	.Having automatic equalizer circuit
104	INCLUDING AMPLITUDE OR VOLUME CONTROL
105	.Remote
106	.With amplitude compression/expansion
107	.Automatic
108	..Including feedback
109	.With manual volume control
110	VOICE CONTROLLED
111	CIRCUITRY COMBINED WITH SPECIFIC TYPE MICROPHONE OR LOUDSPEAKER
112	.With carbon microphone
113	.With electrostatic microphone
114	.With piezoelectric microphone
115	.With magnetic microphone
116	.With electrostatic loudspeaker
117	.With magnetic loudspeaker
118	WITH MUSICAL INSTRUMENT
119	WITH MIXER
120	WITH AMPLIFIER
121	.Feedback
122	HAVING MICROPHONE
123	SWITCHING
150	ELECTRO-ACOUSTIC AUDIO TRANSDUCER
151	.Body contact wave transfer (e.g., bone conduction earphone, larynx microphone)
152	.Driven diverse static structure (e.g., wall, sounding board)
153	.With acoustic wave modifying structure
154	..Including sound conducting tube
155	..Directional

ELECTRO-ACOUSTIC AUDIO TRANSDUCER
.With acoustic wave modifying structure
156 ..Sound intensifying or spreading element (e.g., horn)
157 ...Mouthpiece
158 ..Absorbing or attenuating element (e.g., baffle, obstruction, damping)
159 ..Enclosure or resonant cavity
160 ..Reflecting element
161 .With mechanical amplifier arrangement
162 .Detail of mechanical vibration coupling to transducer (e.g., tuned vibrating element)
163 .Having bi-directional transducer
164 .Thermal response to, or generation of, sound vibration
165 .By modifying fluid flow
166 .Having a fluid as a conducting element
167 ..Ionized gap, spark, or flame
168 .Microphone
169 ..With mounting or support feature
170 ..Compound
171 ..Micromagnetic
172 ..Light modifying
173 ..Piezoelectric or ferroelectric
174 ..Capacitive
175 ..Semiconductor junction microphone
176 ..Conductive diaphragm (e.g., reed, ribbon)
177 ..Dynamic (e.g., magnetic)
178 ..Vibrating electrical contract
179 ..Resistive
180 ...Granular or carbon
181 ....Differential
182 .Plural or compound reproducers
183 ..Headphone
184 ..Different types of diaphragms
185 ..Having common voice coil
186 ..Plural diaphragms
187 .Having body supported structure (e.g., earphone)
188 .With mounting or support feature
189 .Having protective or sheilding feature
190 .Electrostrictive, magnetostrictive or piezoelectric
191 .Having electrostatic element (e.g., electret, vibrating plate)
192 .Electromagnetic (e.g., dynamic)
193 ..Having feature of edge-supported diaphragm
194 ..Movable voice coil
195 ...Multiple (e.g., double)
196 ...Pattern
197 ...Centering
198 ..Including adjustment mechanism
199 ..Magnetic circuit or core structure
200 ...Armature
201 ...Magnetic configuration (e.g., tubular or U-shaped)
202 ..Specified diaphragm shape or structure
203 ...Flat
204 ...Conical
205 .Electro-acoustical transducer mounting or support
124 MISCELLANEOUS

CLASS 382 IMAGE ANALYSIS

DECEMBER 1990

1 APPLICATIONS
2 .Personnel identification
3 ..Using a signiture
4 ..Using a fingerprint
5 ...Extracting minutiae such as ridge endings and bifurcations
6 .Biomedical applications (e.g., blood cell analysis)
7 .Reading currency or bank checks (e.g., documents bearing E-13B type characters)
8 .Manufacturing
9 IMAGE SEGMENTATION
10 PATTERN RECOGNITION
11 .Limited to specially coded, human-readable characters
12 ..Characters formed entirely of parallel bars (e.g., CMC-7)
13 .On-line recognition of handwritten characters
14 .Adaptive pattern recognizers (e.g., adaline, perceptron)
15 ..Capable of unsupervised learning
16 .Feature extraction
17 ..Multi-spectral features (e.g., color, frequency, phase)
18 ..Feature counting or histogramming
19 ..Local or regional features
20 ...Slice codes
21 ...Directional codes and vectors (e.g., Freeman chains, compass-like codes)
22 ...Pattern boundary and edge measurements
23 ...Point features (e.g., spatial coordinate descriptors)
24 ...Linear stroke analysis (e.g., limited to straight lines)
25 ...Shape and form analysis
26 ....Topological properties (e.g., number of holes in a pattern, connectivity, etc.)
27 ...Neighborhood transforms and matrix operators
28 ..Global features (e.g., measurements on image as a whole, such as area, texture, projections, etc.)
29 ..Waveform analysis
30 .Template matching (e.g., specific devices that determine the best match)
31 ..Spatial filtering (e.g., holography)
32 ..Nonholographic optical mask or transparency
33 ..Electronic mask
34 ...Comparator
35 ...Resistor matrix
36 .Classification
37 ..Sequential decision process (e.g., decision tree structure)
38 ...With a multi-level classifier
39 ..Statistical decision process
40 .Context analysis
41 IMAGE TRANSFORMATION OR PRE-RECOGNITION PROCESSING
42 .Correlation or convolution
43 .Fourier, Hadamard, or Walsh transform
44 .Changing the image coordinates
45 ..To position or translate the image
46 ..To rotate the image
47 ..To change the scale or size of an image
48 .Locating a pattern
49 .Multi-layered image transformations
50 .Adaptive quantization or variable thresholding
51 ..Based on the results of a histogram or count
52 ..Based on a local average
53 ..Based on peak levels
54 .Image enhancement or restoration
55 ..Line thinning or thickening
56 .Data compression or image coding
57 POST-RECOGNITION PROCESSING (E.G., EDITING AND ERROR CHECKING)
58 IMAGE SENSING
59 .Hand-held
60 .Curve tracer
61 .Format control
62 .Multiple scanning
63 ..Pre-scanning
64 .Magnetic
65 .Optical
66 ..Single spot
67 ..Single line
68 ..Full retina
69 MISCELLANEOUS

CLASS 383 FLEXIBLE BAGS

DECEMBER 1990

1 BIODEGRADABLE FEATURE
2 SELECTIVELY ADJUSTABLE VOLUME
3 INFLATABLE
4 CONVERTIBLE
5 TAMPER INDICATING
6 LIFTING OR SUSPENDING ELEMENT (E.G., HANDLE)
7 .Unitary with bag (e.g., element formed by hand hole)
8 ..Loop extending between opposite walls
9 ..Bag material includes aperture for rod-like support
10 ..Bag material includes hand-receiving aperture
11 .Magnetic or adhesive-type element (includes Velcro)
12 .Attached to bag frame
13 .Detachable
14 .With provision for positioning element in nonuse location
15 .Plural interengaging elements
16 .Plural elements located at diverse bag regions (i.e., bag bottom, bag middle and/or bag top)
17 .Including reinforcement or stress distribution means attached to or adjacent element
18 ..Extending across bag bottom
19 ..Extending axially through bag interior to bag bottom
20 ..Additional layer of material at element attachment location
21 .Attached to distinct end wall
22 .Hanging element
23 ..Hook-type
24 ..Closed loop
25 .Single element
26 ..Bag includes opening through bag material to receive element
27 ...Opening extending through fold of folded bag portion
28 ..Secured to bag interior
29 ..Straddles bag mouth
30 ..Secured to folded bag closure
31 ...Closure flap
32 WITH STACKING FEATURE
33 WITH MEANS TO MAINTAIN THE BAG MOUTH IN AN OPEN CONFIGURATION
34 .Hinged mouth stiffeners
34.1 ..Stiffeners include four or more hinged segments
35 WITH MEANS TO FACILITATE MANUAL SEPARATION OF FLATTENED BAG WALLS
36 WITH INTEGRAL FUNNEL
37 PLURAL
38 COMPARTMENTED
39 .Compartment-forming member secured to backing
40 .Including auxiliary compartment
41 WITH PLURAL ACCESS OPENINGS
42 WITH CLOSURE
43 .Self-closing type
44 ..Responsive to content (e.g., valve)
45 ...With vent
46 ...With closure reinforcing or stiffening means
47 ...With means to facilitate opening closure
48 ...With supplemental closing feature
49 ....Resilient
50 ....Reversely folded portion of closure element
51 ....Slit or slot
52 ....Adhesive
53 ...In distinct end wall
54 ....Including separate closure element
55 ...Folded bag corner
56 ....Including separate closure element
57 ...Closure includes inwardly folded bag wall portions
58 ...Overlying access opening in bag material
59 .Including auxiliary means for forming leakproof closure seal
60 ..Annular gasket
61 .Multiple independent closures for single access opening
62 .With provision for positioning closure element in nonuse location
63 .Rib and groove
64 ..With sliding element
65 ..Including means to facilitate disengagement
66 .For access opening in sidewall
67 .For access opening in bag bottom
68 .Elongated clamping elements
69 ..Sliding
70 .Twisted bag mouth
71 .Gathered bag mouth
72 ..Including drawstring-type securing element
73 ...With mouth opening aid
74 ...With means to maintain the securing element in closed configuration
75 ...In bag hem
76 ...Through bag openings
77 ..Securing element consisting of unitary bag portion
78 .Including separate closure element for straddling bag mouth (i.e., overlaps exterior portions of opposed bag walls)
79 ..Including securing element designed to extend through aligned openings in closure element (e.g., stitching)
80 ..Cap-type
81 ..Reusable
82 ...Bag walls designed to be rolled together or folded on common fold line
83 ..Bag walls designed to be rolled together or folded on common fold line
84 .Including closure flap which overlaps sidewall exterior when closed
85 ..Bag walls designed to be rolled together or folded on common fold line
86 ..Reusable
86.1 ...Including fastening element removably extending through aperture in bag material
86.2 ....Aperture extends through closure flap
87 ...Flap side edges permanently secured to bag (e.g., sandwich bag type)
88 .Bag walls designed to be rolled together or folded on common fold line
89 ..With separate securing element for roll or fold
90 ...Element extends substantially 180 degrees or more around roll or fold
91 ....Element extends around side edge
92 .Including securing element designed to extend through aligned openings in bag material (e.g., stitching)
93 .Closure within bag
94 ..Heat seal
95 ..Reusable
96 ...Stopper or plug
97 ...Zipper
98 .Overlapped flaps
99 ..Reusable
100 WITH VENTING OR VENTILATION MEANS
101 .Fluid circulates between bag plies

WITH VENTING OR VENTILATION MEANS
102 .Pervious material
103 .Opening in bag material
104 FREE-STANDING
105 WALL DETAILS
106 .Transparent portion or window
107 .Specified seam structure
108 ..Waterproof
109 .Multi-layer or ply
110 ..Insulated
111 ..Removable ply
112 ..Stretchable layer or ply
113 ..Barrier layer or ply (e.g., waterproof)
114 ..Including specified end structure
115 ...Overlapping extension formed by cuts in bag wall
116 ..Coating or lamination
117 .Woven or mesh-type material
118 .Stretchable
119 .Reinforced
120 .Pleated or gusseted
121 END STRUCTURE (E.G. BOTTOM)
121.1 .Rigid bottom
122 .Seamless
123 .Formed by folding bag walls on common fold line and joining together
124 ..Foldable to form distinct end wall
125 .Overlapping extensions of opposed walls
126 ..Extension formed by cuts in bag wall
127 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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901 HOT WATER OR ICE BAG
902 HAVING NONBAG USE
903 STRESS RELIEF
904 FILLING TUBE
905 DEAD FOLD (DUCTILE) CLOSURE ELEMENT
906 DISPENSING FEATURE
907 PECULIAR, PARTICULAR SHAPE
908 MATERIAL HAVING SPECIFIED GRAIN DIRECTION OR MOLECULAR ORIENTATION

1 Vibratory (E.G., piezoelectric or kinetic) bearing
2 Nonjoint, nonrotating fulcrum bearing
3 .Knife-edge fulcrum
4 ..Edges up and down
5 ..Edge up
6 ..Edge down
7 Linear bearing
8 .Witn detection, nonbearing magnetic or hydraulic feature
9 .With temperature, electrical, or orthogonal feature
10 .Tensioned or resilient race or roller member
11 .For crosshead
12 .Fluid bearing
13 .Lubricating
14 ..Bearing for valve stem
15 .Combined with seal or guard
16 ..Annular
17 .For exetension table
18 .Ball bearing for drawer
19 .Roller bearing for drawer
20 .Plain bearing for drawer
21 ..Stop, detent, or lock
22 ..Anchoring or aligning means
23 ..Specified race structure or material
24 .Having relatively movable parts for latera insertion and retention of shaft
25 .Combined plain and antifriction
26 .Plain bearings
27 ..For flush tank
28 ..For valve stem
29 ..Cylindrical outer race
30 ...For die set or stamping mill shaft
31 ...For hand-held drill shaft
32 ...For piston rod
33 ..For elevator
34 ..For seat
35 ..More than two telescoping members
36 ..For structural installation
37 ..Resilient supporting member
38 ..Self-aligning
39 ..Gib
40 ..With adjustment means
41 ..Assembling means
42 ..Specified pad, liner, wear plate or race structure; bearing material
43 .Recirculating
44 ..Roller
45 ..No cylindrical race
46 .Roller bearing for extensive cylinder
47 .Alternating roller; or antifriction bearing for auto seat
48 .Combined ball and roller bearings
49 .Ball bearing
50 .Roller bearing
51 ..Cage configuration
52 ..Cylindrical inner or outer track
53 ..Location of plural roller sets; more than two telescoping members
54 ..Resilient member
55 ..Raceway configuration
56 ..Nonaxle supported roller structure
57 ..Adjustment or self-alignment means
58 ..Roller-on-axle bearing
59 ..Assembling means
91 ROTARY BEARING
92 .Roller drill bit
93 ..Lubricating detail
94 ..Seal detail
95 ..Inserts or bearing surface detail
96 ..Roller cone retaining means
97 .Water lubricated propellor shaft or well shaft
98 ..With elongated strips or staves
99 .Hydraulic or pneumatic bearing support
100 .Fluid bearing
101 ..With antifriction bearing
102 ...Backup
103 ..Flexible member
104 ...Plural ends fixed
105 ...Thrust bearing
106 ...Auxiliary resilient support
107 ..Radial and thrust
108 ...Spherical
109 ....Gas bearing
110 ...Conical
111 ...Outer recess forming fluid pad
112 ...Grooved thrust bearing surface
113 ...Central member recess
114 ..Radial
115 ...Shaft recess
116 ...Half-circular or less outer member
117 ...Pivoted fluid pad
118 ...Outer recess forming fluid pad
119 ...Resilient mounting member or seal
120 ...Circumferential groove in outer member
121 ..Thrust
122 ...Pivoted fluid pad
123 ...Grooved bearing surface
124 ...Resilient mounting member or seal
125 .Resilient bearing surface
126 .Plural bearings one plain and one antifriction
127 ..Roller
128 ...Tapered roller
129 .Plain bearing
130 ..With specified seal
131 ...Fluid actuated
132 ...Fluid barrier
133 ....Magnetic fluid
134 ....Gas
135 ...Centrifugal
136 ....With wick
137 ...And scraper
138 ...Unitary bearing and seal
139 ...Relatively rotatable radially contracting
140 ....Flexible sealing member
141 ....Diaphragm
142 ....Axially translatable member rotatable with shaft
143 ....Plural seals
144 ...Labyrinth
145 ...Arcuate bearing surface
146 ....Axially spaced lip
147 ...Lip seal
148 ....With radially acting bias means
149 ....Radially contained packing with axially acting follower
150 ...Mechanically actuated
151 ...Resilient sealing surface
152 ....O-rings
153 ....Elastomeric
154 ..Rocking type bearing
155 ...Lubricated
156 ...Movable pivot axis
157 ..For plow or colter disk
158 ..Railway car journal
158.1 ...With resilient mounting member
159 ...With guard or seal
160 ...Lubricating
161 ....For thrust bearing
162 ....For brass bearing
163 .....Reservoir fed
164 ......Capillary
165 ....With lower reservoir
166 .....Journal operated feed
167 ......Band
168 ......Centrifugal
169 ......Pump
170 .....Capillary
171 ......With wick biasing means

	ROTARY BEARING
	.Plain bearing
	..Railway car journal
	...Lubricating
	....With lower reservoir
	.....Capillary
	......With wick biasing means
172	.......Metal spring
173	........Coil spring
174	.......Rubber
175	......With capillary material retainer
176	.......Integral with box
177	.....Including roller applicator
178	......Yeildably supported
179	.......Coil spring
180	........Spring under compression
181	....Wick structure
182	...Sheet metal journal box
183	...With journal retainer and guide
184	....Lateral guide
185	.....Mounting feature
186	......Resilient
187	...Interior
188	...Includes thrust bearing
189	...Lid
190	....Mounted for swinging
190.1	.....About pivot at right angle to plane of lid
190.2	.....Spring and cam biased open
190.3	......With roller
190.4	.....Spring biased closed
190.5	....Sliding
190.6	....Lid structure
190.7	.....With latch
191	...Brasses
191.1	....Self aligning
191.2	....Bearing surface liner or inserts
191.3	....Assembling means
191.4	....Mounting structure
192	..Self-adjusting or self-aligning
193	...For vertical shaft
194	....With lower thrust and upper radial bearing
195	....Oscillatory suspension
196	.....Resiliently centered
197	....Oscillating thrust bearing
198	.....Resiliently centered
199	....Shaft balancing means
200	.....Resiliency on radial bearing
201	....Having body and spindle connector
202	...Resilient
203	....Ball and socket
204	.....For electric motor
205	...Fixed pivot axis
206	...Ball and socket
207	....Sheet metal socket
208	....Assembly
209	.....Separable ball retaining member
210	......Lock ring
211	......Of ball
212	......Sectional
213	....With lubricating means
214	.....Having felt or wick
215	..With resilient mounting member
216	...For connecting rod
217	...Lock type
223	...For thrust bearing
224	....Pivoted pad
225	....Helical coil spring
218	...Coil spring
219	....Biased bearing surface segment
220	...Nonmetallic
221	....Laminated
222	....Cylindrical
226	..For vertical shaft
227	...Spinning spindle
228	....With thrust and radial bearing
229	.....Adjustable spindle
230	.....Laterally resilient
231	......Resilient sleeve
232	......Volute coil spring
233	......Helical coil spring
234	......Fluid damping
235	......Rubber
236	.......At fixed end
237	.....With interior dead shaft
238	.....Pivoting spindle
239	....Bolster type bearing
240	....Lower end thrust bearing
241	.....With lubricating means
242	...Base supported table or drum
243	...Lower end thrust bearing
244	....For shaped shaft end
245	.....Spherical shaft end
246	.....Conical shaft end
247	..With adjustment means
248	...For thrust bearing
249	....Threaded member moves axially
250	....For crankshaft
251	....For thrust plate
252	...And support
253	....Simultaneous adjustment
254	....For horse power or sand reel
255	....Eccentric
256	....For roller end support
257	....For suspended shaft
258	.....Screw adjustment
259	......Horizontal and vertical
260	....Rectilinear
261	...Bearing surface
262	....For axle
263	....Adjustable bearing surface segment
264	.....Axial adjustment
265	.....Axially spaced annular segments
266	.....Two opposed bearing surface segments
267	......With wedge adjustment
268	.......For connecting rod
269	........Transverse screw adjustment
270	......For connecting rod
271	....Tapered sleeve
272	.....Split
273	....Split sleeve
274	....Pressure applying
275	..Radial collar and sleeve
276	..Specified sleeve or liner
277	...Insulating
278	...Temperature compensating
279	...Porous metal
280	...Liner on shaft
281	....Removably secured
282	...Bearing surface insert
283	....Groove
284	....Pocket array
285	.....Circular pocket
286	...Lubricant distributing
287	....High speed
288	....For crankshift
289	....For rotary member
290	.....Outer sleeve on shaft
291	....Groove
292	.....Helical or herring bone
293	....Pocket array
294	...For crankshaft
295	...Mounting feature
296	....Radial protrusion or sleeve end flange
297	...Nonmetal
298	....Fabric layer and capillary passages
299	....Nylon
300	....Polytetrafluorethylene (e.g., Teflon®)
301	...Spirally split
302	..Distributed weight
303	...For thrust bearing
304	....Tandem thrust

	ROTARY BEARING
	.Plain bearing
	..Distributed weight
	...For thrust bearing
305	....Grooved
306	....Pivoted pad
307	.....With lubricating means
308	.....Pad mounting structure
309	...Pivoted pad
310	....Noncircumferential
311	....Lubricant supply structure
312	....Pad mounting structure
313	..Cooling by lubricant
314	...Emergency lubrication
315	...Water lubrication
316	...Fluid path
317	..Specified cooling means
318	...Mist
319	...Frozen lubricant
320	...Nonliquid cooling
321	...Coolant path
322	..Lubricating
368	...For thrust bearing
369	....Forced feed
370	....Capillary
371	....For bearing at end of shaft
372	...Fixed shaft
373	....Forced feed
374	....Yoke reservoir
375	....Shaft-supported reservoir
376	.....At end of shaft
377	....Specified external feed
378	.....Spiral groove
379	.....Capillary
380	....Internal feed
381	.....Internal reservoir
382	......Capillary
383	.....Capillary
384	....Clearer and agitator
385	...Reservoir in rotating member
386	....Removable reservoir
387	....Capillary
388	....With feed regulator
389	....Feed to shaft end and center
390	....End feed
391	....Center feed
392	....Including distributing means
393	....Including inward deflector
394	....Including rotary blade
395	....With agitator
396	...Bolt type shaft
397	...For rotary shaft
398	....Forced feed
399	.....Lubricant metering structure
400	....Reservoir external to bearing
401	....Upper reservoir for horizontal shaft
402	.....Capillary
403	....Lower reservoir for horizontal shaft
404	.....Shaft operated elevating means
405	......Band or chain
406	.......Ring type
407	......Roller or ball
408	.....Capillary
409	......With wick biasing means
410	.....With wick retainer
411	......Differing capillary properties
412	......With lubricant impelling means
413	......Wick structure
414	.....Suction or pressure
415	....For vertical shaft
416	..for rotary member
417	...Pulley
418	...Roller
419	....Elongated
420	..Thrust bearing
421	...For pivot of towed vehicle
422	...For pivot of vehicle wheel frame
423	...For railway car side
424	...Axially spaced collars
425	...Including thrust plate at shaft end
426	....Plural end plates
427	....Axially related hub liner
428	..Mounting or support
429	...For crankshaft
430	....Connecting rod
431	....Pedal type crank
432	....Block and cap type
433	.....Engine housing closure
434	...Block and cap type
435	...Lock type
436	....Pivoted
437	.....Having bolt securing means
438	...Machine housing
439	...Mounted in wall aperture
440	...Bearing surface integral with support
441	...Annular support
442	...Single direction
443	....From above
444	....From below
445	.Antifriction bearing
446	..Nonbearing magnetic feature
447	..Elliptical, eccentric, alternating roller, or mass ball features; compensating for nonthermal deformation; centrifugal preload
448	..Sensor or inspection features; liquid metal or shipping protection features; bearing member integral with seal
449	..Outer race integral with wheel
450	..Skew prevention; formular relationship
451	..Recirculating or nonannular path
452	..Radial bearing with separate thrust bearing; radial ball-thrust roller
453	...Radial ball-thrust ball
454	...Radial roller-thrust ball
455	...Radial roller-thrust roller
456	..Radial bearing
457	...For crankshaft
458	....For pedal crank
459	...Railway car journal
460	...Disk plow
461	...Concentric
462	...Lubricating
463	....Solid lubricant feature
464	....Dipping, surface treatment or member versus lubricant density
465	....Centrifugal feature
466	....Jet, baffle or valve
467	....Cooling by lubricant
468	....Oil mist feature
469	....Porous or wick structure
470	....Cage structure
471	....With pressure or suction means
472	....Impeller
473	....Reservoir, filter or lubrication circuit structure
474	....Lubrication port
475	.....In race
476	...With cooling, heating or insulating
477	...With specified seal
478	....Centrifugal loading or slinging; fluid seal
479	....Pressure establishing or loading
480	....Labyrinth
481	....Relatively rotatable radially contacting
482	.....Resilient sliding surface material
483	....Radially contained packing with axially acting follower
484	....Lip seal
485	.....Radially outward lip
486	.....Plural lips
487	....Radially opening U-shaped retainer
488	....Flange small clearance
489	....O-ring or end cap seal

	ROTARY BEARING
	.Antifriction bearing
	..Radial bearing
490	...Ball bearing
491	....Ball structure
492	....Ball or race composition or material
493	....Temperature compensation
494	....Ball and roller bearings
495	....Self-aligning
496	.....Ball to larger spherical surface
497	......Radially outer larger spherical surface
498	.....Conforming spherical surfaces
499	....Split race
500	.....With race adjustment means
501	.....Double split
502	.....Split ring
503	......Fractured split
504	.....Plural rows balls
505	.....One race only split
506	......Inner race split
507	....Slot for ball insertion
508	.....With means for blocking slot
509	......Blocking by cage
510	....Specified means facilitating assembly or disassembly
511	.....Annular opening for ball insertion
512	....Plural axially spaced balls with integral race
513	....Specified bearing race structure
514	.....Strictly conical contact surface
515	.....Including radial race flange
516	.....Ball groove surface detail
517	....Axially biased race
518	.....Coil spring
519	....Adjustment means
520	....Discrete spacing member
521	.....Ball spacer
522	.....Roller spacer
523	....Cage structure
524	.....Including antifriction members
525	.....Wire cage
526	.....Resilient feature
527	.....Material, composition or laminate
528	.....Fully circular aperture for ball
529	......Two circular apertures per ball
530	......Plural elements joined to form an aperture
531	.....U - or C - shaped slot
532	......Unitary uniform strip
533	.....Entirely noncircular or nonconforming pocket
534	.....Unitary member
535	....Resilient support member
536	.....Elastomer or plastic
537	....Assembling means
538	.....Wedge means
539	.....Snap means
540	.....Threaded sleeve
541	.....Radial set screw
542	.....Bolt
543	....Fixed shaft and rotating outer member
544	.....For hub
545	......For bicycle hub
546	.....Outermost member cylindrical
547	.....Outermost member grooved
548	...Roller bearing
549	....Fixed supporting roller
550	....Toothed
551	....Discrete circumferential or axial spacer
552	.....Spaced by balls
553	.....Spaced by rollers
554	......With associated rings
555	......Mating grooves and projections
556	....Hydraulic axial jacking
557	....Temperature compensation
558	....Self-aligning
559	....Means facilitating assembly or disassembly
560	.....By cage or race structure
561	.....By groove and ring
562	.....By threaded member
563	....Axially biased race or roller
564	....Race end structure
565	....Roller structure
566	.....Helical feature
567	.....Hollow
568	.....Curved roller
569	....Race, liner or sleeve
570	.....Split ring
571	.....Tapered race
572	....Cage structure
573	.....Wire, filament, segmented or surface treated
574	.....Projecting into or through roller
575	.....Uniform sheet metal
576	.....Nonmetallic
577	.....Split ring or open slot
578	.....Nonunitary
579	......Bolted, welded or with spring
580	.....Lip on transverse bar
581	.....Resilient support member
582	.....Elastomer or plastic
583	....With adjustment means
584	....Assembling means
585	.....Race fastening means
586	....Fixed shaft and rotating outer member
587	.....Outermost element cylindrical
588	.....Outermost element grooved
589	.....For hub
590	..Thrust bearing
591	...Vehicle center
592	....Ball
593	....Roller
594	...Railway truck center bearing
595	...Railway truck side bearing
596	....Ball
597	....Roller
598	.....Toothed
599	.....With self-adjustment means
600	.....Assembling means
601	.....Contaminent elimination; adjustment means
602	......Adjustment by shim
603	...Spinning spindle
604	...Different size rolling elements; spacers; noncircular array
605	...Temperature compensation
606	...Lubricating
607	...Seals
608	...Concentric rolling members
609	...Ball bearing
610	....Single ball
611	....Resilient feature
612	....Self-aligning
613	....Plural rows balls or tandem thrust
614	....Cage structure
615	....Race structure
616	....Adjustment means
617	....Assembling means
618	...Roller bearing
619	....Roller structure or orientation; plural axially spaced rows or tandem thrust
620	....Resilient feature; adjustment or self-alignment means; assembling means
621	....Race and cage structure
622	....Race structure
623	....Cage structure
624	BEARING SAFETY OR SELF-CLEANING MEANS
625	BEARING-SURFACE TREATMENT
626	SHIM FOR BEARING

627	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
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900	.Cooling or heating
901	.Floating bushing
902	.Porous member
903	.Retaining ring
904	.Propeller shaft outer bearing
905	.Temperature compensation
905.1	.Cup-shaped bearing
906	.Antirotation key
907	.Bearing material or solid lubricant
907.1	..Jewel, glass, ceramic or carbon
910	..Powders
911	..Including fiber
908	..Nylon or polytetrafluorethylene
909	..Plastic
912	..Metallic
913	..Metallic compounds

CLASS 388 ELECTRICITY, MOTOR CONTROL SYSTEMS

Class 388 is to be considered an integral part of Class 318 wherein subclasses 800-841 of Class 388 follow subclass 300 of Class 318, and subclasses 842-860 of Class 388 follow subclass 383 of Class 318 respectively and follow the schedule hierarchy of Class 318, retaining all pertinent definitions and class lines of Class 318.

800	CLOSED LOOP SPEED CONTROL SYSTEM FOR DC MOTOR WITH COMMUTATOR
801	.Field control, or field and armature control, by digital or combined analog and digital circuitry
803	.Field control, or field and armature control, by analog (only) circuitry
804	..By pulse width or duty cycle modification
805	..By phase or frequency modification
806	..By voltage or current modification
807	...With variable impedance
808	..By selection of windings
809	.Armature control by digital or combined analog and digital circuitry
811	..By pulse width or duty cycle modification
812	..By phase and frequency modification
813	..By phase modification
814	..By frequency modification
815	..By voltage or current modification
816	.Analog armature control
819	..By pulse width or duty cycle modification
820	..By phase or frequency modification
821	..By voltage and current modification
822	..By voltage modification
823	..By current modification
824	..By variable impedance (e.g., potentiometer)
825	OPEN LOOP SPEED CONTROL SYSTEM FOR DC MOTOR WITH COMMUTATOR
826	.Field control, or field and armature control
827	..With plural selectable speeds (e.g., manual switch)
828	.Armature control by digital or combined analog and digital circuitry
829	..By pulse width or duty cycle modification
830	.Analog armature control
831	..By pulse width or duty cycle modification
832	..By frequency modification
833	..By voltage or current modification
834	..By selection of windings
835	..By control of motor structure
836	...Position or number of brushes
837	..By periodic mechanical switch
838	..With plural selectable speeds (e.g., with manual switch, potentiometer
839	...By selecting impedance
840	....Resistive
841	....Inductive
842	CLOSED LOOP ACCELERATION CONTROL SYSTEM FOR DC MOTOR WITH COMMUTATOR
843	.Field control, or field and armature control
844	.Armature control
847	..By voltage or current modification
848	OPEN LOOP ACCELERATION CONTROL SYSTEM FOR DC MOTOR WITH COMMUTATOR
849	.Field control, or field and armature control
850	..By transformer or inductive device
851	..By patterned switch
852	..By insertion of resistance
853	.Armature control
854	..By voltage or current modification
855	..By selectable or variable impedance
856	...By insertion of resistance or shorting of circuit
857	....With relay
858	.....Time delay relay
859	....With patterned switch
860	...Manual

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CROSS-REFERENCE ART COLLECTIONS

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NOTE: No paper files exist for these art collections. They are to be used for APS searching. An effective way to use them is to cross search an art collection with a range of subclasses in the schedule of this class, (e.g., Use the search statement "S 388820/CCLS AND 388902/CCLS" to find closed loop analog speed control by frequency modification combined with compensation for voltage fluctuations).

900	SPECIFIC SYSTEM OPERATIONAL FEATURE
901	.Sample and hold
902	.Compensation
903	.Protective (e.g., voltage or current limit)
904	.Stored velocity profile
905	.Armature and field windings connected in series (i.e., series motor)
906	.Proportional-integral system
907	SPECIFIC CONTROL CIRCUIT ELEMENT OR DEVICE
907.2	.Bridge circuit
907.5	.Computer or microprocessor
908	.Frequency to voltage converter
909	.Monitoring means
910	.Operational/differential amplifier
911	.Phase locked loop
912	.Pulse or frequency counter
913	.Saturable reactor, space discharge device, or magnetic amplifier
914	..Thyratron or ignitron
915	.Sawtooth or ramp waveform generator
916	.Threshold circuit
917	.Thyristor or SCR
918	..Trigger by unijunction transistor
919	..Triggered by resistor or capacitor
920	..Chopper
921	.Timer or time delay means
922	.Tuned or resonant circuit
923	SPECIFIC FEEDBACK CONDITION OR DEVICE
924	.Centrifugal device (e.g., governor)
925	..Including contacts which open and close motor circuit
926	..Which controls a vacuum tube or solid-state device in motor circuit
927	..Which varies resistance of motor circuit
928	..Which controls position of commutator brushes
928.1	.Counter or back EMF (CEMF)
929	.Fluid/granular material flow rate, pressure, or level
930	.Load or torque
931	..Electric generator or magnet as auxiliary load
932	..With reverse torque (e.g., braking)

	SPECIFIC FEEDBACK CONDITION OR DEVICE
933	.Radiant energy responsive device
934	.Thermal condition
935	SPECIFIC APPLICATION:
936	.Food preparation equipment
937	.Hand tool

CLASS 392 ELECTRIC RESISTANCE HEATING DEVICES

DECEMBER 1990

CLASS 392 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 219 (AFTER SUBCLASS 270) AND FOLLOWS THE SCHEDULE HIERARCHY RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 219.

	HEATING DEVICES (CLASS 219 SUBCLASS 200)
301	.Borehole type
302	..With heat exchange fluid
303	..With vapor generator
304	..Heating element surrounding delivery pipe
305	..Suspended by cable in well
306	..Plural separate heating devices
307	.Combined with nonelectric heating means (e.g., gas, etc.)
308	..For heating liquid
309	..Hot plate
310	..Oven type
311	.Fluid-in-circuit type heater
312	..Method
313	..Portable
314	..Continuous flow of fluid being heated
315	...With means to adjust current path between electrodes
316	....Responsive to condition of fluid
317	....Movable dielectric means
318	...Current control means
319	...With discharge member for line or tank
320	...Tube or pipe forms flow path
321	....Pipe forms at least one electrode
322	..With reservoir or tank
323	...With means to adjust current path between electrodes
324	..Steam or vapor generator
325	...Line connected boiler
326	....Control of electrode immersion level
327	.....By electrode current
328	.....By pressure
329	....With means to adjust current path between elctrodes
330	.....Movable dielectric means
331	....Electrode arrangement
332	.....Water jet electrode
333	...Manually filled tank or container
334	....With means to adjust current path between electrodes
335	....With supply interlock means
336	....Separate electrode compartment
337	.....Electrode compartment removable from tank
338	..Electrode details
339	.With heat storage means
340	..Method
341	..For fluid heating (e.g., gas or liquid, etc.)
342	..For vaporization
343	..For subsequent heating by radiation
344	..For subsequent heating by convection
345	..Means to control heating accumulating medium
346	..Heat accumulating medium details
347	.Convection space heater
348	..Artificial fire
349	..Central heating type
350	...With air delivery duct
351	..Floor furnace type
352	..Baseboard type
353	...With baffle
354	..With intermediate heat absorber
355	...Heated by radiant source
356	....With fan blower
357	...With fluid heat absorber
358	....By fan blower
359	....Wall mounted
360	..Forced air type
361	...Heating attachment for fan
362	...Fan with heated blades
363	...Wall mounted
364	...Ceiling mounted
365	...Portable
366	....With fan position adjusting means
367	....Multi-direction air outlet
368	....With baffle
369	.....Counterflow
370	..Wall mounted
371	...In wall cavity
372	..Mounted in or on window or door
373	..Portable
374	...With baffle
375	..Combined with radiation
376	...With reflector
377	...With heat exchange fluid
378	....In plural sections
379	.Concentrated heated air stream (i.e., blast)
380	..For drying body part
381	...Wall mounted
382	..With support
383	..Portable
384	...With handle
385	....Pistol-grip type
386	.Vaporizer
387	..Method
388	..For metal vapor deposition
389	...With crucible
390	..With disposable evaporant cartridge or container
391	..By radiant heat source
392	..Wall mounted
393	..By light bulb heat source
394	..Liquid evaporant (e.g., water, etc.)
395	...With wick
396	...In continuous flow line connected heater
397	....Pipe or tube forms flow path
398	.....With internal heating element
399	...Flash chamber
400	...In-line connected closed tank (i.e., pressurized)
401	....With internal heating element
402	...In-line connected open tank or container (i.e., nonpressurized)
403	...Container with self-contained evaporant supply
404	....Hand-held
405	....With separate heating chamber
406	.....Removable
407	.Radiant heater
408	..With filter or diffuser for radiant energy
409	..Hand-held
410	...With air or gas circulation
411	..Lamp banks (i.e., array of plural lamps)
412	...Adjustable lamps position
413	....Adjustable individual lamp position
414	...Lamp banks form arch
415	...Lamp banks movable relative to stationary work during use
416	..With chamber
417	..For heating moving strand, web or sheet
418	..With support for workpiece
419	..Focussed radiant beam
420	...Plural reflectors
421	...Elliptical or ellipsoidal reflector
422	..With reflector
423	...Elongated reflector
424	....Heating element in transparent tubular envelope

HEATING DEVICES (CLASS 219 SUBCLASS 200)
.Radiant heater
..With reflector
...Elongated reflector
425 ....With exposed radiant heating element
426 ...Bowl-shaped reflector
427 ....Annular heating element concentric with reflector axis
428 ....Linear heating element aligned with reflector axis
429 .....Coiled on core
430 ...Wall mounted
431 ...Collapsible or foldable reflector
432 ..Radiant extended surface type heater
433 ...With exposed radiant heating element
434 ....On ceramic support structure
435 ...With heat radiating panel
436 ....Wall or ceiling mounted
437 ....Plural panels
438 ....Heating element formed as coating on radiating panel surface
439 .....Nonmetallic panel
440 ..Multi-direction radiant heat output
441 .Tank or container type liquid heater
442 ..Pour-in displacement discharge type tank
443 ..Flexible container (e.g., water bottle, etc.)
444 ..Portable container or tank
445 ...Plural compartments
446 ...With agitator
447 ...With internally positioned heating element
448 ....Removably inserted through fill opening
449 ..Line connected tank
450 ...Plural serially connected compartments
451 ...With immersion heating element
452 ....With baffle or guard
453 ....Removably insertable into tubular receptacle in tank
454 ....Plural heating zones
455 ....With heating element mounting arrangements
456 ....With heat exchange fluid
457 ....With protecting means against galvanic corrosion
458 ...With external heater
459 ....Clamped or secured to tank wall
460 ....Producing radiation
461 ....With externally mounted circulation-type heater
462 .....Laterally disposed (i.e., side-arm type)
463 ...With timer controlled energization
464 ....Off-peak power
465 .Continuous flow type fluid heater
466 ..Method
467 ..With hot plate
468 ..Pipeline tracing
469 ...Skin effect heater type (e.g., S.E.C.T., etc.)
470 ..Disposable cartridge, tube or bag forms heated flow path (e.g., blood bag, etc.)
471 ..Combined liquid flow heater and pump unit
472 ..Flexibe (e.g., hose, etc.)
473 ..Fluid heater carried on discharge member
474 ...With flow control valve (e.g., faucet, etc.)
475 ....Valve turns heating element on and off
476 ...Hand-held discharge member
477 ....With storage container for fluid to be heated
478 ..Fluid conveying tube or pipe comprising resistive heating element
479 ..Externally heated line connected section
480 ...Pipe or tube forms flow path
481 ....Coiled
482 ...Plural pipes or tubes form flow path
483 ...Heating element producing radiation
484 ...Block forms flow path
485 ..Heated line section with heating element internal of flow path
486 ...Plural pipes or tubes form flow path
487 ...With jacket for heating element
488 ...Pipe or tube forms flow path
489 ....With jacket for heating element
490 ...Plural heated line sections (e.g., series or parallel, etc.)
491 ...With baffle-defined flow path
492 ....Producing counterflow circulation
493 .....Heating element integral with baffle
494 ...Block forms flow path
495 ..Plural different fluids simultaneously heated
496 ..With heat exchange fluid
497 .Immersion heater details
498 ..With thermostatic control means
499 ..Buoyant in liquid
500 ..With plural heating elements
501 ..With particular mounting means
502 ..Having positive temperature coefficient
503 ..Particular sheath or jacket composition

CLASS 400 TYPEWRITING MACHINES

1 INCLUDING JUSTIFICATION OR QUADDING OF PRINT-LINE
2 .Including quadding of print-line
3 .By programmed-control-system
4 ..On auxiliary-record-program (e.g , tape, card, etc.)
5 ...Magnetic record
6 ...With error-correcting storage register
7 ...Including artificial or end-of line hyphen
8 .By using "no-print" device
9 .By interword or intercharacter spacing
10 ..Variable carriage-feed mechanism
11 ..Carriage slidable relative to its carriage-rack
12 ..By interword spacing only
13 ...Including plural space-bars for different spacings
14 .By typing line on stretchable medium
15 .Including justification indicator
16 FOR TYPING OR FORMING CONTINUOUS OR DISCONTINUOUS LINE (E.G., BY "LINER")
17 .Including programmed-control-system
18 .By scriber (e.g., pen, pencil, etc.) or with scriber guide
19 ..For writing in script
20 ..Rotatable disc scriber
21 .Responsive to carriage movement
22 .Underscoring concurrently with character imprinting
23 FOR TYPING ON FLAT RECORD-MEDIUM OR AGAINST FLAT PLATEN
24 .For typing on a book
25 ..Including a type-head (e.g., cylinder, disc, etc.)
26 ..Against cylindrical backing
27 ..Including adjustment of typewriter relative to book (e.g., to compensate for book thickness)
28 ..Including adjustment of book support relative to typewriter (e.g., for top or bottom of book, etc.)
29 .For typing on flat blueprint or drawing (e.g., "platenless" typewriter)
30 .For typing on carton or package
31 .By multidirectional movement of typewriter structure (e.g., "Elliot-Fisher" structure)
32 .Bottom-strike typewriter including type-bar action or bar platen or anvil platen
33 .Top-strike typewriter including pivoted type-bar
34 .Including carriage-return mechanism
35 .Including case-shift by shifting platen
36 .Including ribbon-feed mechanism
37 .For typing on manifold set (e.g., with type-die, etc.)
38 ..Including feeding of wide carbon paper transverse to feed of record-medium
39 ..Including spool for roll of carbon paper
40 ..Including clamp or guide for carbon paper
41 ..Including adjustment of platen perpendicular to its surface
42 ..Including aligning and feeding manifold set
43 .Including feed of tally strip
44 .Including line-spacing mechanism
45 ..Platen shifted for line-spacing
46 ..Including adjustment of line-space distance or increment
47 ..Including disengagement of line-spacing mechanism
48 .Work support (e.g, sheet or card holddown or guide, sheet-size platen, etc.)
49 .Collating-table attachment
50 INCLUDING DELAY MEANS FOR PREVENTING MALFUNCTION IN POWERED TYPEWRITER
51 .Delay of sequential character rate in programmed-control typewriter
52 .Delay by storage of next character to be imprinted
53 INCLUDING ADJUSTMENT MEANS TO COMPENSATE FOR WEAR
54 SAFETY SWITCH OR CONDITION-RESPONSIVE-CUTOFF SWITCH FOR ELECTRICALLY POWERED TYPEWRITER
55 INCLUDING ADJUSTMENT FOR OPTIMUM PRINTING PLANE
56 .Responsive to thickness of record-medium
57 .In accordance with the number of sheets of record-medium
58 .By adjustment of platen relative to carriage
59 .By adjustment of carriage (e.g, carriage-guide rollers)
60 ..Via adjustment of case-shift linkage
61 INCLUDING CONTROL OF FORMAT AND SELECTION OF TYPE-FACE BY PROGRAMMED-CONTROL-SYSTEM (E.G., INPUT TYPEWRITER)
62 .Including means for responding to input program or incoming signals and providing output program or signals representing typing operations, (e.g, output typewriter)
63 .Including editing or revision system
64 .Including right-hand margin control system
65 .Including typing of graphical representations
66 .Including baseplate attachment with electromagnets for input or output operations
67 .Separate interrelated programs
68 ..Including message writing (e.g, address program, form-letter program, etc.)
69 .Type-face selection via magnetic program tape
70 INCLUDING SELECTION OF TYPE-FACE BY PROGRAMMED-CONTROL-SYSTEM OR BY REMOTE CONTROL
71 .Plural typewriters coupled for simultaneous operation (e.g., "master-slave" relationship)
72 .Including character-selection latches (e.g., for type-face selection)
73 .Including particular reader structure and operation
74 .Including error detection
75 .Including type-bar selection using mechanical program
76 INCLUDING CONTROL OF FORMAT BY PROGRAMMED-CONTROL-SYSTEM
77 TYPEWRITER CONTROLS OTHER INFORMATION RECORDER
78 .Typewriter controls apparatus used for accounting function
79 ..And a tape-punch or card-punch apparatus
80 .Typewriter (e.g, output typewriter) controls tape-punch or card-punch apparatus
81 ..And imprints the character represented by the punched code on the tape or card

82 INCLUDING PLURAL, INDEPENDENTLY SUPPORTED KEY-BOARDS, PLATENS, OR TYPE-SET-ASSEMBLAGES
83 DISPLAYING TYPEWRITER-FORMED REPRESENTATION OF PRINT-LINE
84 .By projecting typed image on screen
85 ..Including transparent or transluscent record-medium
86 OPERATING BY SOUND
87 FOR OPERATION BY HANDICAPPED USER
88 POCKET TYPEWRITER
89 KEY REASSIGNMENT
90 .Electrically powered
91 STENOGRAPHIC TYPEWRITER
92 .Using common-letter type-face
93 ..Including plural type-faces mounted on carrier and movable for selection of type-face
94 .Electrically powered
95 LOGOTYPE TYPEWRITER (E.G., WORD TYPING)
96 .Including date-stamp type-face
97 .Including signature type-face
98 .Actuation of single key types plural characters
99 ..Characters typed simultaneously
100 PLURAL-KEY-ACTUATED TYPEWRITER (E.G., PERMUTATIVE KEY-BOARD)
101 .Having type-faces disposed on pivotable type-bars
102 .Having type-faces disposed on rotatable type-head
103 CODE-PRINTING TYPEWRITER (E.G., FOR PRINTING A PATTERN OR MARK)
104 .For typing and encoding
105 ..Including magnetic encoding
106 .Including coded ink (e.g., phosphorescent or color-coded ink, etc.)
107 .For coding by conductive mark
108 .For marking laundry
109 FOREIGN LANGUAGE TYPEWRITER
110 .Including Oriental lanugage
111 .Including Semitic language
112 ANNULAR TYPEWRITER (E.G., FOR TYPING AROUND CIRCUMFERENCE OF PLATEN)
113 .Including vertically disposed platen
114 .Platen axis horizontal and extending front-to-rear
115 .Powered Actuated
116 MUSIC-ROLL OR MUSICAL-NOTATION TYPEWRITER
117 .Musical-notation typewriter
118 TYPING BY OTHER THAN TYPE-FACE OR TYPE-DIE
119 .Electrographic or elelctromagnetic typing
120 .Thermal or hot-stamp typing (e.g, via gold ribbon)
121 .Character formed by plural-type components (e.g., "matrix" printer)
122 ..Multiple-point embossed character for blind "reader" (e.g., "Braille" character)
123 ..With means for exposing last-typed character
124 ..Wire-end components (e.g., dot-printer)
125 ..Line components
125.1 ...Character formed by parallel print bars
126 .Character formed by ink jet
127 TYPING TO PRODUCE EMBOSSED CHARACTER
128 .Character embossed or typed on nonplanar article (e.g., golf ball, toothbrush, etc.)
129 .By type-die mounted on carrier movable for selection of character
130 ..Including programmed-control-system
131 ..Electrically powered
132 ..Type-die reciprocable on carrier
133 ..On endless-band carrier
134 ..On rotatable carrier
134.1 ...Actuated by key-board control
134.2 ....Including type-die movable relative to carrier
134.3 .....With magazine for supply of record-medium plates
134.4 ...On manually held embosser
134.5 ....Including web supply of record-medium
134.6 ...Including web supply of record-medium
135 TYPING TO PRODUCE PIERCED CHARACTER
136 .Cutout character for stencil
137 .Check-protection character
138 ..By type-die mounted on carrier movable for selection of character
138.1 ...Electrically powered
138.2 ...On rotatable carrier (e.g., for scarifying elements, etc.)
138.3 ....Actuated by key-board control
138.4 ....Including plural-character type-die
138.5 .....And rotating contact with platen
138.6 ....For type-die including piercing or cutting elements
139 INCLUDING TYPE-SET-ASSEMBLAGE MOUNTED ON CARRIER AND RELATIVELY MOVABLE FOR SELECTION AND FOR IMPACT OF TYPE-FACE
140 .Including type-faces movable relative to type-face-carrier
141 ..Slidable type-faces mounted on reciprocable carrier
141.1 ...On rotatable or oscillatable carrier reciprocable along its axis
142 ..Slidable type-faces on rotatable carrier
143 ..Rotatable type-face carrier including type-faces on pivotable arms
144 ..Type-face-carrier including type-faces on flexible arms
144.1 ...Rotatable or oscillatable carrier
144.2 ....Carrier having coplanar flexible arms (e.g., "daisy" wheel, etc.)
144.3 .....Continuously rotated carrier
144.4 .....Manually rotated carrier
145 ..Type-faces on deformable type-face-carrier
145.1 ...Rotatable carrier
145.2 ....Cylindrical carrier
146 .Including endless-band carrier for type-faces
147 .Type-faces arranged in rectilinear row and selected by reciprocable movement
148 ..On rotatable carrier having plural rectilinear rows
149 .Plural type-heads mounted for selective individual type-head-imprinting movement
150 ..Type-heads arranged for selective individual imprinting movement away from coaxial rest position
151 ..Turret carrier for type-heads
151.1 ...Axis of turret carrier parallel to platen axis
152 .Type drum having multiple type-set-assemblages
153 .Imprint by movement of record-medium against type-face
154 ..By hammer impacting record-medium against type-face on type-head (e.g., type shuttle, etc.)
154.1 ...Including selection of type-face
154.2 ....Via pully and cord arrangement (e.g., summing displacements)
154.3 ....By shortest peripheral path

INCLUDING TYPE-SET-ASSEMBLAGE MOUNTED ON CARRIER AND RELATIVELY MOVABLE FOR SELECTION AND FOR IMPACT OF TYPE-FACE
.Imprint by movement of record-medium against type-face
..By hammer impacting record-medium against type-face on type-head (e.g., type shuttle, etc.)
...Including selection of type-face
154.4 ....Via coded disc in electric or magnetic circuit (e.g, photoelectric)
154.5 ....Via stepping motor responsive to selection
155 ....Via electrical or electromagnetic means
155.1 .....Including plural-function actuation by electromagnet(s)
156 ....Via helical arrangement of projections
156.1 ....Via mechanically permutated bar(s), disc(s) or plate(s)
156.2 ....Via planetary gear arrangement
156.3 .....Including latch means
157 ...Including type-faces arranged along helical path(s)
157.1 ...Including particular structure of hammer(s)
157.2 ....Electromagnetically actuated
157.3 ....For variable impression (e.g., impact control)
157.4 ....Hammer(s) mounted on endless belt or in helical array
158 ..Including platen for moving record-medium against type-face and mechanism for feeding record-medium
158.1 ...Including moving and feeding by platen
159 ..Including platen for moving record-medium against type-face and mechanism for inking type-face
160 .Imprint by pivoting of type-head-carrier and type-head against record-medium
161 ..Type-head-carrier movable on movable carriage
161.1 ...Including selection of type-face (e.g., on "golf ball" type-head)
161.2 ....Via gear train
161.3 .....Gears mounted on type-head and type-head-carrier
161.4 .....Including gear (e.g., rack) reciprocated by transmission mechanism
161.5 ....Via multiple cam surfaces
162 ..Type-head movable for selection of type-face
162.1 ...Via pulley and cord arrangement
162.2 ...Via shortest peripheral path
162.3 ...Via coded disc in electric or magnetic circuit (e.g., photoelectric)
163 ...Via stepping motor responsive to selection
163.1 ...Via electrical or electromagnetic means
163.2 ....Including electromagnetically actuated type-head movement toward record-medium
163.3 ....Including plural-function actuation by electromagnet(s)
164 ...Via helical arrangement of projections
164.1 ...Via pneumatic actuation
164.2 ...Via setting elements actuating selector-command member(s)
164.3 ...Control arm connectd to selection gear and movable to engage key-lever-actuated abutment
164.4 ...Via stop pins actuatable by key-board
164.5 ...Toothed member connected to selection gear and slidable by key-lever movement
164.6 ...Selection gear rotated by key-lever movement
165 ...Simultaneous rotation and translation of type-head by manually powered actuation (e.g., helical shift)
165.1 ...Via manually powered actuation other than by key-board (e.g, stylus selection)
165.2 ....Includinng type-head movable to print-point by actuator common to all type-faces
165.3 .....Selection by rotatable dial
166 ..Including impact control
167 ..Including rebound control
168 ..Articulated-support joint
169 ..Detenting to fix type-head for imprinting
170 ..Including movable printing anvil within type-head
171 .Plural type-set-assemblages selectively movable from a storage station to a printing station
172 .Type-faces mounted on type chips and removable from storage for printing
173 .With means for exposing last-typed character
174 .Type-head per se
175 ..Detachable from carrier (e.g., interchangeable)
176 HAVING FLUID-PRESSURE POWER DRIVE
177 .Including pneumatic decoder for perforated tape
178 .For producing typewriter-control tape (e.g., perforated tape, etc.)
179 .For type-face selection or choice
180 ..Including key-board driven by external pneumatic source
181 ..By pneumatic actuation of type-face or type-bar
182 .For movement of carriage or platen
183 ..Including line-spacing
184 HAVING TYPEWRITER-CONTROLLED RECIPROCABLE ELECTROMAGNETIC DRIVE FOR PLURAL FUNCTIONS IN SAME TYPEWRITER
185 HAVING POWER-DRIVEN OPERATOR FOR PLURAL FUNCTIONS
186 .Via continuously rotated power roll selectively connected to operate
187 .Usable selectively (e.g., for powered or manual operation, alternative usable functions, etc.)
188 FOR TYPING ON REVERSE SURFACE OF RECORD-MEDIUM
189 .By simultaneous use of both surfaces of same ribbon
190 .By use of "carbon paper"
191 INCLUDING INTERPOSED INKING DEVICE (E.G., RIBBON) FOR RECORD-MEDIUM
192 .Moved by continuously rotating power drive intermittently applied
193 .Inking device handheld during typing
194 .Endless ribbon or cartridge therefor
195 ..Mobius strip
196 ..Including storage (e.g., in cartridge, etc.) of ribbon
196.1 ...Having ribbon stored in pleated form
197 .Renovation of used ribbon
198 ..With ink heater (e.g., for melting solid ink)
199 ..By discrete auxiliary band movable with ribbon

	INCLUDING INTERPOSED INKING DEVICE (E.G., RIBBON) FOR RECORD-MEDIUM
	.Renovation of used ribbon
200	..Selectively actuatable re-inker
201	..Of multicolor ribbon
202	..Renovator attachable to typewriter for replenishing ribbon ink
202.1	...Attached to ribbon spool
202.2	...And includes refillable chamber (e.g., reservoir) for liquid ink
202.3	....And conveyor of discrete drops of ink
202.4	....And re-inking roller
203	.Ribbon disposed within platen
204	.For typing plural copies simultaneously with ribbon(s) (e.g., duplicate typing)
205	..Including holder for short length of ribbon
205.1	...Holder movable to inoperative position on typewriter
206	..Using plural ribbons (e.g., additional ribbon(s)
206.1	...Including "carbon paper" ribbon
206.2	...And ribbon holder movable to inoperative position on typewriter
206.3	...On plural coaxial spools
206.4	...On single spool
207	.Package for ribbon facilitating mounting of ribbon on typewriter (e.g., ribbon cartridge)
208	..Package attached to typewriter
208.1	...And includes separable assemblage of spools
209	.For bottom-strike typewriter
210	.For boldface typing
211	.Including mechanism for shifting ribbon laterally at print-point
212	..Via electrically powered actuator
213	..For impact of successive type-faces on one field of ribbon in path not parallel to longitudinal extent of ribbon (e.g., "zigzag", oblique, etc.)
213.1	...Via ribbon vibrator
214	..Plural ribbons shiftable laterally (e.g., by duplicate vibrators)
215	..By ribbon vibrator
215.1	...Including vibrator shiftable during use of nonfeed character key (e.g., for typing accent mark, etc.)
215.2	...With retardation of vibrator return after type-face impact (e.g., with dashpot)
215.3	...With elevation and holding of vibrator above print-point (e.g., to facilitate ribbon insertion)
215.4	...With inactivation of vibrator (e.g., for cutting a stencil)
216	...Including variable throw of vibrator
216.1	....For diverse-field (e.g., plural-color) ribbon
216.2	.....With typewriter-controlled change of field
216.3	.....By movement parallel to print-line
216.4	.....Vibrator throw controlled via alternate pins selectively inserted in slots
216.5	.....Field selection by selectively positioned stop faces to limit vibrator movement
216.6	.....To compensate for case-shift
217	..To shift impact path (e.g., during ribbon reversal)
217.1	...By adjustable ribbon guide spaced from supply spool
218	.Ribbon-reversing mechanism
219	..Including means responsive to depletion of ribbon supply
219.1	...Including an electric switch
219.2	...Including lever retained in spool by wound ribbon
219.3	...Including senser for diameter of wound ribbon
219.4	....Senser received in depression in core of spool
219.5	...Including projection from ribbon
220	..Alternative pawl-and-ratchet drive including ratchet directly connected to spool or spindle
220.1	...Including a common pawl member (e.g., double-toothed pawl)
220.2	...Including member interposed in pawl drive path
221	..Alternative gear drive including gear directly connected to spool or spindle
221.1	...And gears mounted on ends of axially shiftable common shaft
221.2	...And gears mounted on ends of pivoted common shaft
222	..Alternative clutch drive including clutch member directly connected to spool or spindle
223	.Ribbon-feeding mechanism
224	..For feeding ribbon angularly to print-line at print-point
224.1	...Ribbon fed perpendicular to print-line at print-point
224.2	....Ribbon is full-page wide
225	..Including electrically powered drive means (e.g., solenoid, stepping motor, etc.)
226	..For feeding ribbon partial character-space before impact and partial character-space after impact
227	..For narrow carbon ribbon (e.g., carbon ink, "single use", etc.)
227.1	...Ribbon destroyed after use
227.2	...Or for alternatively used fabric ribbon
228	..Including pin-feed-engaging ribbon
229	..Mounted with movable type-face-carrier or type-head-carrier
230	..With fast rewind of ribbon
231	..With prevention of ribbon feed (e.g., for nontype operation, etc.)
232	..Including feed at particular feed rate (e.g., "creep" feed)
233	..Ribbon feed from supply only during carriage return
234	..Including ribbon tensioner
235	..Drive applied by means directly engaging ribbon in advance of takeup
235.1	...Drive applied by pinch-roller couple
236	..Drive applied directly to spool or spool spindle
236.1	...By a pawl driving a ratchet on the spool or spindle
236.2	...By a gear driving a gear on the spool or spindle
237	.Ribbon per se
238	..Having leader portion (e.g., for threading, etc.)
239	..With ribbon-reversing indicator or device on ribbon
240	..Including differently pigmented fields
240.1	...Including correction-material field
240.2	...With prevention of bleeding between adjacent fields
240.3	...Including fields arranged transversely to elongated dimension of ribbon
240.4	...Including more than two fields
241	..Particular ribbon material

INCLUDING INTERPOSED INKING DEVICE (E.G., RIBBON) FOR RECORD-MEDIUM
.Ribbon per se
..Particular ribbon material
241.1 ...Synthetic material
241.2 ....Wherein ink is entrapped in ribbon material (e.g., microcapsules, micropores, etc.)
241.3 ...Particular weave pattern
241.4 ...Including ink-impervious backing for ribbon
242 .Ribbon spool or mount therefor
243 ..Universally adaptable
244 ..Including ribbon-reversing indicator or device on spool or mount
245 ..Including magnetic retainer
246 ..Spool for full-page-wide ribbon
247 .Means auxiliary to ribbon mechanism (e.g., shield, guide, etc.)
248 ..Including guide for ribbon
248.1 ...Ribbon guide opening expandable to facilitate ribbon insertion
248.2 ....And typewriter-actuated closing of guide
248.3 ...Including electrical, magnetic, or pneumatic guide means
249 ..Including indicator for depletion of ribbon (e.g., bell, sign, etc.)
250 ..Including tool for inserting ribbon
251 CASE-SHIFT MECHANISM
252 .Including programmed-control system
253 .Including electronic control or code-bar control
254 .Controlled by typewriter-actuated mechanism
255 .Including plural case-shift mechanisms (e.g., for simultaneous or selective use)
256 .Actuated by toggle-linkage
257 .For case-shift by type-head (e.g., spherical type-head) movement
258 .Power-operated mechanism (e.g., for locking shift key)
259 ..For shifting platen
260 ..For shifting type-bar-segment
261 .Multiple-shift mechanism (i.e., for type-bar having three or more type-faces thereon)
262 ..For shifting type-bar-segment
263 ..For shifting type-bar or type-face on type-bar
263.1 ...By pivoting type-face relative to type-bar
263.2 ...By rotating type-face relative to type-bar
264 .For shifting platen
265 ..Fore-and-aft (e.g., for top-strike or bottom-strike typewriter)
266 ..Mounted on pivotally movable platen carrier
266.1 ...With movement of platen out of typing position
266.2 ...Including adjustable counterbalance spring
266.3 ...Including a yieldable link (e.g., spring, etc.)
267 ..By depression of space-bar
268 .For shifting type-face or type-bar
269 ..By shifting type-bar or type-face on type-bar
269.1 ...By pivoting type-face relative to type-bar
270 ..Mounted on type-bar support (e.g., guide pin, type-bar-segment, etc.)
270.1 ...Ring hanger support
270.2 ...Including ball-bearing support
270.3 ...Including pivoted-lever support (e.g., cantilever spring, etc.)
271 .By choosing from one of a plurality of type-bars operated by a single key
272 .Including key attachment for case-shift
273 ..Operated by user's leg, (e.g., foot, knee, etc.)
274 .For locking case-shift mechanism in position (e.g., rebound lock, cam, etc.)
275 ..For locking platen in fore-and-aft position (e.g., by overcenter spring, etc.)
276 ..For locking shift-key lever in depressed position
276.1 ...By toggle-linkage
276.2 ...By means pivoted on shift-key lever
277 .Including limit stop (e.g., block, chain, etc.)
278 ..Including limit screw
279 CONTROL OF PRINT POSITION ALONG PRINT-LINE BY SIGNAL GENERATED BY PROGRAMMED-CONTROL-SYSTEM
280 .Program is indicia on auxiliary member
281 ..Member is punched tape or card
282 .Program is indicia on record-medium
283 CARRIAGE OR CARRIAGE-MOVING OR MOVEMENT-REGULATING MECHANISM
284 .For stopping carriage in tabular position (e.g., column-set positions)
285 ..In denominational positions
285.1 ...And column-set positions
285.2 ....Tab-rack stop intercepted by denominational-stop
285.3 .....Tab stops grouped in stepped fashion
285.4 ...With control of zero or space for decimal point
285.5 ...With reverse-direction movement of carriage
285.6 ...Helically mounted denominational-stop(s)
286 ...Shiftable denominational-stop(s)
286.1 ....Step-shaped denominational- or tab-stop(s)
286.2 ....Engaging movable tab-rack means
286.3 ...With latch or lock means
287 ..Column set by control of mutilated carriage-rack
288 ..Column set by control of tab-rack
289 ..Column set by control of tab stops or column stops or counter stops
289.1 ...Tab-stops grouped in stepped fashion
290 ..Forward or reverse tabulation
291 ..With impact cushion or rebound check
292 ..With control of carriage velocity
293 ..By multiple-pitch tab-racks or mutilated gear
294 ..Stop-setting or stop-clearing mechanism
294.1 ...With stop magazine (i.e., for suppl1y of stops)
294.2 ...With key-locking mechanism
294.3 ...Drum-mounted tab stops
295 ...Stop setting by linear shift of tab stop or counter stop
295.1 ....Stop shifts horizontally from tab-rack
295.2 ....Stop shifts laterlly along tab-rack
296 ...Stop setting by movement of tab-rack
296.1 ....Tab-rack rotates about its axis
296.2 ....Plural tab-racks
297 ...Stop setting by partial rotation of tab stop relative to tab-rack
297.1 ...Stop setting by pivoting pawlike stop
298 ..Tab-stop or tab-rack structure per se
299 .With rotatable type wheel for repeat printing in response to carriage movement

CARRIAGE OR CARRIAGE-MOVING OR MOVEMENT-REGULATING MECHANISM

300	.Key-actuated mechanism for nonfeed of carriage (e.g., "silent" key, locking carriage, etc.)
301	..By disabling carriage-escapement mechanism
302	..By key actuated independently of carriage feed
303	.For varying carriage feed
304	..For kerning or overlap imprinting
305	..By force-feed or screw-feed mechanism
306	..Proportional to variable widths of imprinted characters
306.1	...By settable elements (e.g., pins, bars, slides)
306.2	...By ratchet-wheel and controlled pawl
306.3	....Including multiple pawls
306.4	.....And multiple wheels
307	...By ratchet rack and controlled pawl
307.1	....Including multiple pawls
307.2	...By cooperating toothed members (e.g., gear, segment, rack, etc.)
308	.Carriage backspace mechanism
309	..Backspace proportional to variable width of imprinted characters
310	..Including powered drive means
311	..Including pawl and escapement wheel
312	..Including pawl and escapement rack
313	.Carriage-return mechanism
314	..With concurrent line-spacing
314.1	...Using electromagnetic drive
314.2	...For selected number of line-spaces
314.3	...With disconnection of return by margin-stop
314.4	...Initiated by user's leg or foot
314.5	...Initiated by actuator adjacent key-board
314.6	...By return-clutch means
315	..Responsive to carriage position
316	..Partial return (e.g., for start of paragraph, etc.)
317	..Including power drive (e.g., electric, spring, etc.)
317.1	...For bidirectional drive
317.2	...By spring-driven motor
317.3	...Powered via engagement of a clutch
318	..Initiated by actuator adjacent key-board
319	.Carriage-feed mechanism (e.g., escapement, etc.)
320	..For carriage on which a type-head-carrier is mounted
320.1	...With concurrent movement of carriage for record-medium and carriage for type-head-carrier
321	..With repeat spacing
322	..By electric or magnetic power
323	..Carriage-feed in two directions (e.g., continuous typing in two directions)
323.1	...In selected direction (e.g., for Semitic language, etc.)
324	..Word-space concurrent with typing of last character of word
325	..By space-bar mechanism (e.g., separate connection to escapement) or paragraph-indentation key
326	..With compensator for tilt of typewriter
327	..For diagonal print-line
328	..By force-feed or screw mechanism (e.g., direct drive, screw-biasing carriage, etc.)
328.1	...Including pawl and toothed rack
329	..Carriage escapement controlled by pawl
329.1	...Means to ensure engagement of pawl at start of print-line (i.e., overbanking control)
329.2	...Carriage-feed initiated and completed during depression of character key (e.g., "speed" or "reverse" escapement)
329.3	...Pawl rocker spring regulating device
330	...Via ratchet wheel connected to pinion and carriage-rack
330.1	....And plural pawls
330.2	.....For half-drop escapement
330.3	.....Mounted on pivotable pawl carrier or rocker
330.4	......Including pawl(s) fixed to rocker
330.5	.......And slidable pawl
330.6	.......Including pawl pivoted about axis parallel to rocker axis
330.7	.....Mounted on movable (e.g., rotatable, slidable) pawl carrier
330.8	.....Including particular structure of pawl (e.g., pivoted, unitary, with roller, etc.)
331	....Including plural ratchet wheels
331.1	....Including particular structure of ratchet wheel
331.2	....Including cushioned escapement support (e.g., rocker, pawl buffer, etc.)
331.3	....Including particular structure of mount for ratchet wheel (e.g., bearing, clutch, etc.)
332	...Via toothed rack
332.1	....And plural pawls
332.2	.....Mounted on pivtable pawl carrier or rocker
332.3	.....Mounted on movable (e.g., rotatable, slidable) pawl-carrier
332.4	.....Including particular structure of pawl (e.g., slidable, pivoted, unitary, etc.)
332.5	....Including plural toothed racks (e.g., pivoted, etc.)
332.6	....Including particular structure of rack (e.g., toothed, slidable, etc.)
333	..Universal-bar or actuator therefor
333.1	...Connected to actuator for another function
333.2	...Adjustable
333.3	...Actuated by type-bar or type-bar action
334	..Carriage-feed-release mechanism
334.1	...By disengagement of clutch between ratchet wheel and pinion
334.2	...By disengagement of escapement pawl(s)
334.3	....From carriage-rack
335	..With particular connection to carriage (e.g., gear train, pulley and strap, etc.)
336	..Spring-biasing carriage for feed
336.1	...Torsion spring in rotatable barrel
337	.Carriage-retarder mechanism
338	..Including governor responsive to speed or momentum
338.1	...Using centrifugal force
338.2	...Using inertial force retarder (e.g., flywheel, weight, etc.)
339	..Using fluid or fluent-material retarder
340	..Using frictional retarder (e.g., strap, disc, drum, etc.)
341	..Carriage-buffer stop or rebound control
342	.Margin-regulator (e.g., adjustable margin-stop) mechanism
343	..With intermediate margin-stop
344	..With other typewriter function controlled by margin-stop (e.g., signal, line-space)

	CARRIAGE OR CARRIAGE-MOVING OR MOVEMENT-REGULATING MECHANISM
	.Margin-regulator (e.g., adjustable margin-stop) mechanism
	..With other typewriter function controlled by margin-stop (e.g., signal, line-space)
345	...Carriage-arrest function (e.g., "overbank")
346	...Print-line locking function
347	..With multiple-pitch selector
348	..With release of margin-stop
349	..Conjointly set or centrally spring biased
350	..On record-medium table or paper-finger
351	..Margin-stop structure per se
352	.Carriage per se or guideway therefor
353	..Including auxiliary carriage
354	..Guideway or bearings for carriage
354.1	...Guideway cooperating with ball bearings or roller bearings
354.2	....Including bearing holder geared to carriage
354.3	....Including respositionable guideway
355	.Means for repositioning carriage or platen thereon
356	..To nonprint position
357	..To detach carriage
358	..To detach platen
359	HAVING TYPEWRITER-CONTROLLED RECIPROCABLE ELECTROMAGNETIC DRIVE FOR TYPE-BAR ACTUATION IN SAME TYPEWRITER
360	.Including electromagnetic return of universal actuator
361	.Including actuator to complete depression of selected key or key lever
362	.Including universal actuator to actuate selected type-bar action
363	..And individual solenoids to connect the type-bar action to be actuated
364	.Including individual solenoids to actuate the selected type-bar action
365	HAVING ROTATED POWER DRIVE INTERMITTENTLY APPLIED FOR TYPE-BAR ACTUATION
366	.Including jam-release means
367	.Interposed components driven by filter shaft
368	.For repeat-type action
369	..With prevention of repeat typing
370	.Via continously rotated power roll
371	..And oscillatable cam
372	..And rotatable cam (e.g., single-lobe cam)
373	...Including double-lobe cam
374	..And friction leg (e.g., other than by cam)
375	..Snatch roll
375.1	...Including plural coaxial snatch disc
375.2	...With control of impact force
375.3	...With electromagnetic control of pawl
375.4	...And star wheel
376	..With control of impact force
377	.Via limited-rotation clutch
378	..Plural cams clutched to drive shaft
379	.Via spring drive (e.g., spring-driven snatch roll)
380	..Including individual spring for each type-bar action
381	..Including reciprocable common actuator
382	.Via reciprocating common actuator
383	TYPE-BAR-ACTION MECHANISM OR TYPE-FACE ON TYPE-BAR OR TYPE-FACE INKER
384	.Spring drive for type-bar action
385	.With added-motion mechanism for type-bar near print-point
386	..Including toggle-linkage
387	..Including momentum accumulator
388	..Including hammer, roller, or presser mechanism
388.1	...Type-bar pivotable to vicinity of print-point
389	..With power assist for mechanism
390	.With end-thrust mechanism for type-bar
391	..Type-bar slidable on flat support
391.1	...Driven by gear means
391.2	...Driven by cam means
391.3	...Driven by toggle-linkage
391.4	...With power assist for mechanism
392	..Including momentum accumulator
393	..For top-strike or bottom-strike typewriter
394	.With type-bar pivot travelling during typing movement of type-bar
395	..Type-bar pivot on longitudinally movable carriage in top-strike typewriter
396	..With ink pad on type-bar rest
397	.With disconnection of type-bar action during movement thereof
398	.With accelerated (e.g., motion amplifying)type-bar action
399	..By rolling contact between links
399.1	...By key-lever rolling on fulcrum
400	..By cam-engaging link
401	..By breaking and straightening toggle-linkages
402	..By breaking toggle-linkage (e.g., to pull type-bar to print-point)
403	..By straightening toggle-linkage (e.g., to push type-bar to print-point)
404	..Including adjustment of toggle-linkage anchor position
405	..By type-bar connecting link
405.1	...Including gear connection
406	..By pin and slot connection
407	..Including type-bar starter means
408	.For bottom-strike typewriter
409	..Including simultaneous actuation of plural type-bars for simultaneous imprinting
410	..With pivotally mounted platen carrier (e.g., for access, etc.)
411	..Type-bar actuated by rack and gear
412	..Including type-bar mounting arrangement
413	..With type-face inker (e.g., ink-pad rest)
414	..Including key or key-lever arrangement
415	.For top-strike typewriter
416	..Including type-bars pivoted on both sides of, or above and across, platen axis
417	..With type-face inker (e.g., ink pad, roller, etc.)
418	..Type-bar pivoted by gear connection
419	..Type-member or type-bar pivoted and rotatable (e.g., for selection of type-face)
420	..Type-bar pivoted by push link
421	..Type-bar pivoted by cam
422	.Type-bar action
423	..Including selectively disengageable type-bar action to render action inoperable
424	..With type-face pivoted on type-bar for rolling contact with platen
425	..Including jam-release means
426	..Including type-bar return before release of key lever
427	..Including yieldable link in type-bar action
428	..Including means to limit type-bar movement

TYPE-BAR-ACTION MECHANISM OR TYPE-FACE ON TYPE-BAR OR TYPE-FACE INKER
.Type-bar action
429 ..Type-bar pushed or pulled by hooklike cam
430 ..Bar pulled to print-point
430.1 ...By cam means (e.g., slotted cam, helix, etc.)
430.2 ...By toggle-linkage
430.3 ...With movable type-bar-segment
431 ..Type-bar moved to print-point by gear drive
432 ..Type-bar moved to print-point by cam means
433 ..Type-bar moved to print-point by toggle-linkage
434 ..Including connecting link or joint
434.1 ...Adjustable (e.g., in length, etc.)
434.2 ...Flexible (e.g., spring, strap, etc.)
434.3 ...Including connecting element (e.g., joint, etc.)
435 .Type-bar rebound preventer (e.g., via latch, brake, linkage, etc.)
436 .Type-bar return spring connectd to type-bar-action linkage
437 ..For impact control
438 ..With adjustment means (e.g., for "touch" control, ect.)
438.1 ...Including an indicator
439 ..Attached to type-bar or universal-bar
440 ..Attached to key lever (e.g., tension spring)
440.1 ...Compression spring
440.2 ...Cantilever spring (e.g., torsion, hairpin, etc.)
441 .Type-bar pivot support
442 ..For plural groups of type-bars
442.1 ...Having type-bars disposed on plural ring supports
442.2 ...Including type-bars pivoted on vertical pivot(s) (e.g., moved in horizontal plane)
443 ..Ring support
444 ..Type-basket laterally movable relative to platen and key-board
445 ..Type-bar-segment (e.g., wire journal)
445.1 ...With guide for movement of segment
445.2 ...Including hanger for individual type-bar
445.3 ....And bearing for type-bar
445.4 ...Interchangeable (i.e., easily removable) segment
445.5 ...With type-bar anvil
446 ..Interconnected (e.g., nested) support bearings
447 ..Ball-and-socket bearing for type-bar (e.g., universal joint)
448 ..Roller bearing or ball bearing for type-bar
448.1 ...Including plural bearings for each type-bar
449 ..Adjustable bearing for type-bar
450 ..Pin support for type-bar
451 ..Wire support for type-bars
452 .Type-bar structure
453 ..With type-face movable in plane of type-bar movement
454 .Type-bar rest or rest support
455 ..Including metallic material
456 .Type-bar or type-member guide structure
457 ..Including resilient means for energy absorption or kickback
458 ..Mounted on platen-carriage
459 ..For thrusted type-bar
460 ..Guide adjacent print-point
460.1 ...Including rollers or balls
460.2 ...Including pin or collar
461 ..Adjustable guide
462 .Type-member structure
463 ..Removable type-member
464 ..Rotatable on type-bar
465 ..Pivotable on type-bar
466 ..Type-face or type-die configuration (e.g.,reverse image, boldface, piercing, etc.)
467 .Dust guard for type-bar action mechanism
468 ..For type-bar bearing (e.g., shield on type-bar-segment)
469 .Attachment to type-bar for imprinting extra character
470 .Ink-impregnated type-face or inker for type-face
471 ..Including stationary ink pad for inking type-face directly
471.1 ...And a wick for feeding pad from reservoir
472 KEY-BOARD OR KEY LEVER-ACTUATING MECHANISM
473 .Including mechanism (e.g., auxiliary key-board) for activating keys
474 ..Electromagnetic key-board-drive mechanism
475 ..Operated by user's leg (e.g., foot, knee, etc.)
476 ..For actuating function key only
477 .Including means generating a signal for type selecting or other typing function
478 ..Via slidable code bars
479 ..Via electrical component (e.g., switch, stylus, etc.) in or with key-board
479.1 ...Capacitance-responsive switch
479.2 ...Electromagnetic-responsive switch
480 .Including control of key action (e.g., buffer, etc.)
481 ..By regulating key force or movement (e.g., key dip or stroke)
482 .For stenographic typewriter
483 .For Braille typewriter
484 .For foreign-language typewriter
485 .Key-board having multiple-character, multiple-movement keys
486 .Key-board arranged according to character location
487 ..Color-coded key-board
488 .Key-board including row of keys having different heights
489 .Key-board including keys grouped to facilitate positioning of typist's fingers
490 .Key-Cap or key-stem structure
491 ..Including cushioning means (e.g., yieldable surface)
491.1 ...Including underlying air cushion
491.2 ...Including spring supporting key cap or key stem
491.3 ....With sensory indicator (e.g., sound, tactile response, etc.)
492 ..Adjustable in plane of key(s) (e.g., to facilitate reach, rotatable, etc.)
493 ..Including character-bearing disc on key cap
493.1 ...Secured by encircling ring member
493.2 ....With slot for exchanging disc
494 ..Having raised or recessed character
495 ..Including means for mounting key cap or key stem
495.1 ...By spring means
496 .Key lever or space-bar mounting structure (e.g., dust guard, buffer, pivot, etc.)

497 WITH CONTROL OF "CARBON PAPER" FOR TYPING PLURAL SIMULTANEOUS COPIES BY SINGLE IMPRESSION (E.G., ON "MANIFOLD SET")
498 .Including prevention of full imprint on "carbon copy" record-medium
499 .On record-medium wound around platen together with carbon paper
500 .With means for causing slack in web of manifold set
501 ..By arcuate movement of carbon paper carrier
502 ..By clamp on carbon paper carrier
503 .By use of other than rectangular sheet carbon paper (e.g., disc, etc.)
504 ..Endless-band carbon paper
505 .By multicolor carbon paper
506 .With means to prevent creep (e.g., relative movement) between record-media
507 .Including means for creep feed of carbon paper
508 .Including spool or support for roll of carbon paper
509 ..Including a flat roll or core therefor
510 ..And guide for changing feed direction
510.1 ...Spool support shiftable to and from platen
511 ..Feed mechanism for feed from roll of carbon paper
511.1 ...Responsive to return of carriage
511.2 ...With retraction of carbon paper for reuse thereof (e.g., by slidable carrier)
511.3 ....Carbon paper rewound for retraction
511.4 .....By driving carbon paper roll directly from platen (e.g., by endless band)
512 ..And support for roll of record-medium
513 .Including relative movement between carbon paper and record-medium
514 ..Including positioning of auxiliary record-medium
515 ..Including front insertion of carbon paper or record-medium
516 ..By simultaneously advancing record-medium and retracting carbon paper
517 ..By means to arrest advance of carbon paper
518 ..Carbon paper carrier(s) respositionable relative to platen
518.1 ...Plural carriers disposed side by side for selective use singly or simultaneously
518.2 ...Plural carries for serial retraction of plural carbon papers
518.3 ...With means to imprint selectively on one or more media (e.g., by holding selected media away from print-line)
518.4 ...Including retraction of carbon paper and record-medium and subsequent advance of record-medium
519 ...Carbon paper carrier movable rectilinearly
519.1 ....With means to hold record-medium against retraction
519.2 ....Including means to reduce binding of carbon paper during retraction
519.3 .....Including lifting of platen for retraction of carrier
519.4 .....With guard over settable parts (e.g., denominational jacks, etc.)
519.5 .....With relative movement betweem record media (e.g., for condensed-billing, etc.)
519.6 ....With support or guiding or positive-driving structure for carrier (e.g., table, adjustable stop, etc.)
519.7 ...Carbon paper carrier on endless member
520 .Carbon paper holder (e.g., loading board, etc.)
521 FOR TYPING ON CARD IN CARD HOLDER
522 .Flexible holder fed around platen with single card
523 .On card pierced or indented to aid holding
524 .Holder movable responsive to case-shift
525 .Card holder carrier by platen
526 ..And actuated in response to platen rotation
527 ..With platen surface modified for card
527.1 ...Including card gripper on platen
527.2 ...Including axially extending slot or hollow in platen
528 ..Holder attached via detachable arms at ends of platen
529 ..Holder attached via pins on holder or via adhesive attachment
530 ..Holder attached via element (e.g., band) gripping platen periphery
531 .Including line-spacing of holder or card
532 ..Variable line-spacing (e.g., platen creep)
533 ..In a curvilinear path
534 ..By pinion and rack
535 .Including support engaging bottom edge of card
536 .Card holder mounted on typewriter frame
537 ..Including means enabling movement of card relative to holder
538 ..Transparent card holder
539 ..Including finger movable away from holding position
540 ...Spring urged to holding position
541 .Including a feed-roller
542 .Card holder mounted on platen-carriage frame
543 .Including gripper or means urging card against platen
544 .Backing for stencil cutting (e.g, celluloid strip, etc.)
545 FOR LINE-SPACING BY INCREMENTAL ROTATION OF PLATEN
546 .To facilitate condensed billing (i.e., by determining a desired limit or amount of retrograde or advance platen movement)
547 ..Including stop structure (e.g, traveling stop, etc.)
547.1 ...For arresting platen at limit of both retrograde and advance movement
547.2 ....By stop travelling in a rectilinear path
547.3 ....By lever or push-rod drive for platen
547.4 .....Via gear drive
547.5 ......Including lever on axis transverse to platen axis
547.6 ......Including relatively adjustable coaxial gear segments
547.7 .....Via pawl and ratchet wheel drive
547.8 ......With spring motor
548 ..With graduated scale (e.g., on drum periphery)
549 .Actuated by key on key-board
550 .For multi-incremental rotation (e.g., "platen sweep")
551 .For line-spacing in forward or reverse direction
552 .With "floating" platen

FOR LINE-SPACING BY INCREMENTAL ROTATION OF PLATEN
553 .Via line-space / carriage-feed-release actuator
554 .For facilitating even wear of platen surface (e.g., by irregular increments, etc.)
555 .By irregular increments of platen rotation (e.g., for adjustment of platen relative to its actuator, etc.)
556 ..Including disconnecting ratchet wheel from platen (e.g., declutching ratchet, etc.)
556.1 ...Via relatively displaceable pin and slot members
556.2 ...Via toothed ring and locking member(s)
556.3 ....Including pivotable locking member(s)
556.4 ....Including radially displaceable locking member(s)
557 ...Via ball or roller clutching member(s)
558 ...Via binding jaws gripping annular flange between jaws
559 ...Via friction plate members engageable by axial displacement (e.g., pressure plate, etc.)
559.1 ....Friction members have cooperating conical surfaces
560 ...Via frictional engagement of periphery of cylindrical member
560.1 ....Friction member(s) acting on inner periphery of drum
560.2 .....Pivotable member(s)
561 .....Expandable band or split ring
562 ..Including settable stops
563 ..Including plural detents selectively engageable with ratchet wheel
564 ..Including a drive member engageable with line-space ratchet wheel
564.1 ...Via displaceable detent
565 ..Detent-release structure
566 ...With friction brake for platen
566.1 ...With simultaneous disengagement of drive pawl
567 ..Including gear (e.g., differential gear, etc.) structure
568 .By electric-power drive
569 .By gear train (e.g., including a clutch)
570 .By double-cam drive
571 .By friction drive (e.g., including regulation of increments)
572 .By pawl and ratchet wheel drive
573 ..Including rectilinearly movable pawl
573.1 ...And resilient drive
574 ..Including pawl carrier coaxial with ratchet wheel
574.1 ...And means to regulate pawl engagement or drive
575 ..Including means to regulate pawl engagement or drive
575.1 ...By movable ratchet-wheel shield
575.2 ...By stop adjustable to limit movement of actuator
576 .Via foldable line-space actuator
577 .With means to prevent reverse rotation or ensure full increment (e.g., for "backlash" prevention)
578 SHEET OR WEB (E.G., RECORD-MEDIUM FEEDING MECHANISM
579 .Including skew correction responsive to position of sheet or web
580 .Including forming indicia on record-medium during typing to find next line to be typed
581 ..To find last-produced slit or hole or notch in sheet
582 .Including programmed-control-system for record-medium feed (e.g., on auxiliary record)
583 ..For web record-medium
583.1 ...Program on auxiliary-record tape
583.2 ...Program is indicia on rotatable disc or drum
583.3 ...Program is indicia on record-medium
583.4 ...Including plural speed record-medium feed
584 .Including feed of plural record media arranged side by side (e.g., fed independently of platen)
585 ..By divided platen
585.1 ...With positive clutch for simultaneous rotation of platen sections
586 .Including feed of tally strip record-medium (e.g., plural tally strips)
587 ..And feed of endless transfer medium
588 ..On plural-platen (e.g., divided platen) typewriter
589 ..With locking or interlocking mechanism (e.g., line lock, etc.)
590 ..Including feed varied for amount of tally strip on spool
591 ..Including tally-strip feed transverse to feed of main record-medium
592 ..Including feed independent of platen
593 ..With cutting or spring tensioning of tally strip
594 ..Including structure or mounting or adjustment of tally-strip roll
594.1 ...And roll for transfer-medium
595 .Including insertion of sheet from front of platen (e.g., for "condensed-billing", via sheet guide, etc.)
596 ..Including feed responsive to presence of sheet
597 ..With subsequent line-spacing independent of platen
598 ..With digitally selected, typewriter-actuated feed to selected line to be typed (e.g., via "dialing" disc, etc.)
599 ..Insertion of sheet relative to other record-medium
599.1 ...With sheet-associating attachment (e.g., collating-table, etc.)
600 ..Via feed throat having gate (e.g., actuated by power, etc.)
600.1 ...With platen repositioned for sheet insertion
600.2 ...With feed-roller repositioned for sheet insertion
600.3 ....And sheet feed by additional feed-roller couple
600.4 ....Coincident to pivoting of sheet guide
601 ..With laterally movable sheet holder (e.g., having concurrent feed movement)
602 ..With sheet ejector
603 ..Via chute(s) or feed-roller couple (e.g., plural chutes)
603.1 ...Pivotable chute
604 ..Attachment to typewriter for converting to condensed-billing operation
605 .For feeding plural record media concurrently or selectively
606 ..Plural webs superimposed and aligned to each other during typing
607 ..Including movement of one record-medium relative to another

	SHEET OR WEB (E.G., RECORD-MEDIUM FEEDING MECHANISM
	.For feeding plural record media concurrently or selectively
	..Including movement of one record-medium relative to another
607.1	...In lateral direction (e.g., lateral shift of web or sheet carrier)
607.2	...By insertion of additional record-medium
607.3	...With concurrent feed-roller and line-spacing control
608	...With clamp for holding one record-medium stationary
608.1	....Selectively engageable feed-rollers of feed-roller brakes
608.2	...By auxiliary feed-roller or platen section (e.g., separate feed of sheets)
608.3	...By retrograde movement of one record-medium
608.4	...Including differential movement by separate drive means
609	..Mount for plural web rolls
610	..Including sheet-associating attachment (e.g., pin band-encircling platen)
610.1	...With table or frame (e.g., collating-table)
610.2	....Front collating-table with sheet-holding means (e.g., clamps)
610.3	.....Including pin-holding means
610.4	.....Including indicator
611	.For feeding web record-medium
612	..Feeding web or sheet in perpendicular directions
613	..With web supply or takeup or mount therefor (e.g., web cartridge, etc.)
613.1	...Including insertion of leading edge of web
613.2	...For folded or creased web (e.g., fan-fold web)
613.3	....With web smoother
613.4	....Holder for fan-folded web mounted to move with carriage
614	...Including web rewind
614.1	....Connected to platen drive
615	...Mounted on typewriter having transversely moving carriage
615.1	....Mounted to move with carriage
615.2	...For feeding tape in direction of print-line (i.e., transverse feed)
616	..By pin-feed means (e.g., reciprocating pin, etc.)
616.1	...Including laterally adjustable bands (e.g., tractor feed, etc.)
616.2	...Pin feed on endless band
616.3	...Pin wheel (e.g., on platen cylinder)
617	..By friction-feed means (e.g., reciprocating finger or gripper or pinch roller, etc.)
618	..With web tensioning or braking
619	..Including web guiding or aligning (e.g., laterally, relative to print-line, etc.)
620	..Including web shifting to view print-line
621	..With web cutter (e.g., tear bar, wire tool, etc.)
621.1	...For longitudinal cut
621.2	...And guage for tear-off length
622	.With holder for single sheet (e.g., clip, backing sheet, etc.)
623	..Mounted on carriage (e.g., for extra-wide sheet, cylindroidal holder, etc.)
624	.For feeding sheet from stack or pack holder
625	..And delivering to sheet receiver (e.g., by roller couple)
626	..By engaging between flap and body of envelope
627	..By pneumatic means
628	..By reciprocating of oscillating member
629	..By endless-band or rotating (e.g., feed-roller) member
630	.Including aligning of sheet edge prior to typing
631	..Aligner moved to operate concurrently with disengagement of feed means
632	..Including leading-edge aligner located past print-point
632.1	...Adjustable leading-edge aligner
633	..Side-edge aligner (e.g., adjustable, etc.)
633.1	...On rear sheet table or apron
633.2	....Adjustable aligner (e.g., with lock)
634	.Including friction-feed means (e.g., band)
635	..By endless-feed band
636	..By roller couple (e.g., rotatable pinch rollers, etc.)
636.1	...With typewriter-actuated control of feed-roller position
636.2	...Including intermediate drive means (e.g., gears) connecting feed-roller to platen
636.3	...Including feed-roller having equalizing or pressure-adjusting means
637	...Including lower feed-roller(s) (e.g., pressure roller, etc.)
637.1	....Including concurrent control for disengagement of upper and lower feed-rollers
637.2	....Mounted on apron
637.3	....Mounted on plural roller carriers
637.4	.....Including plural parallel carrier pivots
637.5	.....Including single carrier pivot intermediate front and rear lower feed-rollers
637.6	....Mounted on single carrier having pivot intermediate front and rear lower feed-rollers
638	...Including feed or pressure roller mounted on "paper-finger"
639	...Including upper feed-roller(s) (e.g, pressure roller, etc.)
639.1	....Mounted on "paper bail"
639.2	.....Disengaged from platen by compound movement of bail (e.g., on double-pivoted mount)
640	...With cooperating scale
641	...Feed-roller structure or brake or spacer therefor
642	.Including sheet guide (e.g., for sheet insertion, etc.)
643	..Platen-encircling band
644	..Sheet stripper (e.g., for preventing reentry)
645	..Sheet holddown member (e.g., "paper-finger", end-of-page holddown, etc.)
645.1	...With aperture or notch (e.g., for typing therethrough, etc.)
645.2	...On or with erasing plate or signal or indicator
645.3	...Movably mounted on movable finger carrier
645.4	...Pivotally mounted holddown
645.5	...Mounted in front of platen axis
646	..Sheet table at delivery side of platen
647	..Movable sheet table or apron (e.g., detachable, extensible, etc.)
647.1	...Pivotable (e.g., fingerlike support)

648 PLATEN OR PLATEN-MOVING MECHANISM
649 .For movement of platen other than for line-spacing
650 ..Cylindrical platen adjustable to facilitate compactness
651 ..Cylindrical platen axially adjustable
652 ..Platen movment conjointly with type-face movement
653 ..By eccentric mounting for platen
654 .Character-size platen (e.g., anvil, disc, etc.)
655 ..Mounted on movable carrier
656 .Bar (i.e., line size) platen
657 ..Mounted on cylindrical member
658 .Semicylindrical platen
659 .Cylindrical platen
660 ..Detachably secured to platen carriage
660.1 ...By axially displaceable supporting shaft
660.2 ...By pivoted member overlying platen shaft
660.3 ...By disengageable platen sectors
661 ..With sound-muffling means
661.1 ...Including plural layers of varying hardness
661.2 ...Including cylinder containing fluent (e.g., fluid, etc.) material
661.3 ...Including cylindrical sections or rings (e.g., of character-space width)
661.4 ...Including a wound member
662 ..Including particular surface characteristic (e.g., translucent, pigment yielding, corrugated, of varying hardness, etc.)
663 LOCKING OR INTERLOCKING MECHANISM
664 .For interlocking plural functions or mechanisms
665 ..Plural carriage-moving mechanisms (e.g., escapement, tabulation, etc.)
666 ..Plural keys or key linkages (e.g., for type-face selection, etc.)
667 .Key-board lock using interlock mechanism
668 .Locking means actuated in response to a condition
669 ..Failure of power supply
670 ..End-of-page lock (e.g., responsive to preset condition)
670.1 ...Responsive to end-of-page sensor
670.2 ...Including lock for platen or line-space
670.3 ....By cam groove and follower
671 ..End of maximum typed line
671.1 ...Actuated by space-bar
671.2 ...Universal-bar lock (e.g, pivoted latch, slidable latch, etc.)
671.3 ....Actuated by paper-finger
671.4 ....Interposed component
672 ...Escapement lock
672.1 ...Type-bar lock
672.2 ...Key-lever lock (e.g., by hook on key-lever)
673 ..Coin-controlled lock (e.g., responsive to print-lines, time, etc.)
674 .For locking carriage in centered position (e.g., with shipping support)
675 ..And disengaging case-shift lock
676 .Key-board security lock (e.g., cover plate, etc.)
677 .For locking selected group(s) of keys
678 .For locking key in actuated position (e.g., to remove type-face from ink pad)
679 MEANS AUXILIARY TO TYPEWRITING FUNCTION
680 .Means for collapsing typewriter or support for record-medium or copy
681 ..By tilting typewriter (e.g., via collapsible legs, etc.)
682 ..By moving key-board relative to frame (e.g., into plural operating positions, etc.)
683 ..By moving carriage relative to frame
684 ..By moving type-bars relative to frame
685 ..Including typewriter built into carrying case
686 .Buffer (e.g., dashpot, of particular material, etc.) for movable typewriter element
687 ..Having non-impact movement
688 .Means for increasing typewriter noise
689 .Means for muffling typewriter noise
690 ..By sound-barrier enclosure for typewriter (e.g., by sound-absorbing material)
690.1 ...With viewing window (e.g., having reflection eliminator)
690.2 ....And externally protruding (e.g., key-board, etc.) operating means
690.3 ...With externally protruding operating means
690.4 ...Including means facilitating opening of enclosure
691 .Frame, casing, or support for typewriter
692 ..Having means facilitating interchange of parts
693 ..Housing structure
693.1 ...For ink-ribbon spool (e.g., spool cover, etc.)
694 ..Made of particular material (e.g., plastic, etc.)
695 .Means for correcting typing errors (e.g., by abrasive eraser, etc.)
696 ..By laser beam or adhesive-surface ribbon or chemical eradicator
697 ..By overprinting (e.g, with coated material) to cancel error
697.1 ...With drive for ribbon having coating thereon
698 ..With erasing table
699 ..With receptacle for refuse
700 ..With means for rubbing eraser over surface of record-medium
701 .Means for cleaning, or facilitating cleaning of, type-face
702 ..By contacting type-face (e.g., via type-face cleaner, brush, etc.)
702.1 ...Including means for moving brush
703 .Indicator means
704 ..For indicating typist's skill or needed adjustment
705 ..For indicating position of carriage along print-line
705.1 ...Of carriage for type-head-carrier
705.2 ...With word counter
705.3 ...By means driven from carriage (e.g., for indicating end of print-line, etc.)
705.4 ...Scale for facilitating tabulation
705.5 ...Scale for facilitating centering of print-line
706 ..For indicating position of line or end-of-page
706.1 ...By scale mounted on paper table
707 ...By means driven from platen cylinder
707.1 ....Drive initiated by detector of record-medium
707.2 ....Including relatively movable pointer and scale (e.g., rotatable or rectilinearly movable pointer)
707.3 .....Scale rotated by gear drive
707.4 .....Rotatable scale coaxial with platen cylinder
707.5 ....With line numbering

	MEANS AUXILIARY TO TYPEWRITING FUNCTION
	.Indicator means
	..For indicating position of line or end-of-page
708	...Including detector of record-medium
708.1	....Having electrical contacts separated by record-medium
709	..For aligning record-medium with print-point or print-line (e.g., for facilitating correction of error, etc.)
709.1	...By transparent indicator
709.2	...For indicating print-line alignment
710	..Including page counter
711	..Including a light
712	..Including means producing an audible sound (e.g., plural tones, etc.)
713	.Attachment for shielding or screening record-medium or typewriter (e.g., against wind, etc.)
714	..For screening key-board
715	.Attachment for guiding fingers or hands of typist (e.g., hand rest)
716	.Attachment for illuminating or viewing (e.g., prism, etc.)
717	.Attachment for holding an article (e.g., pencil, eraser, etc.)
718	..Copyholder
718.1	...Actuated by typewriter (e.g., to simulate line-spacing, for web copy, etc.)
718.2	....With adjustment of line-spacing
719	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
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900	CHEMICAL-SYMBOL CHARACTER
901	CONTINUOUSLY ROTATING TYPE-HEAD
902	STEPPING-MOTOR DRIVE FOR WEB FEED
903	STEPPING-MOTOR DRIVE FOR CARRIAGE FEED
904	SUBSCRIPT OR SUPERSCRIPT CHARACTER

CLASS 401 COATING IMPLEMENTS WITH MATERIAL SUPPLY

DECEMBER 1990

1	WITH MEANS TO IMPART HEAT TO MATERIAL
2	.At discharge portion of implement
3	INCLUDING HEAT-INSULATING HANDLE
4	WITH MEANS TO AGITATE MATERIAL IN RESERVOIR
5	INCLUDING MEANS TO REGULATE COATING THICKNESS
6	WITH MEANS TO ATTACH OR CONFORM TO BODY OF USER
7	.Hand-or finger-receiving pocket
8	.Hand-or finger loop or strap
9	INCLUDING TOOL(S) FOR CURVED OR PLURAL WORK SURFACE(S)
10	.Confronting tool faces
11	.Concave tool face
12	..For buttering ear corn
13	WITH MEANS TO WITHDRAW MATERIAL FROM WORK SURFACE INTO STORAGE
14	WITH SURFACE-PROTECTING BUMPER
15	WITH SPLASH GUARD OR DRIP CATCHER
16	DIVERSE COATING TOOLS
17	.Each with individual supply
18	.Separable for independent use
19	.Including solid material for rubbing contact
20	..Pencil and bifurcate nib pen
21	.Including ball, roller or endless-belt tool
22	.Simultaneously operative along same path
23	.Including porous tool through which material flows
24	..And brush, broom, or mop
25	.Including blade-like, pad-like, or apertured tool
26	..Apertured tool
27	..Including means for dispensing material directly to work surface
28	MULTIPLE-TIP MULTIPLE-DISCHARGE TOOL (E.G., MASSAGE TOOL)
29	PLURAL TOOLS INCLUDING PROJECTABLE AND RETRACTABLE TOOL
30	.Single actuator for simultaneous projection of one tool and retraction of another
31	.Including individual actuators
32	.Selective individual projection by single actuator
33	..With retraction spring
34	PLURAL EXPOSED TOOLS EACH WITH INDIVIDUAL SUPPLY
35	.Side-by-side
36	INCLUDING MEANS FOR SUPPLYING MATERIAL ALTERNATIVELY TO EACH OF PLURAL TOOLS
37	PLURAL TOOLS WITH SUPPLY TO LESS THAN ALL
38	.Including supply container and independent applicator
39	.Brush, broom or mop
40	CONCENTRATED MATERIAL AND LIQUID CARRIER
41	.Concentrated material in or adjacent reservoir outlet or feeder
42	..Including conduit supply means for liquid carrier
43	...And bypass for liquid carrier
44	SEPARATE FEED FROM PLURAL SUPPLY MEANS TO TOOL OR TO WORK
45	.Selective feed
46	..Including conduit supply means
47	.Diverse materials supplied
48	WITH MEANS SUPPORTING OR STABILIZING IMPLEMENT IN USE
49	SOLID MATERIAL FOR RUBBING CONTACT OR SUPPORT THEREFOR
50	.With means for severing portion of sheath or for shaping tool (e.g., pencil sharpener)
51	..Orbiting blade
52	.Combined
53	.Including means to limit tool projection
54	.Cushioned tool
55	.Including means to advance material
56	..Including means to selectively replenish guide
57	..Including means to sequentially replenish guide
58	..With reinforcement for tool
59	..Inter-related with movable closure
60	...Closure-actuated advancing means
61	..Including removable cap for inactivating advancing means
62	..And additional means to retract from operative position
63	..And means to eject piece from advancing means
64	...Including screw-feed means for both carrier and ejector
65	..Step-by-step
66	...Rack and pawl mechanism
67	...Alternately grasping chucks
68	..Screw feed
69	...Compound screw
70	...With means to disengage screw-feed members
71	...Oppositely oriented helices
72	...Material utilized as threaded advancing element
73	...Breech loading implement
74	...With retrograde-movement retarder
75	...Including means to positively transmit rotation to sliding screw-feed member
76	....Keyed blade-like or eye-headed screw member
77	....By pin and slot coupling
78	.....Including carrier for piece of material
79	...Directly actuatable cam members
80	..With resilient braking means
81	..By spring pressure
82	..Including manual actuator
83	...And latch
84	...And retrograde-movement preventer
85	..With storage chamber for additional piece(s)
86	..Including specific element-coupling or retaining means
87	..Including specific carrier or guide
88	.Including holder
89	..With storage chamber for additional material
90	...Including means to selectively or sequentially replenish guide
91	..Expendable sheath and use-condition point-protector
92	..Including chuck
93	...And annular clamp for chuck jaws
94	....Spring-urged clamp
95	..Including means to increase effective length
96	..Expendable sheath
97	...Sectional, scored or weakened
98	..And removable cap for tool
99	PROJECTABLE AND RETRACTABLE TOOL
100	.Magnetically projected, retracted, or latched
101	.With means to apply force on material in reservoir
102	.Retraction by application of removable closure cap
103	.Tip-pressure projection
104	.Clasp (e.g., Pocket Clip) associated with project-retract means or with latch

	PROJECTABLE AND RETRACTABLE TOOL
	.Clasp (e.g., Pocket Clip) associated with project-retract means or with latch
105	..Clasp passage blocked when tool is projected
106	...By reception of clasp within implement wall recess
107	.With movable closure or gate
108	..Interrelated with tool moving means
109	.Including retraction spring and projected-position retainer
110	..Retainer guided in orbital path (e.g., rotary indexing)
111	...And mechanical-movement actuator
112	..Including laterally or circumferentially movable keeper
113	...And separate release member
114	....For releasing flexibly-biased keeper
115	.Projection by movement of implement
116	.By screw mechanism
117	.Manually reciprocable sleeve
118	SUPPLY CONTAINER AND INDEPENDENT APPLICATOR
119	.Applicator provided with material receiver
120	.Barometric reservoir
121	.With means for removing surplus material from tool
122	..Straddling or encircling tool during withdrawal from supply
123	.Tool supported out of communication with supply
124	..With removable cap for tool
125	..Including compartment for tool
126	.Applicator includes container closure or overlies material
127	..Applicator movable axially relative to closure
128	..Rod-like or spoon-like solid applicator
129	..Brush applicator
130	..Blade-like or pad-like applicator
131	WITH MEANS TO SUPPORT OR STABILIZE IMPLEMENT WHEN NOT IN USE
132	INCLUDING RUPTURABLE MEANS OR SEALED-CARTRIDGE RECEIVER
133	.Sealed-cartridge receiver with flow-establishing means
134	..By piercing cartridge
135	...Implement includes vent, flow-regulator or force-applying means
136	INCLUDING MEANS FOR DISCHARGING MATERIAL ALTERNATIVELY TO TOOL OR TO WORK SURFACE
137	INCLUDING MEANS FOR DISPENSING MATERIAL DIRECTLY TO WORK SURFACE
138	.Reservoir on elongated handle
139	.Blade-like or pad-like tool
140	RESERVOIR SEPARABLY MOUNTED ON ELONGATED HANDLE
141	INCLUDING FLOATING FOLLOWER IN RESERVOIR
142	.Fluid follower
143	INCLUDING MEANS TO APPLY MATERIAL-MOVING FORCE
144	.Including filling tube extensible beyond tool
145	.Including means to flex diaphragm within rigid reservoir
146	.In or at feeder
147	..Actuated by work-contacting roller or ball
148	..Actuated by pressure of tool on work surface
149	..Inflexible solid means
150	...Piston in cylinder
151	.Intercommunicable reservoirs or reservoir sections in series
152	.Including means to collapse flexible wall
153	..Accordion fold wall
154	..By axial twisting
155	..By translatory movement along wall
156	..Resilient wall or wall portion
157	...Wall deformed by gas pressure
158	...Presser bar means
159	....Actuated by clasp or closure cap
160	....Pivoted on fixed axis
161	....Including fixed guide
162	....Resilient
163	....Including mechanical-movement actuator
164	.....Screw
165	.....Lever
166	......Including latch
167	......Including spring
168	....Including actuator and disabling latch
169	...Movable axially of reservoir or chamber
170	.By telescoping cylinder means in continuous communication
171	.Piston-provided reservoir
172	..Movable by screw means
173	...On piston and reservoir wall
174	...On piston and manual actuator
175	....Screw means through piston
176	..Slidable piston
177	...In reservoir having enlarged bore portion
178	...Including flow-regulator through piston
179	...Including mechanical-movement actuator
180	...Spring pressed
181	...Including flexible or pivoted actuator
182	...Including disengageable or extensible operating rod
183	.Manually engageable resilient wall or wall portion
184	..Rigid reservoir with resilient wall portion
185	...Squeeze bulb
186	..Including flow-regulator
187	.By compression or suction of gas in reservoir
188 R	..By one-way means for adding gas to reservoir (e.g., pump)
188 A	....Pens
189	..By one-way means for removing gas from reservoir
190	.Including pressurized reservoir (e.g., Aersol)
191	MATERIAL-CARRYING TOOL MOVABLE AWAY FROM SUPPLY MEANS
192	TRANSPARENT OR TRANSLUCENT WALL
193	WITH WORK-ENGAGING GUIDE
194	WITH SIGNAL OR INDICATOR
195	COMBINED
196	MATERIAL FLOWS THROUGH POROUS TOOL
197	.Hollow roller
198	.Wick feed from within reservoir to tool
199	..Wick separate from tool
200	.Particulate fluent material
201	.Including compartment for soluble solid material
202	.With removable cap for tool
203	.Couplable to external source
204	..With flow-regulator
205	.With flow-regulator
206	..Resiliently biased
207	.Tool or tool unit separable from reservoir

208 INCLUDING BALL, ROLLER OR ENDLESS-BELT TOOL
209 .Ball
210 ..Adjustable-length reservoir
211 ..Magnetic ball-retainer
212 ..Ball-bearing mounting
213 ..With sealing cap
214 ..Elastic ball-mounting
215 ..Specific ball
216 ..Specific ball-retainer
217 ..With means to vent reservoir
218 .Engageable with feed roller
219 .With flow-regulator
220 ..By movement of roller
221 BIFURCATE POINTED NIB TOOL (E.G., FOUNTAIN PEN)
222 .Including reservoir and feeder
223 ..Including capillary material-retainer filling reservoir
224 ..Including filamentary conductor for material or air
225 ..Including overflow receiver
226 ...Hooded tool
227 ...Transverse overflow-receiving grooves or slots
228 ...Laterally exposed
229 ...In or contiguous to feed path
230 ..Intercommunicable reservoir sections in series
231 ..Means regulating nib slit width or flexure
232 ..With flow-regulator
233 ...By adjusting gap between broad-face tool elements (e.g., ruling pen)
234 ...Actuated by protective cap for tool
235 ...By pressure of tool on work surface
236 ...For adjusting feeder channel
237 ....Apertured flow-regulator part
238 ..Feeder overlying tool
239 ...With additional feed element underlying tool
240 ..Angulated or curved feed path
241 ..Feeder extending into reservoir
242 ..Distinct air passage in feeder
243 ..Including removable cap for tool
244 ...And latch
245 ...Cap includes means for sealing feeder or air passage
246 ...Cap shoulder abutting outer end of pen section
247 ...Composite cap
248 ..Hooded tool
249 ..Tool and feeder specifically related
250 ...Integral or interlocked
251 ..Specific joint or connection
252 .Attached coating material retainer feeding directly to tool
253 ..Transversely grooved or slotted
254 ..Cooperating with tool to form pocket
255 ...Overlying tool
256 .Broad face, adjustable gap tool (e.g., ruling pen)
257 ..Pivotally related tool elements
258 INCLUDING STYLUS
259 .Axially movable by pressure on work surface
260 ..Resiliently biased outwardly
261 INCLUDING TOOL WITH BLADE-LIKE, PAD-LIKE, OR APERTURED WORK-CONTACTING END
262 .With removable cap for tool
263 .With flow-regulator
264 ..By pressure of implement on work surface
265 .Apertured tool
266 ..Blade-like or pad-like
267 .Supply-means at tool only (e.g., lettering pen)
268 BRUSH, BROOM, OR MOP
269 .With removable cap for tool
270 .With flow-regulator
271 ..Actuated by material supply
272 ..Actuated by telescoping of tool or by pressure of tool on work surface
273 ...Resiliently biased to closed position
274 ..Responsive to movement of implement
275 ..Actuated by movable implement handle
276 ..Vent-regulating means
277 ..Having operating screw
278 ..Resiliently biased
279 ...Including mechanical-movement actuator
280 ..Apertured movable part
281 ...Rotatable or revoluble
282 .Including feeder
283 ..Porous feeder
284 ..Material directed to periphery of tool
285 ..Elongated perforated tube transverse of tool elements
286 ..Feeder terminates among tool elements
287 ...Plural feeder terminals
288 ...Encompassed by confining means for tool elements
289 ..Attached or attachable to conduit supply means
290 ..Including specific retaining means for tool
291 ..Perforated support
292 MISCELLANEOUS
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DIGESTS
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DIG 1 Readily detachable lipstick cartridges
DIG 2 Remote recording of writing
DIG 3 Point Shape

CLASS 402 BINDER DEVICE RELEASABLY ENGAGING APERTURE OR NOTCH OF SHEET

DECEMBER 1990

1 SHEET RETAINER WITH SEPARATE APERTURE MAKING DEVICE (E.G., PAPER PUNCH, ETC.)
2 SHEET RETAINER WITH LOCK AND DISCRETE KEY OPERATED RELEASE MEANS
3 BINDER WITH VISUAL IDENTIFICATION MEANS
4 COMBINED
5 PIVOTAL LINK TYPE SHEET RETAINER
6 .With means to apply tension thereto
7 SHEET RETAINER ALSO SERVES TO INSERT BINDER STRAND THROUGH SHEET
8 PLIANT, DEFORMABLE SHEET RETAINER (E.G., CORD, BAND, STRAP, ETC.)
9 .With means to apply tension thereto
10 ..Reel type
11 ..Rack or screw type
12 .Endless
13 .Flaccid retainer secured by knotted, intertwined or wedge portion
14 .Secured by folded portion thereof
15 ..Cooperating with holder therefor
16 ...Pivoted holder
17 ...Slidable holder
18 ..With depository attaching means
19 RESILIENT SHEET RETAINER REQUIRING DEFLECTION FOR SHEET REMOVAL
20 .Opposed sheet retainers
21 .Releasably attached to keeper
22 ..One end permanently secured
23 ...On discrete hinge pin
24 SHEET RETAINER INCLUDING SHEET GUIDE MEANS
25 SHEET RETAINER WITH MEANS TO FORCE SHEET THEREON
26 SHEET RETAINER TRAVELS ARCUATE PATH
27 .Coplanar with axis of rotation
28 ..Preceded by a rectilinear travel
29 .Travel in plane perpendicular to axis of rotation
30 ..Preceded by rectilinear travel
31 ..Opposed sheet retainers (e.g., ring binders, etc.)
32 ...Spacing of adjacent retainers adjustable
33 ...Opening between retainers adjustable in predetermined increments
34 ...Stationary retainer with traveling opposed retainer
35 ....Spring biased
36 ...Hinged on spaced axes
37 ....Toggle-type arrangement
38 .....With actuator to open or close retainers
39 .....Including abutting mated components
40 ......Toggle and adjacent retainers of one-piece rod
41 ....With actuator to open or close retainers
42 ...Rotatable on discrete hinge pin
43 ....Plural pairs of opposed retainers independently operable
44 ....Offset retainers
45 ..Opposed keeper cooperating therewith
46 OPPOSED SHEET RETAINERS INVOLVING RELATIVE RECTILINEAR TRAVEL
47 .With or including separable sheet transfer means
48 .Telescopic retainers with means to telescopically drive and/or secure
49 ..Pivoted linkage system
50 ..Remote from retainer
51 ...Screw threaded means
52 ..Notched or grooved means
53 ...Screw threaded
54 ..Wedge type securing means
55 .Travel from aligned to offset position
56 .Travel from aligned to aligned, spaced position
57 COILED SPRING TYPE SHEET RETAINER
58 SEGMENTAL SHEET RETAINER
59 .With keeper
60 SHEET RETAINER WITH RELEASABLE KEEPER (E.G., HOLD DOWN, ETC.)
61 .Keeper cooperating with retainer of varying cross-section
62 ..Apertured retainer
63 ..Notched or grooved retainer (e.g., screw threaded, etc.)
64 .Keeper including wedge type securing means
65 ..Skew locked
66 ...Spring wedge element
67 ..With screw threaded wedge driving means
68 .Keeper including apertured or recessed sheet retainer receiving component
69 ..Spring biased
70 SHEET RETAINER WITH BASE OR DEPOSITORY
71 .With sheet retainer guard
72 .Collapsible on base
73 DEPOSITORY (E.G., BINDER COVER, ETC.)
74 .Face member with back member
75 ..Including means to attach sheet retainer or binder device
76 ..Back member including hinged portions
77 ..Hinged at juncture
78 .Face member
79 SHEET
80 R MISCELLANEOUS
80 L ..Sheet lifters
80 P ..Plastic

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CROSS-REFERENCE ART COLLECTIONS

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500 BINDER WITH TAB OR FASTENER FOR SECURING SHEET
501 SHEET RETAINER CONTINUOUS WITH PERIPHERY OF SHEET NOTCH
502 CONTAINER WITH SHEET RETAINER
503 BINDER DEVICE, SHEET OR DEPOSITORY INCLUDING MAGNETIC MATERIAL

CLASS 403 JOINTS AND CONNECTIONS

DECEMBER 1990

1 SELECTIVELY ENGAGEABLE HUB TO SHAFT CONNECTION
2 INCLUDING FRANGIBLE COMPONENT
3 SELECTIVELY ASSEMBLED, E.G., CONVERTIBLE, ETC.
4 .Selective orientation
5 INFLATABLE CONNECTOR
6 WITH OPENING FOR ACCESS TO CONNECTOR OR OPERATOR
7 .To threaded component
8 ..Transverse to thread axis
9 .To biased component
10 CLOSURE OR PLUG SPACED FROM JOINT
11 WITH ADJUNCTIVE PROTECTOR, BROKEN PARTS RETAINER, REPAIR, ASSEMBLY OR DISASSEMBLY FEATURE
12 .Holding means or protector functioning only during transportation, assembly or disassembly
13 .Position or guide means
14 ..Related to joint component
15 .Utilizing fluid pressure
16 .Back-off means, e.g., separator, etc.
17 .Handle or handwheel
18 ..Actuates retainer or blocker
19 .Tool-engaging or accommodating means or with tool
20 ..For latch or retainer
21 .Releasably captive nut or bolt
22 .Means to lock bolt or nut when other is turned
23 WITH ADJUNCTIVE SHIELD
24 STRUCTURALLY INSTALLED IN DIVERSE ART DEVICE
25 .Head or base
26 COUPLING SUPPORTED BY INDEPENDENT BEARING
27 WITH INDICATOR OR INSPECTION MEANS
28 UTILIZING THERMAL CHARACTERISTIC, E.G., EXPANSION OR CONTRACTION, ETC.
29 .Interposed material of intermediate coefficient of expansion
30 .Members having different coefficients of expansion
31 WITH FLUID PRESSURE RESPONSIVE COMPONENT
32 WITH AMBIENT CONDITION RESPONSIVE CONTROL MEANS
33 WITH INDEPENDENT HANDLE OR OPERATOR
34 WITH DISTINCT FLUID OR ARTICLE HANDLING OR DIRECTING FEATURE
35 .External reservoir
36 .Pressure fitting
37 .Including port or reservoir communicating with joint
38 ..Articulated member
39 ...At joint interface
40 NON-ADHERING FLUENT MATERIAL AT JOINT
41 WITH STRAIN-LIMITING MEANS
42 COMBINED
43 ROTARILY CONNECTED, DIFFERENTIALLY TRANSLATABLE MEMBERS, E.G., TURN-BUCKLE, ETC.
44 .Having tool-engaging means or operating handle
45 .Having operating mechanism
46 .Having locking means
47 .Differential pitch, similar hand
48 .Externally threaded actuator
49 LATERALLY RELATED MEMBERS CONNECTED BY LATCH MEANS
50 FLEXIBLE DIAPHRAGM OR BELLOWS
51 .With additional connection or packing
52 ARTICULATED MEMBERS
53 .Plural distinct articulation axes
54 ..Three or more parallel axes
55 ..Single adjustment for plural axes
56 ..Plural ball and socket
57 ..Universal
58 ...Non-coplanar axes
59 ..Angular and linear
60 ...Screw and swivel
61 ...Pivot stud slidable in elongated opening
62 ..Parallel rotary
63 ..Plural translating connections
64 .Branched
65 .Member pivoted at rigid corner
66 .Including static joint
67 ..Trunnion assembly to side of rod
68 ..One member is plate or side
69 ...Secant, i.e., rod extending through plate
70 ...Plate or side forms bearing surface
71 ...Bearing component clamped to plate or side, e.g., bolted, etc.
72 ..Articulate joint intermediate end joints
73 ...Variable angle
74 ....Universal
75 ..Angled or offset members
76 ..Articulate joint is ball and socket
77 ...With threaded joint
78 ..Articulate joint is a swivel
79 ..Articulate joint comprises pivoted clevis or channel bar
80 ..Articulate joint is a slide
81 .Including operator
82 .Arcuate shank moves in complementary guide
83 .Lockable at fixed position
84 ..At selected angle
85 ...Movable brace between members
86 ...Members rotatable about oblique axes
87 ...Clamping screw traverses sliding complementary arcuate bearing surfaces
88 ...Securing yoke or ring spaced radially from locking means
89 ....Eyebolt
90 ...Ball and socket
91 ...Including pivot stud
92 ....Including radially spaced detent or latch component
93 .....Engaging notch or recess in outer periphery of component
94 .....Side of rod engages recess in radial face
95 .....Pivoted detent
96 .....Engaging recess in radial face
97 ....Including radial interengaging tongue and slot or serrations
98 ....Radially spaced arcuate slot engages fastener
99 ....Locked by plural motions of one member
100 ....Including bridging keeper
101 ....Locked by nesting parts
102 ....Members locked in axial alignment
103 ...Plural distinct positions
104 ..Plural distinct positions
105 ...Unidirectional movement, e.g., ratchet, etc.
106 ...At least one discrete position
107 ....Step-by-step adjustment
108 .....Retainer extends through aligned recesses
109 ..Telescoping members
110 ..Clamped members
111 .Rotatable members resiliently biased to one position
112 .Including limit means
113 ..For pivotal motion
114 ...Ball and socket with restricted movement about one axis
115 ....Ball stud passes through confining opening

	ARTICULATED MEMBERS
	.Including limit means
	..For pivotal motion
116	...Pin and slot
117	...Opposed stops on one member
118	.Threaded interface
119	.Pivoted
120	..Including circumferential biasing or damping means
121	..Rocking or rolling contact
122	..Universal ball and socket
123	...Including internal tie means
124	...Plural concave surfaces with diverse curvature
125	....Interposed concavo-convex component
126	....Outer surfaces
127	...Swiveled ball parts or seat
128	...Composite ball
129	....Spring biased segments
130	....Nonmetallic part
131	....Stud extends into ball
132	...Elastomerically biased or backed components
133	...Elastomeric seat
134	...Externally packed
135	...Including liner, shim, or discrete seat
136	....Spring acts through wedging surfaces
137	....Variably preloaded
138	....Spring-biased seat opposite ball stud
139	....Porous
140	....Completely spacing the members
141	...Divided socket-type coupling
142	...Bifurcated socket
143	...Separable socket sections
144	...Spring-biased
145	..Including tension or take-up means
146	...Interposed spring means coaxial with pivot
147	...Acting through tapered surface on bearing component
148	...Manually variable
149	...External of bearing assembly, e.g., antirattler, etc.
150	..T-pivot, e.g., wrist pin, etc.
151	...Floating pin
152	...Pin is integral with or secured to inner member
153	...Expanded pin or end
154	...Including distinct pin retainer
155	....Unitary clip or plug
156	....Threaded pin end
157	...Fork and tongue
158	....With interposed antifriction means
159	....Oppositely laterally movable tines
160	..On oblique interface
161	..Transverse pin or stud
162	...Traverses interposed facing component
163	...Attached to or integral with one member
164	.Rotatable
165	..Rod in socket
166	.Axially spring-biased coaxial members
167	TRANSVERSE ROD TO SPACED PLATE SURFACES
168	.Retainer utilizes or abuts plural plates
169	BRANCHED
170	.Three or more radiating members
171	..Polyhedral
172	...Unilateral of plane
173	..Plural pairs of axially aligned members
174	..Coplanar
175	...Additional rod held by encompassing means
176	.Polyhedral
177	.Parallel rods
178	.Coplanar
179	DIVERSE MATERIAL COUPLING MEMBER
180	THREE OR MORE SERIAL JOINTS, AT LEAST ONE DIVERSE
181	.Nonaligned axes
182	.Separable intermediate joint
183	..Axially acting connector
184	..Screw or cam
185	JOINT INVOLVING PLURAL LAYERS OF SINGLE ROD
186	LATERALLY RELATED RODS INDEPENDENTLY JOINED TO TRANSVERSE SURFACE
187	ROD TO MEMBER TO SIDE, E.G., PLATE, ROD SIDE, ETC.
188	.Rod side to member to side
189	.Unilateral of side
190	.Arcuate or multiplanar side
191	..Encompassed side
192	.Intermediate member includes tubular part
193	..Side or tubular part deformed in situ
194	..Intermediate member extends through side
195	...Split or divided tubular part and coacting compressor
196	...Transverse clamp secures rod and tubular part
197	...Rod also extends through side
198	..Oblique rod
199	..Intermediate member secured to side by radial flange
200	..Internally threaded tubular part
201	.Intermediate member extends completely through side
202	RADIALLY SPACED MEMBERS JOINED BY INDEPENDENT COUPLING
203	.Flexible intermediate member
204	COACTING CONNECTION BETWEEN INNER MEMBER AND PLURAL PARTS OF OUTER MEMBER
205	RIGID ANGLE COUPLING, E.G., ELBOW OR U, ETC.
206	AXIALLY CURVED OR BENT PORTION OF ROD IS JOINT COMPONENT
207	.Interfitted crossing rods
208	.Joined to laterally related transverse surface at axially spaced points
209	.Reversely bent portion
210	..Around eye-forming thimble
211	..With wedge clamp
212	..Held by crimped collar
213	..Open U
214	.Intertwisted ends
215	.End of rod is deflected laterally within connector
216	.Plural rods distorted by single component
217	THREE OR MORE MEMBERS CONNECTED AT SINGLE LOCUS
218	.All encompassed
219	.Mutually contacting
220	FLEXIBLY CONNECTED RIGID MEMBERS
221	.Rigid sleeve encompasses flexible bushing
222	..Longitudinally divided sleeve
223	.Flexible sleeve-type coupling
224	.Connecting pin traverses radially interposed elastomer
225	.Elastomer interposed between radially spaced members
226	..Elastomer encompasses shoulder on inner member
227	..Including axially acting compressing means
228	..Composite bushing with elastomeric component
229	.Helical spring type coupling
230	ROD END TO TRANSVERSE SIDE OF MEMBER
231	.Corner joint

ROD END TO TRANSVERSE SIDE OF MEMBER
232.1 .Stirrup
233 .Structure attached to rod end encompasses side
234 ..Clamped saddle
235 ..Yoke or ring
236 ...Having radial screw at bight
237 .Including saddle
238 .Gland type
239 ..Rod and side gripped simultaneously by single actuation
240 .Rod clamped to hole edge
241 .Rod to open edge of side, e.g., wrap-around connection
242 .Rod and side deformingly interlocked
243 .Radially interposed, side-engaging shim or bushing
244 .Socket formed by shaping or deforming side
245 .Integral transverse projection on side, e.g., necked, etc.
246 ..From rod side
247 .Utilizing opposite sides of member
248 ..Rod is expanded by component inserted from distal side
249 ...Separate and deformable component
250 ...Plural contacting components
251 ...Barbed component
252 ..Inserted, blind-side-engaging, retaining portion on rod
253 ..Stepped or tapered recess in side
254 ...Terminal, rod-attached retainer engages distal side
255 ....Inserted into rod
256 ..Clamped member
257 ...Clamping component engages recessed side
258 ...Bolted to rod
259 ...Between rod shoulder and terminal nut
260 ...Bolted through member
261 ...Coaxial collar or shoulder or rod is clamp element
262 .Flange on rod bolted to side
263 .Rod received in recessed side, e.g., socket or tapered opening, etc.
264 .Utilizing internal rod structure
265 MOLDED JOINT
266 .And independent connection
267 .Including mechanical interlock
268 .Socket or open cup for bonding material
269 .Member cast in situ
270 .Fusion bond, e.g., weld, etc.
271 ..Metallic fusion material
272 ...Added bonding material, e.g., solder, braze, etc.
273 SHRUNK FIT
274 MEMBER DEFORMED IN SITU
275 .Separating element between strands of member
276 .Interposed deforming element contacts socket bottom
277 .Inner member is expanded by longitudinally inserted element
278 .By separate, deformable element
279 .Deformation occurs simultaneously with action of separate, diverse function, joint component
280 .Deforming component is inserted section
281 .Separate deforming means remains with joint assembly
282 .Deformation occurs simultaneously with assembly
283 .By piercing
284 .Diverse resistance to lateral deforming force
285 .Both members deformed
286 BRIDGED BY DIVERSE CONNECTOR
287 INCLUDING SPACED, DIVERSE CONNECTIONS
288 INCLUDING DISTINCT PACKING
289 SPLIT END WITH LATERALLY MOVABLE OPPOSED PORTIONS
290 .With separate force-applying means
291 FLEXIBLE MEMBER IS JOINT COMPONENT
292 MEMBER ENDS JOINED BY INSERTED SECTION
293 .Externally bridged
294 .Laterally inserted section
295 .Angle section
296 .Section threaded to member
297 .Expansible section
298 .Fluted or splined section
299 THREAD ADAPTOR
300 DISTINCT END COUPLER
301 .Diverse serial connections
302 ..Axially cleft coupler
303 .Single actuator for plural connections
304 ..Axially biased end portions
305 .Plural opposed sockets
306 .Separate screw or pin-type connections
307 .Continuous thread
308 .Having separable end caps or plugs
309 .Interrupted periphery, e.g., split or segmental, etc.
310 ..Axially divided segments
311 ...Interfitting
312 ...Bolted
313 ..Split
314 .Including member wedging or camming means
315 INCLUDING ANCILLARY MEANS BLOCKING DISCONNECTION OF JOINT
316 .Blocker for assembled joint retainer
317 ..Blocker keeper
318 ..Blocked key
319 .Blocker is catch or key
320 .Cam or thread lock
321 MANIPULABLE LATCH
322 .Having operating mechanism
323 .Swiveled bolt
324 .Transversely sliding pin
325 .Spring biased manipulator
326 BIASED CATCH OR LATCH
327 .By separate spring
328 ..Radially sliding catch
329 .Leaf spring
330 .Pivoted
331 SIDE SLIDE: ELONGATED CO-LINEAR MEMBERS
332 ANNULAR RECESS IS JOINT COMPONENT
333 CONVERGENT INTERFACE
334 .Tapered
335 INTERCONNECTED FLANGES OR SHOULDERS
336 .Separate flange or shoulder
337 .Axially bolted or riveted
338 .Clamped
339 SCARF
340 .Mirror images
341 INTERFITTED MEMBERS WITH EXTERNAL BRIDGING PIECE
342 THIMBLE: SCREW OR CAM
343 SCREW OR CAM
344 AXIALLY SPLIT OR SEPARABLE MEMBER
345 INTERFITTED MEMBERS
346 .Crossed rods
347 ..One rod is encompassed by the other
348 .Lugged member, rotary engagement
349 ..Bayonet joint
350 .Rotary binding cam or wedge
351 ..Radially interposed shim or bushing
352 ...Arcuate slip
353 .Assembled by plural manipulations of member
354 .Diametric end slot is joint component
355 .Including separably interposed key
356 ..Axially extending
357 ...Resilient
358 ...Longitudinally stepped or tapered
359 .Longitudinally splined or fluted rod

	INTERFITTED MEMBERS
360	.Externally shouldered or headed rod
361	.Socket
362	.Including set screw
363	.Interfitted angle or channel bars
364	.Interdigitated ends
365	.Radially interposed shim or bushing
366	..Biased by distinct radially acting means
367	..Wedging or camming
368	...Engaged by axial movement
369	....Plural, circumferentially related shims between members
370	....Threaded actuator
371	....Split or slotted bushing
372	..Resilient
373	.Clamped members
374	..By wedge or cam
375	.Peripheral enlargement, depression, or slot on one member is joint component
376	.Including discrete retainer
377	..For telescoping members
378	...Transverse pin
379	....Traversing member
380	..For interfitted side faces
381	.Enlarged head in complementary recess, e.g., dovetail, etc.
382	.Rigid angle
383	.Non-circular rod section is joint component
384	ROD SIDE TO PLATE OR SIDE
385	.Connected by double clamp
386	.Shackle is integral with or independently attached to proximate side of plate or other side
387	.Flanged or grooved rod
388	.Traversed by connector
389	.Laterally spaced rods
390	..By separable shim or bushing in connector
391	..Plural channels in connector
392	.Connected by flexible tie
393	.Lapped rod ends
394	.Diagonal connector
395	.One rod held between bight and other rod extending through aperture in leg of connector
396	.Two rods encompassed by single connector
397	.Resilient clip
398	.Yoke or ring-type connector
399	..Rod received in open channel
400	.Crossed rods
401	MITER JOINT
402	.Connector bridges inner or outer periphery
403	RIGID ANGLE
404	PARTICULAR CONFIGURATION OR MATERIAL OF MEMBER
405.1	SEPARATE CONNECTOR, FASTENER OR RETAINER
406.1	.Independently attached to one member
407.1	..Separable part independently attached to other member
408.1	.Extending through openings in plural members
409.1	.Cam or wedge
410	MISCELLANEOUS
	******************************
	DIGESTS
	******************************
DIG 1	Magnetic
DIG 2	Metal treatment
DIG 3	Load-responsive release
DIG 4	Quick release
DIG 5	Carbon electrode
DIG 6	Reciprocable ball detent
DIG 7	Split ring stop or abutment
DIG 8	Radially acting cam or eccentric
DIG 9	Adjustable clamp
DIG 10	Readily disengageable panel joints

CLASS 404 ROAD STRUCTURE, PROCESS AND APPARATUS

DECEMBER 1990

1 ROAD SYSTEM (E.G., ELEVATED, INTERCHANGE)
2 DRAIN OR GUTTER
3 .With conduit support means
4 .Street or curb inlet for surface drainage
5 ..Separately attached curb box
6 TRAFFIC GUIDE OR BARRIER
7 .Curb
8 ..With rim or edge protector
9 TRAFFIC DIRECTOR
10 .Yielding
11 ..Distinct biasing means recessed in roadway
12 .Attenuated lane marker type
13 ..Discrete interfitted element
14 ..Impregnated with reflective material
15 .Vibration inducing member
16 ..Including reflector
17 PAVEMENT
18 .Combined sheet and preformed module
19 .Anti-slip surface
20 ..Abrasive impregnated
21 ..Including metal
22 .Including light admitting means
23 ..With removable lens
24 ..Concrete frame
25 .Vault cover-closure
26 ..Elevation or level adjustment
27 .Including bed
28 ..Having preformed element layer
29 ...Blocks
30 ...Having irregular aggregate module
31 ..Plural layers
32 .Rubber or rubber-like
33 ..Integral key to base
34 .Modules or blocks (preformed)
35 ..Portable mat type
36 ...Foraminous traffic surface
37 ..Including spacer means
38 ...Integral
39 ....Bevel or incline edge
40 ..With separate interlocking member
41 ..Interfitting
42 ..Patterned
43 ..Supported by footing or beam
44 ..Composite or compound
45 ..Reinforced
46 ..Wood
47 .Including joint means
48 ..With transitory core, cap, screed or installation means
49 ..With internal cavity for deformable filler
50 ..With offset or keyed slab ends
51 ...Plus bridge or dowel means
52 ..With articulated dowel means
53 ..With underlying bridge for adjacent slab ends
54 ...And overlying bridge means
55 ...Janus-faced angle member
56 ..With mid-slab bridge means
57 ...Sliding plate pair
58 ....Horizontal slide plane
59 ...End cushioned or lubricated dowel
60 ...Sleeved or telescoped at joint
61 ...Cantilevered dowel or only filler support
62 ...Supported dowel end
63 ....And supported dowel end
64 ..Preformed non-metallic only
65 ...Externally profiled
66 ...Encased, laminated or composite
67 ..Compound or composite
68 ..Strip or filler plus supporting bracket
69 ..Sealing cap or filler support
70 .Reinforced structure
71 MISCELLANEOUS ROAD STRUCTURE
72 PROCESS
73 .Handling or treating preformed modular unit
74 .Providing expansion joint
75 .In situ treatment of earth or roadway
76 ..Dust fixation or soil stabilization
77 ..Heating
78 ..Raising sunken pavement
79 .Heating
80 ..Including separate handling of different sized aggregate
81 .Separate handling of different sized aggregate
82 .Sequential construction of diverse layers
83 APPARATUS
84 .Automatic control
85 .With means for alternative ground support by tool or transport means
86 ..Tool attachment type
87 .Means to install or form joint
88 ..And means to hold or position dowel
89 ..Means to form groove in plastic or uncured roadway
90 .With means, for comminuting of earth or road surface in situ
91 ..Including removal and redepositing means
92 .With means for in situ material preparation, e.g., mixing
93 .With surface marking
94 ..Applied to existing hard surface
95 .With means for heating earth or road surface
96 .With means for profile shaping, e.g., crown
97 ..Manually propelled
98 ..Curb or gutter
99 .Block laying
100 .Reinforcement material placing, laying or positioning
101 .Material distribution means
102 ..Including dynamic means to compact material
103 ...Roller
104 ..Shoulder paving or surface widening
105 ..With material supply to self-contained side forms, e.g., slip-forms
106 ..With material supply to unit-supporting rail type side forms
107 ..Joint or crack filling
108 ..Including material supply
109 ...Boom and bucket type
110 ...Portable spreader box
111 ...Liquid supply
112 .Tool rotating in horizontal plane
113 .Means to agitate material
114 ..Mounted on screed
115 ..Material immersed agitating means
116 ...Individual element, vertically oriented
117 ..Roller with vibrating or impact means
118 .Screed or drag
119 ..Supported on rail type side forms
120 ..Reciprocating
121 .Sheep foot roller
122 .Rotating drum, roller or tire
123 ..Three tandem rollers
124 ..Roller periphery characteristics
125 ..Plural roll axes angularly shiftable
126 ..Plural roll axes relatively shiftable
127 ..Specific to slope, trench or shoulder application
128 ..Attachment or combined
129 ..With means to lubricate, scrape or clean roller surface
130 ..Shiftable or variable ballast

APPARATUS
.Rotating drum, roller or tire
131 ..Manually propelled, e.g., lawn roller
132 ..Plural rolls with common axes
133 .Tamping means
134 REINFORCEMENT STRUCTURE PER SE
135 .With road chair
136 ROAD CHAIR PER SE

CLASS 405 HYDRAULIC AND EARTH ENGINEERING

DECEMBER 1990

1 MARINE VESSEL PORTAGE, LAUNCHING, OR REMOVING
2 .Rail mounted carrier
3 .Lifting
4 .Dry dock
5 ..Fabrication
6 ..Gate
7 ..Vessel support (e.g., bilge or keel block)
8 PRESSURIZED CAISSON
9 .Having lifting cable
10 .Movable relative to mobile support
11 MEANS TO EXPOSE A NORMALLY WETTED SURFACE,E.G., COFFERDAM, ETC.
12 .Contoured to wetted surface, e.g., side hung ship caisson
13 .Having transport, placement, or dislodgement means
14 .Connectable sections
15 BANK, SHORE, OR BED PROTECTION
16 .Revetment
17 ..Revetment laying
18 ..Continuous concrete or concrete filled bag
19 ..Mattress
20 ...Hinged concrete sections
21 .Wave or flow dissipation
22 ..Fluid application
23 ..Floatable dissipator submerged at site
24 ..Artificial seaweed
25 ..Bed supported subsurface dissipator
26 ..Floating
27 ...Openwork
28 ..Flexibly suspended from or pivoted to support
29 ..Polypod
30 ..Openwork or concave face
31 ...Associated with solid wall
32 ...With fabric
33 ...Interfitted or interleaved members
34 ...Jetty
35 ...Spaced members
36 DRAINAGE OR IRRIGATION
37 .Control means responsive to sensed condition
38 .Including subsurface moisture barrier
39 .Having regulation of flow through channel
40 ..At outlet or intake
41 ...Riser or standpipe outlet or intake
42 .End cap
43 .Porous or apertured pipe, flume, or tileway
44 ..Uniform discharge
45 ..Porous
46 ..Earthen bottom
47 ..Flow through joint
48 ..Open seam or shielded outlet
49 ..Corrugated
50 .Porous waterway, e.g., sand drain, etc.
51 .Branched flow
52 FLUID CONTROL OR TREATMENT
53 .Fluid storage in earthen cavity
54 ..With indicator or alarm means
55 ..Cavity construction
56 ...Including cooling or heating of material surrounding cavity
57 ...Earth treatment
58 ....Dissolving earth
59 ..Supply or recovery of stored fluid by separate fluid
60 .Floatable matter control
60.5 ..Logging device for guiding logs
61 ..Ice
62 ..Barrier formed by fluid
63 ..Floating barrier
64 ...Submergible
65 ...With means to seal space between barrier and fixed structure
66 ...With barrier storage or deployment feature
67 ....Quick release float
68 ....Inflatable or deflatable
69 .....Self-inflating
70 ...Having joint detail
71 ....Having hinged joint between rigid sections
72 ...With reinforcing feature
73 .Erosive scouring
74 .Settling of suspended matter or removal of settled matter
75 .Extracting power from moving fluid
76 ..Wave or tide
77 ...With flow restrictor or ramp
78 ..Associated with dam
79 .Wave generation or enhancement
80 .Flow control
81 ..Fishway
82 ...Elevator
83 ...Closed channel
84 ..Navigable canal
85 ...Having lock
86 ....Movable lifting member
87 ..Water gate or adjustable weir
88 ...Center flow
89 ...Uniform discharge
90 ...Removable
91 ....Flexible
92 ...Condition responsive
93 ....To weight of liquid separated from a main body
94 ....To pressure on pivoted water gate
95 .....With latch for closed position
96 ....Float
97 .....Having separate float chamber
98 ...Roller or flexible
99 ...Swinging
100 ....About horizontal axis
101 .....Overflow
102 ......Collapsible
103 ...Sliding
104 ....Vertical
105 .....Gate unseating
106 .....With lift mechanism or latch
107 ..Artificial water barrier (e.g., dam, levee, etc.)
108 ...Having spillway
109 ...Having impervious core
110 ...Hollow or buttressed
111 ....With ballast compartment or cavity
112 ....Vertical wall buttress
113 ...Tension stayed
114 ...Connectable sections
115 ...Flexible
116 ...In situ construction
117 ....Earthen
118 ..Open channel
119 ...Flume
120 ....Elbow or tee
121 ....Joint
122 .....Including U-clamp
123 ......With crossbar
124 ..Culvert
125 ...Terminal or head
126 ...Serially connected segments
127 ..Intake
128 WASTE DISPOSAL IN SOIL
129 .Landfill
130 TEMPERATURE MODIFICATION OR CONTROL OF EARTHEN FORMATION
131 .Heating
132 UNDERGROUND PASSAGEWAY, E.G., TUNNEL
133 .Vertical
134 .Sectional
135 ..Seal or joint

	UNDERGROUND PASSAGEWAY, E.G., TUNNEL
136	.Subaqueous
137	..Below bed
138	.Boring
139	..With auxiliary tunnel
140	..By axially overlapped members
141	..Shield
142	...With transverse force application feature
143	...Direction control
144	...Door or bulkhead
145	...Discrete independently advanceable earth supporting segments
146	...Lining installation
147	...Seal
148	..Work platform
149	.Cut and cover
150	.Lining
151	..Panel
152	...With sealing feature
153	...With separate fastening means between adjacent panels
154	PIPE OR CABLE LAYING, RETRIEVING, OR UNDERWATER MANIPULATION
155	.Cast in situ
156	.With forming or cutting of pipe or cable
157	.With protection or indication of pipe or trench
158	.Submerging, raising, or manipulating line of pipe or cable in or from marine environment
159	..Entrenched or buried
160	...Condition responsive
161	...Entrenching or burying apparatus guided by pre-positioned pipe or cable
162	....With apparatus buoyancy control
163	....With bottom fluidizing means
164	...By towing submerged sled with attached plow and pipe or cable guide
165	....With means to forcibly feed or to control tension in pipe or cable
166	..Facilitated by extension from line-laying vessel
167	...Articulated segments
168	..With causing or controlling the deformation of a line
169	..With assembling of ling structure
170	...By joining successive sections of line
171	..By control of buoyancy
172	..With anchoring of line
173	..With raising of line from marine floor
174	.By means advancing along terrain and guiding pipe or cable into subterranean position
175	..Condition responsive
176	..Tape or strip
177	..With positive feed or means to vary tension in pipe or cable
178	..Simultaneous laying of plural parallel pipes or cables
179	..With backfill or bedding material conveying or dispensing means
180	..Including trench forming plow with pipe or cable guide
181	...With depth adjustment
182	...With plow vibrating or oscillating means
183	...Guide integral with or rigidly fixed to plow
184	.Advancing subterranean length of pipe or cable
185	DIVING
186	.Suit or accessory therefor
187	..Rigid element
188	.Underwater docking or mooring
189	..With communication between inhabitable enclosures
190	.Remote control
191	..From surface
192	.With air lock
193	.With pressure equalization
194	.With continuous surface access
195	MARINE STRUCTURE OR FABRICATION THEREOF
196	.With work deck vertically adjustable relative to floor
197	..Sectional leg
198	..Longitudinally extending projections or recesses
199	..Frictional gripper
200	..By buoyancy control
201	.With horizontally movable work deck
202	.With pivotal connection between work deck and base
203	.Floatable to site and supported by marine floor
204	..With assembly of sectional supporting structure at site
205	..With ballasting means to sink or position structure at site
206	...Detachable from structure
207	...Compartment in base
208	....And leg depending from base
209	..Separable transport means
210	.Storage container
211	.Structure protection
212	..Fender
213	...Roller type
214	...Having coil spring
215	...Resilient block
216	..Sleeve or coating
217	.In or on frozen media
218	.Dock
219	..Floating
220	..Hinged
221	..Vertically adjustable
222	.Cast in situ
223	..Installing means
224	.With anchoring of structure to marine floor
225	..By grouting preformed structure
226	..Including floor modifying means
227	..By pile extending through sleeve in structure
228	..Pile driving
229	FOUNDATION
230	.Underpinning
231	.Columnar structure (e.g., pier, pile)
232	..Process or apparatus for installing
233	...Casting in situ hardenable fluent material
234	....With heating, cooling, or explosion
235	....With subsequent moving
236	....Subsurface dispensing of material for flow toward surface
237	....Forming subsurface enlargement
238	.....Preformed enlargement cavity
239	....Providing embedded metallic reinforcement
240	....Dispensing fluent material while withdrawing dispenser
241	.....Dispensing auger
242	.....Driven dispenser with separable tip
243	....Withdrawing form structure
244	...With anchoring of structure
245	...Driving removable wall supporting core
246	....Diametrically retractable core
247	.....Fluid pressure actuated
248	...With subsurfacr fluid discharge
249	...Caisson or hollow shaft

	FOUNDATION
	.Columnar structure (e.g., pier, pile)
250	..Comprising series of connected longitudinal sections having diverse compositions
251	..With joint or connection between sections of similar material
252	...Between concrete sections
253	..With driving or cutting tip
254	...Longitudinally ribbed
255	..With end cap
256	..Concrete
257	...With form or casing
258	EARTH TREATMENT OR CONTROL
259	.Rock or earth bolt or anchor
260	..With grouting feature
261	...Breaking canister or packet
262	..With retaining wall
263	.Chemical
264	..Organic
265	...Bituminous
266	..Cementitious (e.g., grouting)
267	...Filling substerranean cavity (e.g., underground wall)
268	...Lining
269	...Injector
270	.Impermeabilization
271	.Compaction
272	.Shoring, bracing, or cave-in prevention
273	..Cribbing
274	..Sheet piles
275	...Concrete
276	...Metal
277	....C or I sections
278	....Head and claw interlock
279	....With separate fastening, reinforcing or sealing means
280	....Cellular
281	....Bulb and socket interlock
282	..Trench shoring
283	...Shield type
284	..Retaining wall
285	...Pile and panel
286	...Concrete
287	....Cast in situ
288	..Roof support
289	...Inflatable
290	...Jack
291	....Mobile
292	.....Position restoring
293	.....With canopy extension
294	......Telescoping
295	.....Cantilevered
296	.....With rubble shield
297	.....With contour following feature
298	.....Under load advanceable
299	.....Self-advanceable
300	......Paired
301	.......Nested
302	.....Control system
303	MISCELLANEOUS
	******************************
	DIGESTS
	******************************
DIG 1	SUBTERANNEAN ROOF PLATE
DIG 2	EXPANDABLE TUBE
DIG 3	FRANGIBLE BOLT
DIG 4	BOLT HAVING WEDGE EXPANDER
DIG 5	CABLE ROOF SUPPORT
DIG 6	SUPPORT CAST IN SITU
DIG 7	MESH SUPPORT
DIG 8	TENSION LEG PLATFORM
DIG 9	PLATFORM BASE PRESSURE HOLDING OR LOOSENING MEANS
DIG 10	CORROSION PREVENTION
DIG 11	RISER PIPE
DIG 12	PIPE LAYING FROM A REEL
DIG 13	PIPE TENSIONER
DIG 14	BUCKLE ARRESTOR FOR PIPES
DIG 15	PILES HAVING SCREW THREADS
DIG 16	SETTABLE MATERIAL TUNNEL LINING

CLASS 406 CONVEYORS, FLUID CURRENT

DECEMBER 1990

1 SELECTIVE DELIVERY
2 .Destination controlled by operator at remote site
3 .Destination controlled by sensed condition
4 ..Controlled by coded load
5 ...Magnetic material on load
6 ...Electrical contact on load
7 ...Adjustable or changeable code on load
8 ...Presence or size of recess or protrusion on front of load
9 ....Protrusion
10 WITH MEANS TO CONTROL CONVEYING FLUID OR MOVEMENT OF LOAD IN RESPONSE TO SENSED CONDITION
11 .Responsive to obstacle in system
12 .Control of conveying fluid
13 ..Reversing of fluid current in single tube system
14 ..Responsive to velocity or pressure change in conveying fluid
15 ...To initiate or terminate fluid current
16 ....In response to introduction or discharge of load
17 .....Discharge and introduction
18 .....With timer to terminate fluid current
19 ..Responsive to presence or absence or quantity of load
20 ...With stepped reset for each load article introduced at intake
21 ...With load detector at outlet to terminate fluid current
22 ...With timer to terminate current
23 ...Level or weight of load in receptacle
24 ....At intake
25 .....And control of load input to receptacle
26 ..Responsive to movement of gate to initiate or terminate fluid current
27 ...To closure of intake gate to initiate fluid current
28 .Control of load input or output
29 ..Input
30 ...Responsive to pressure or velocity change of conveying fluid
31 ...Responsive to presence, absence, or quantity of load
32 ....Level or weight of load in receptacle
33 .....In receptacle at discharge
34 WITH SIGNAL, INDICATOR, OR INSPECTION MEANS
35 .Audible
36 .With load motion observing means
37 .Coded carrier
38 AMBULANT OR PORTABLE
39 .Vehicle mounted
40 ..Plural vehicles
41 ..Towed vehicle
42 ..Power takeoff
43 ..With storage means on vehicle for fluid conveyor components
44 ..With auxiliary supporting means
45 WITH MEANS TO PREVENT PIPELINE SLUMPING
46 WITH ADJUNCTIVE SUBSTANCE ADDED
47 .Liquid
48 ..Water
49 .Solid
50 SLUG CONVEYING
51 WITH DIVERSE POWER-DRIVEN CONVEYOR
52 .Rotary
53 ..Screw
54 ...With material recirculating screw
55 ...Including means to fluidize material
56 ...Feeding to fluid conveyor inlet
57 ....Feeds to inlet of blower or pump
58 .....Screw axis coaxial with axis of rotary blower or pump
59 .....Plural screws
60 ....With check valve between screw and fluid current conveyor
61 ....Fluid jet at conveyor inlet
62 ..Successively registering pockets
63 ...Input to fluid conveyor
64 ....With venting of pockets
65 ....Having radial blades
66 .....Rotatable about vertical axis
67 .....Fluid flow discharges pockets
68 ....Peripheral pockets formed on rotating member
69 ..Brush
70 ..Roller
71 ..Thrower
72 .Magazine
73 .Reciprocating or oscillating
74 ..With pocket
75 ..Vibrating
76 ..Pusher
77 .Endless
78 ..Permeable belt
79 ..At inlet to fluid conveyor
80 ...Feeds to intake of blower or pump
81 ...Pushers, buckets, or tines
82 ..At outlet to fluid conveyor
83 WITH LOAD BRAKING OR RETARDING MEANS
84 .Utilizing a fluid
85 PULSING FLUID CURRENT
86 HAVING MEANS FOR MAINTAINING LOAD IN SUSPENSION ALONG FLOW PATH
87 .With load orienting means
88 .By load supporting jets
89 .Including permeable member
90 ..In receptacle
91 ...Permeable member surrounding discharge opening or conduit
92 .By fluid whirling action
93 HAVING MEANS TO INTRODUCE BOOSTER FLUID INTO CONVEYOR
94 .Plural booster inputs
95 ..With parallel fluid supply conduit
96 BLOWER OR PUMP HAVING LOAD INTAKE OPENING IN HOUSING
97 .Including load or blower protecting means
98 .Having separate opening in housing for conveying fluid input
99 .Rotary
100 ..Having radially extending blades
101 ...Mounted on axial face of a disc
102 ...With load receptacle feeding to intake of blower or pump
103 ....Blower or pump housing movably mounted relative to receptacle
104 ....Plural blowers or pumps
105 HAVING LOAD BY-PASS AROUND BLOWER OR PUMP
106 ENDLESS FLUID CURRENT PATH
107 MATERIAL-BACKFLOW DISCHARGE
108 INTAKE TO FLUID CURRENT CONVEYOR
109 .Combined intake and discharge
110 ..With terminal
111 ...Captive carrier
112 ...Single inlet-outlet
113 .Movable inlet
114 ..Follows load level
115 ..Reciprocating or swinging
116 ...Having telescoping intake
117 .Conveyor having plural intakes
118 ..From receptacle
119 ...Having plural compartments
120 ...Plural receptacles
121 .With sifter
122 .Load receptacle type
123 ..Having inlets to separate conveyors

	INTAKE TO FLUID CURRENT CONVEYOR
	.Load receptacle type
124	..Plural receptacles in series
125	...With gate valve between receptacles
126	...With conical plug valve between receptacles
127	..With valve between receptacle and fluid conveyor
128	...Reciprocating, rotating, or swinging
129	....Rotatable hollow cylinder type
130	....Gate type
131	.....Pivotable
132	....Vertically movable
133	.....Sleeve or conduit
134	..With means to agitate load in receptacle
135	...Rotary
136	...Fluid
137	....Jet
138	....Passed through permeable member
139	..Blower or pump carried by receptacle
140	...Plural blowers or pumps
141	..Inlet conduit extending downwardly inside receptacle
142	...With conduit supplying lifting fluid to interior of receptacle
143	....Fluid supplying conduit extends to inlet conduit
144	..Conveying fluid velocity altered at load input
145	..Having connection for external suction or pressure source
146	..Conveying fluid introduced under pressure to interior of receptacle
147	.Terminal type
148	..Intake gate
149	...With gate lock
150	...Serially arranged gates
151	.Upstream of suction source
152	..Including specific intake nozzle structure
153	..Suction induced by pressure stream
154	FLUID CURRENT CONVEYOR OUTLET MEANS
155	.Conveyor having plural outlets
156	..Feeding plural receptacles
157	.Deflector
158	..Telescoping
159	..Pivoted
160	...Adjustable
161	....From remote location
162	..Rotatable
163	..Carried by receptacle
164	.Movable outlet
165	..Horizontally swinging
166	...And vertically swinging
167	..Telescoping
168	.With material separating receptacle
169	..Having air lock
170	..Having plural inputs
171	..Having filter
172	...And means to clean filter
173	..Cyclone separator
174	..Conveyor outlet conduit extending upwardly inside receptacle
175	..And upstream pressure source
176	.Having terminal
177	..With gate and means to open gate prior to article or carrier arrival
178	...Serially arranged gates
179	..Upward delivery
180	..Discharge gate
181	LOAD FLOW DIVERTER, DIVIDER, OR COMBINER
182	.Movable conduit section
183	.Movable valve in conduit
184	CARRIER
185	.Wheeled
186	.Having side opening
187	.Having end opening
188	..With closure for end opening
189	...Removable
190	.With conduit engaging seal or bumper structure
191	CONDUIT
192	.With fluid valve or load spacer
193	.With wear protection means
194	.Having fluid nozzle
195	.Having changing cross section
196	.Flexible
197	PROCESSES
198	MISCELLANEOUS

CLASS 407 CUTTERS, FOR SHAPING

DECEMBER 1990

1 INCLUDING NONCUTTING WORK MODIFYING MEANS
2 INCLUDING CHIP BREAKER, GUIDE OR DEFLECTOR DETACHABLE FROM TOOL AND TOOL HOLDER
3 .Adjustable relative to cutting edge
4 ..Including adjusting means
5 .Attached to or integral with tool clamping jaw
6 .Chip breaker
7 FREELY MOVABLE CUTTING EDGE
8 YIELDABLE TOOL
9 .Resiliently mounted tool
10 ..Including yield stress or flexure limit adjusting means
11 WITH MEANS TO APPLY FLUID TO CUTTING TOOL
12 ROTARY BROACH
13 RECTILINEAR BROACH
14 .Hollow tool for surrounding workpiece
15 .Including holder having seat for inserted tool
16 ..Annular tool
17 ..Including single tooth
18 .Plural tooth groups
19 .Including sequentially acting teeth of stepped cutting width
20 GEAR CUTTING TOOL
21 .Face mill gear cutting tool
22 ..Adjustable teeth
23 .Hob
24 ..Thread cutting
25 ..Including holder having seat for inserted tool
26 ..For cutting involute gear tooth
27 .Rotary, gear shaving cutting tool
28 .Gear generating, revolving shaper cutting tool
29 .Rotary, tooth form cutting tool
30 ROTARY CUTTING TOOL
31 .Gang
32 .Composite body of diverse material
33 .Including holder (i.e., head) having seat for inserted tool
34 ..Face or end mill
35 ...Plural simultaneously usable separable tools in common seat or common clamp actuator for plural simultaneously usable tools
36 ...Tool adjustable relative to holder
37 ....Radially
38 .....And axially
39 ......Selectively
40 ...With separate means to fasten tool to holder
41 ....Wedge clamp element
42 ...Specified tool shape
43 ..Plural simultaneously usable separable tools in common seat or common clamp actuator for plural simultaneously usable tools
44 ..Tool adjustable relative to holder
45 ...Radially
46 ..With means to fasten tool seat to holder
47 ..With separate means to fasten tool to holder
48 ...Apertured tool
49 ...Wedge clamp element
50 ....Resilient clamp jaw
51 ..Peripherally spaced tools
52 ...Sectional support
53 .Face or end mill
54 ..With cutting edge entirely across end of tool (e.g., router bit, end mill, etc.)
55 .Compound tooth arrangement
56 .Having peripherally spaced teeth
57 ..Axially tapering tool
58 ..Circumferentially staggered
59 ...Plural teeth spaced about a helix
60 ..Varying in cutting edge profile
61 ..Specified tooth shape or spacing
62 ...Arcuate cutting edge
63 ....Helical tooth
64 PROFILED CIRCULAR TOOL
65 ARC SEGMENT TOOL
66 INCLUDING HOLDER HAVING SEAT FOR INSERTED TOOL
67 .Plural spaced seats and common holder
68 ..Relatively adjustable seats
69 ..Simultaneously usable
70 .Plural simultaneously usable separable tools in common seat or common clamp actuator for plural simultaneously usable tools
71 ..Adjustable tool
72 .With tool ejector
73 .With separate means to adjust tool to and fro relative to holder
74 ..With indicator
75 ..Plural provisions for adjustment
76 ..By moving tool seat
77 .Tool adjustable relative to holder
78 ..With indicator
79 ..Plural provisions for adjustment
80 ...Plural interfering seats
81 ...Including pivotable seat or tool
82 ....With detent
83 ....Pivoted seat
84 .....And pivotable tool
85 ..By adjustable or replaceable stop
86 ...Adjustable
87 ....Screw
88 ..By movement of seat relative to holder
89 ...Pivoted seat
90 ..Pivoted tool
91 ..Resiliently biased tool clamping jaw
92 ..Rectilinearly
93 ...Including rotatable cam clamp element
94 ...Including wedge clamp element
95 ....And guide or detent
96 ...Including detent
97 ...Tool gripped directly by set screw
98 ...Slidable jaw
99 .Holder adapted for tools of different shape
100 .With chip breaker, guide or deflector
101 .With separate means to fasten tool seat to holder
102 .With separate means to fasten tool to holder
103 ..Apertured tool
104 ...With means projecting through aperture to force tool laterally against reaction surface
105 ....Tilting clamp element and separate means to tilt same
106 ..Rotatable cam clamp element
107 ..Including tool holding clamp and clamp actuator
108 ...Wedge clamp element
109 ...Resiliently biased clamp jaw
110 ....Integral with holder
111 ...Pivoted jaw
112 ...Slidable jaw
113 INCLUDING TOOL HAVING PLURAL ALTERNATIVELY USABLE CUTTING EDGES
114 .With integral chip breaker, guide or deflector
115 WITH CHIP BREAKER, GUIDE OR DEFLECTOR
116 .Comprising concave surface in cutting face of tool
117 INCLUDING CUT OFF TOOL
118 COMPRISING CUTTING EDGE BONDED TO TOOL SHANK

119 COMPRISING TOOL OF SPECIFIC CHEMICAL COMPOSITION
120 MISCELLANEOUS

CLASS 408 CUTTING BY USE OF ROTATING AXIALLY MOVING TOOL

DECEMBER 1990

1 R PROCESSES
1 BD ..Bit detachable
2 WITH MEANS TO WEIGH OR TEST WORK OR PRODUCT
3 WITH MEANS TO REGULATE OPERATION BY USE OF TEMPLET, TAPE, CARD, OR OTHER REPLACEABLE INFORMATION SUPPLY
4 WITH INTERLOCK BETWEEN MACHINE ELEMENTS
5 WITH RANDOMLY-ACTUATED STOPPING MEANS
6 .Responsive to condition of tool or tool-drive
7 .Responsive to condition of work or product
8 WITH CONTROL MEANS ENERGIZED IN RESPONSE TO ACTIVATOR STIMULATED BY CONDITION SENSOR
9 .To control tool rotation
10 .To control infeed
11 ..Responsive to tool
12 ..Responsive to work
13 .To control relative positioning of tool and work
14 WITH STOPPING UPON COMPLETION OF PRESCRIBED OPERATION
15 .Responsive to condition of work or product
16 WITH SIGNAL, INDICATOR, ILLUMINATOR OR OPTICAL MEANS
17 INCLUDING MEANS TO CAUSE TOOL TO PROGRESSIVELY VIBRATE TOWARD WORK
18 WITH MEANS TO CONDITION TOOL
19 WITH MEANS TO DEFORM WORK TEMPORARILY
20 CONVERTIBLE CUTTING MEANS
21 .Utilizing common cutting tool
22 COMBINED CUTTING MEANS
23 .Including tool operating on rotating work
24 .Plural other type cutting means
25 ..Including plural rotating tools
26 .Including rotating cutter other than rotating, axially moving tool
27 ..Crystalline cutter
28 ..Utilized in cutting work or product to length
29 ...Adapted to cut entire thickness of work at one pass
30 .Including plunging (single stroke) cutter
31 MACHINE INCLUDING PLURAL TOOLS
32 .Axes of tools moving with work during operation
33 ..Including means to infeed tool and means to infeed work or including coaxial tools
34 ..Plural work stations
35 .Turret of tools
36 .Coaxial tools
37 ..Coaxial, opposed tools
38 ...With additional, converging tool
39 ...Plural pairs of coaxial, opposed tools
40 ...With means to sequentially feed tools toward work
41 ...With interconnected means to simultaneously feed tools
42 .Plural, simultaneously operational tools
43 ..With plural simultaneously operational work stations
44 ...Successively acting on workpiece
45 ....Pivotally mounted, work-advancing, work-supporting means, pivot-axis parallel to tool-axis
46 ..With provision for adjustment of relationship of axes
47 ..At least one tool driven by orbiting wrist plate
48 ..At least one tool including flexible drive connection
49 ..With work-infeed
50 ..With means to advance work relative to tool
51 ..With presser-foot
52 ..With tool-opposing, work-engaging surface
53 .Rotatable about parallel axes
54 WITH RADIALLY OUTER LIMIT OF CUTTING EDGE MOVING TO DEFINE CYLINDER PARTIALLY, BUT NOT ENTIRELY ENCIRCLED BY WORK
55 AXIS OF TOOL MOVING WITH WORK DURING OPERATION
56 WITH MEANS TO APPLY TRANSIENT, FLUENT MEDIUM TO WORK OR PRODUCT
57 .Including tool with duct
58 ..And means to move gaseous fluid by application of vacuum
59 ..Conducting channel extending to end of tool
60 ..Including nozzle
61 .Including nozzle
62 WITH WORK-INFEED MEANS
63 .Driven by fluid motor
64 .Driven by means having sliding engagement therewith
65 .Driven by lever or connecting link
66 .And gear to drive infeed means
67 WITH PRODUCT HANDLING OR RECEIVING MEANS
68 .Ejector
69 WITH WORK ADVANCING OR GUIDING MEANS
70 .Means to intermittently advance work
71 ..Rotary, work-supporting means
72 R WITH WORK-ENGAGING STRUCTURE OTHER THAN TOOL OR TOOL-SUPPORT
72 B ..Bushing
73 .With means actuated by work to release tool from fixed position in tool-support
74 ..Adapted to engage work at tool-axis
75 .Centering means adapted to be replaced by tool
76 .Magnetic or suction means
77 .Tool supporting wheel
78 ..Wheel-axis parallel to tool-axis
79 .Frictionally engaging sides of opening in work
80 ..Opening coaxial with tool
81 ...Engaging sides of opening being enlarged by tool
82 ....Engaging surface axially advanced of tool-action
83 ....Engaging surface subsequent to tool-action on that surface
83.5 ...Valve fitting
84 .Funnel like work-engaging surface cooperating with protuberance on work
85 .Adapted to "form" recession in work
86 ..Recession at tool-axis
87 .Having tool-opposing, work-engaging surface
88 ..Tool having shiftable tool-axis
89 ..Angularly adjustable surface
90 ...Adjustable about axis that is parallel to tool-axis
91 ..Laterally adjustable surface
92 ..Flexible or concatenated member
93 ..Connected to tool through opening being enlarged by tool
94 ...Plural, coaxially opposing, work-engaging means
95 ..With presser foot
96 ...Encompassed by tool during cut
97 ...Including tool-guide (or bushing)
98 ...Base supported machine

	WITH WORK-ENGAGING STRUCTURE OTHER THAN TOOL OR TOOL-SUPPORT
	.Having tool-opposing, work-engaging surface
99	..With means to move tool relative to other work-engaging structure along tool-axis
100	...Having sliding engagement therewith
101	....Screw coaxial with tool
102	..Tool having screw-thread engaging frame to cause infeed
103	.Work-gripping clamp
104	..Adapted to coaxially grip round work
105	...Oppositely moving lateral clamps
106	....Three or more moving clamps
107	...Base supported clamp
108	..Oppositely moving lateral clamps
109	..Adjustable relative to tool-axis
110	.Movable relative to tool along tool-axis
111	..Including means to move tool
112	..With means to bias tool away from work
113	.Axially fixed to tool
114	..Work-engaging surface parallel to tool-axis
115 R	.Adjustable, tool-guiding jig
115 B	...Guide bushing
116	TOOL-SUPPORT WITH MEANS TO RECEIVE TOOL-POSITION INDICATOR
117	PLURAL TOOL-ASSEMBLAGES
118	.Coaxial
119	..Spring biased
120	TOOL OR TOOL-SUPPORT WITH TORQUE-APPLYING RATCHET
121	.With thrust applying means
122	..Reversible ratchet
122.5	..Double-acting ratchet
123	.Reversible ratchet
124	MEANS TO DRIVE TOOL
125	.With specific tool structure
126	.Friction gearing
127	.Universal or flexible drive connection to rotate tool
128	.Belt and pulley
129	.Including means to move tool along tool-axis
130	..Fluid means
131	..Laterally adjustable tool
132	..With clutch means
133	...Including plural speed drive
134	...Actuated by tool movement
135	..Rack and pinion
136	..Manually moved lever
137	..Screw coaxial with tool
138	TOOL OR TOOL-SUPPORT WITH THRUST-APPLYING MACHINE-ENGAGING SCREW
139	TOOL OR TOOL-SUPPORT WITH TORQUE-APPLYING CLUTCH
140	.Friction clutch
141	TOOL OR TOOL-SUPPORT WITH TORQUE-APPLYING SPLINE
142	.Relative motion of splined shaft and tool-support causing release of tool from operating position
143	TOOL-CARRIER WITH VIBRATION-DAMPING MEANS
144	TOOL OF SPECIFIC DIVERSE MATERIAL
145	TOOL HAVING CRYSTALLINE CUTTING EDGE
146	TOOL-SUPPORT WITH MEANS TO MOVE TOOL RELATIVE TO TOOL-SUPPORT
147	.To move radially
148	..With tool releasing trigger
149	...And separate tool setting means
150	..To move eccentrically mounted tool
151	...Tool-support including plural, adjustable sections
152	..Moving means including pinion engaging rack-like surface of tool
153	..Moving means including wedge, screw or cam
154	...With resiliently urged tool
155	....With spring retainer
156	....Resilient tool or tool-support
157	...Including oppositely moving, diverging tools
158	...Axially slidable moving-means
159	....Tool pivotally mounted on support
160	....Having axially spaced shoulders
161	....Screw driven wedge or cam
162	.....Screw with axis radially spaced from tool-axis
163	.....Annular wedge-collar
164	......Axially spaced tool-retaining collars
165	.......With travelling wedge
166	.......Tool having axially facing, collar-receiving groove
167	.......Including two-piece collar
168	.....Traveling wedge
169	......Interfitting, tool-retaining wedge
170	.......Including separable interfitting element
171	......Having externally threaded shank connected to tool-support
172	....Annular wedge-collar
173	...Rotary cam
174	....Scroll plate
175	.....Volute scroll
176	.....With means to rotate scroll
177	.....With adjustable means to limit scroll movement
178	....Coaxial with tool-axis
179	...Wedge moving perpendicular to tool-axis
180	...Pivotable tool-support
181	...Screw extending perpendicular to tool-axis
182	....Plural tools moved by diametrically opposed screws
183	.....Screws mounted on common shaft
184	....Tool having pitch-stabilizing ridge
185	....With tool-holding clamp and clamp actuator
186	TOOL-SUPPORT WITH MEANS TO PERMIT POSITIONING OF THE TOOL RELATIVE TO SUPPORT
187	.Pivotable tool
188	..With multiple cutting positions
189	.Tool having stepped cutting edges
190	..Including means to permit both radial and axial positioning of edge
191	..Including means to permit relative axial positioning of edges
192	...With work-engaging structure other than cutting edge
193	...Including central tool axially movable relative to support
194	..Including inverse cutting edge
195	.Including means to "form" depression in work
196	.Including central-lead
197	.Including tool-holding clamp and clamp actuator
198	..Movable along tool-axis
199	TOOL OR TOOL WITH SUPPORT
200	.With work-engaging structure detachable from cutting edge
201	..Removable central lead
202	..Depth-limiting member
203	..Adjustable
203.5	.Hollow milling tool
204	.Having axial, core-receiving central portion
205	..With lateral outlet
206	..And having stepped cutting edges
207	.Having product-receiving chamber

TOOL OR TOOL WITH SUPPORT
.Having product-receiving chamber
208 ..And central lead-screw
209 ..And central lead
210 .Helical ribbon tool
211 .Having inversely angled cutting edge
212 ..And axially extending peripheral cutting spur
213 .Having axially extending peripheral cutting spur
214 .Having central lead-screw
215 .With pitch-stabilizing ridge
216 ..And radially spaced cutting edge
217 ..Including cutting teeth of different width
218 ...And different root circles
219 ..Including tapered section
220 ...And relieved cutting edge
221 ...Including work-embracing cutting edges
222 ..Extending outwardly from tool-axis
223 .Having stepped cutting edges
224 ..Axially spaced
225 ...With central lead
226 .Including detailed shank
227 .Having peripherally spaced cutting edges
228 ..Each formed by a pair of axially facing facets
229 ..With axially extending relief channel
230 ...Spiral channel
231 ..With means to retain tool to support
232 ...Wedge means
233 ...Screw driven means
234 MACHINE FRAME
235 .With counterweight mechanism
236 .Including pivotally mounted tool-carrier
237 ..Including laterally movable tool-carrier
238 TOOL-SUPPORT
239 R .With tool-retaining means
239 A ...Tool adapter
240 ..Clamping jaws
241 R MISCELLANEOUS
241 B ..Drill bushings
241 G ..Drill guide
241 S ..Adjustable stop
****
CROSS-REFERENCE ART COLLECTIONS
****
700 CUTTING BY USE OF ULTRASONIC ENERGY
701 CUTTING BY USE OF RADIANT ENERGY (E.g., LASER, MASER)
702 CUTTING BY USE OF PENUMATIC DRIVE MEANS
703 TREPANNING
704 DRILLING SMALL HOLES
705 DRILLING DEEP HOLES
706 DRILLING BRAKE LINING
707 DRILLING OPENING FOR BEARING IN CONNECTING ROD OR PISTON
708 DRILLING OPENING FOR BEARING IN ENGINE BLOCK
709 REBORING PISTON RECEIVING CYLINDER
710 SAFETY DEVICE
711 ADAPTER FOR BROKEN TOOL
712 DRILL PRESS ADAPTED TO USE PORTABLE HAND DRILL
713 TOOL HAVING DETACHABLE CUTTING EDGE
714 RESILIENT TOOL OR TOOL-SUPPORT
****
DIGEST
****
DIG 1 Bowling ball drill

CLASS 409 GEAR CUTTING, MILLING, OR PLANING

1 GEAR CUTTING
2 .With regulation of operation by use of templet, card, or other replaceable information supply
3 ..Including follower for templet
4 .And burnishing simultaneously
5 .With compensation for backlash in drive means
6 .With work or product advancing
7 ..Utilizing transfer arm
8 .Gear chamfering or deburring
9 ..Using relatively reciprocating or oscillating cutter
10 .Gear tooth shape generating
11 ..Hobbing
12 ...Process
13 ....Generating tooth for bevel gear
14 ...Including means to shift hob between cutting passes
15 ...With control means energized in response to activator stimulated by condition sensor
16 ...Plural hobs
17 ...Including infeed means
18 ....To infeed along axis of work rotation
19 .....Infeed of cutter
20 ......And infeed radially of axis of work rotation
21 ......Vertically
22 ....To infeed radially of axis of work rotation
23 .....Infeed of cutter
24 ......And infeed tangentially of work axis
25 ..Milling with radial faced tool
26 ...Process
27 ...Adapted to cut bevel gear
28 ....With means to continuously rotate work and means to co-form all teeth of gear
29 ....Bevel gear having nonparallel opposing tooth flanks
30 ....Including rotary cutter cradle
31 ..By relative axial movement between synchronously indexing or rotating work and cutter
32 ...Crowning
33 ...Displacing cutter axially relative to work (e.g., gear shaving, etc.)
34 ....Using gear shaper-cutter
35 .....Plural distinct cutting edges
36 .....Cutting rotating work, the axis of which lies in a plane intersecting the cutter axis
37 ..Gear shaving
38 ..Using rotary cutter
39 ...Having axially directed cutting edge
40 ...Plural rotary cutters
41 ...On reciprocating carriage
42 ..Using reciprocating or oscillating cutter
43 ...Bevel gear cutting
44 ....Dual cutters
45 ....Double acting cutter
46 ...Rectilinearly reciprocating cutter
47 ....Cutter comprising a rack
48 ..Making a noncircular gear, worm, rotor, or a planar-faced gear
49 .Gear shaving
50 .Using rotary cutter
51 ..Process
52 ..End mill
53 ...Radially faced
54 ....Using plural, selectively usable tools
55 ..Plural rotary cutters
56 ..Cutting action along work axis
57 ...Cutting action intersecting work axis
58 .Using reciprocating or oscillating cutter
59 ..Broach
60 ..Including circumferentially disposed cutting edges
61 .Work dividing or checking of work position or division
62 .With work clamping
63 WITH FURBISHING OF CUTTER
64 MILLING
65 .Thread or helix generating
66 ..Process
67 ..With means to regulate operation by use of templet, card, or other replaceable information supply
68 ...Complete cycle
69 ...To regulate cutting depth (e.g., relief, taper, etc.)
70 ...To regulate rate of motion (e.g., stopping, etc.)
71 ..With nonthread or nonhelix generating, milling cutter
72 ..With means to advance work or product
73 ..Plural cutters or work holders
74 ..With planetary cutter
75 ..Work means to move work axially and means to interrelate work movement with cutter rotation
76 ..With means to rotate work and means to interrelatedly infeed the work relative to the cutter
77 ...Means to infeed the cutter
78 ..With means to circumferentially adjust the position of the cutter with respect to the work
79 .With regulation of operation by templet, card, or other replaceable information supply
80 ..With sensing of numerical information and regulation without mechanical connection between sensing means and regulated means (i.e., numerical control)
81 ..To cut lock key
82 ...Using templet other than a key
83 ...Complete cycle
84 ..Process
85 ..Reproducing means
86 ...Including pantograph cutter-carrier
87 ....And means to move work at work station
88 .....About work axis
89 ....Pivotally supported for vertical movement
90 ....And means to counterbalance carrier
91 ....Including plural cutters
92 ...By use of pivotally supported tracer
93 ...Duplicating means
94 ....With means for operation without manual intervention
95 .....To make a double curvature foil
96 .....Including means to sense optical or magnetic image
97 .....With means to support templet above or under work
98 .....Including tracer adapted to trigger electrical energy
99 ......To actuate electrically driven work or tool moving means
100 ......To actuate fluid driven work or tool moving means
101 .....Including tracer adapted to trigger fluid energy
102 ......To actuate fluid driven work or tool moving means
103 ....Including cutter and tracer fixed to move laterally together

MILLING
.With regulation of operation by templet, card, or other replaceable information supply
..Reproducing means
...Duplicating means
....With means for operation without manual intervention
104 .....And provision for circumferential relative movement of cutter and work
105 ......Including plural cutters
106 .....Including plural cutters
107 .....Including cross-slide tool carrier
108 ....Including plural cutters
109 ....Including cross-slide tool carrier
110 ....With means to support templet above or under work
111 ....With provision for circumferential relative movement of cutter and work
112 ...With provision for circumferential relative movement of cutter and work
113 ....And means for operation without manual intervention
114 .....Including tracer adapted to trigger electrical or fluid energy
115 ...For using planar templet in cutting profile (e.g., contour map from planar map, etc.)
116 ...Including means for operation without manual intervention
117 ..Including means for operation without manual intervention
118 ...Including simultaneously usable plural tracers or including tracer adapted to simultaneously use plural templets
119 ....To make a double curvature foil
120 ...To make a double curvature foil
121 ...Including cutter and tracer fixed to move together
122 ...With provision for circumferential relative movement of cutter and work
123 ..And provision for circumferential relative movement of cutter and work
124 ..Including cutter and tracer fixed to move together
125 .Templet, tracer, or cutter
126 ..Tracer
127 ...Adapted to trigger electrical energy
128 ....Photocell
129 ...Adapted to trigger fluid energy
130 ..Templet
131 .Process
132 ..Including infeeding
133 .With means to weigh or test work or product
134 .With means to protect operative or machine (e.g., guard, safety device, etc.)
135 .With means to control temperature or lubricate
136 ..Cutter or work
137 .With means to remove chip
138 .Means to trim edge
139 .Means to remove scale or raised surface imperfection
140 ..Means to remove flash or burr
141 .With means to dampen vibration
142 .Means to mill epitrochoidal shape
143 .Means for internal milling
144 .With detachable or auxiliary cutter support to convert cutting action
145 .Including means to infeed work to cutter
146 ..With compensation for backlash in drive means
147 ..With control means energized in response to activator stimulated by condition sensor
148 ...In response to cutter or cutter carriage
149 ...In response to work or work carriage
150 ....To control rate of infeed or return
151 ....To control limit of infeed
152 .....Adapted to hydraulically or pneumatically stimulate control
153 .....Adapted to electrically stimulate control
154 ...To control rate of infeed or return
155 ...To effect stopping of infeed
156 ..With means to change rate of infeed
157 ..Means to mill indeterminate length work
158 ..Multiple work stations
159 ..With means to advance work or product
160 ...Vertically
161 ...Endless or orbital work or product advancing means
162 ..To reciprocate or oscillate work
163 ..With work holder
164 ...And means to selectively position work
165 ...Including means to support work for rotation during operation
166 ....And including means to infeed cutter toward work axis
167 ....With linear movement of work
168 ....With angular movement of work
169 ..Including friction gearing drive
170 ..Including fluid drive
171 .With means to effect stopping upon completion of operation
172 .With means to advance work or product
173 ..Endless or orbital work or product advancing means
174 .With means to precisely reposition work
175 .Randomly manipulated, work supported, or work following device
176 ..For machining commutator
177 ..For cutting longitudinal groove in shaft (e.g., keyway, etc.)
178 ..With work supported guide means
179 ...To guide tool to move in arcuate path
180 ..With work follower
181 ..Randomly manipulated
182 ...End mill (e.g., router, etc.)
183 .Including means to infeed rotary cutter toward work
184 ..With means to limit penetration into work
185 ..Axially
186 ...With infeed control means energized in response to activator stimulated by condition sensor
187 ....In response to cutter condition
188 ....In response to work condition
189 ...With work holder
190 ...And laterally
191 ....Simultaneously
192 ...Plural cutters
193 ..With infeed control means energized in response to activator stimulated by condition sensor
194 ...In response to cutter condition
195 ...In response to work condition
196 ..With means to change rate of infeed
197 ..With work holder
198 ...Indexable
199 ..Machining arcuate surface
200 ...With means to move cutter eccentrically
201 ..Angularly adjustable cutter head

	MILLING
	.Including means to infeed rotary cutter toward work
202	..Including gantry-type cutter-carrier
203	..Plural cutters
204	.Including means to adustably position cutter
205	..With work holder or guide
206	..Linear adjustment
207	...With control for adjustment means responsive to activator stimulated by condition sensor
208	....Responsive to position of cutter
209	....And means to clamp cutter support in adjusted position
210	...With position indicator or limit means
211	...And angular adjustment
212	...Including gantry-type cutter-carrier
213	...Plural cutters
214	..With position indicator or limit means
215	..With right angle cutter drive
216	..Compound angular adjustment
217	..Plural cutters
218	.With limit means to aid in positioning of cutter bit or work (e.g., gauge, stop, etc.)
219	.Work support
220	..With position indicator or stop
221	..Indexable
222	...Including dividing head
223	....Multiple row dividing head
224	..With angular adjustment
225	..With work holder or guide
226	...Including cutter limited to rotary motion
227	..With means to adjust work support vertically
228	.Including cutter limited to rotary motion
229	..Cutter turning about vertical axis
230	.Detachable or repositionable tool head
231	.Cutter spindle or spindle support
232	..With cutter holder
233	...And draw bar
234	.With cutter holder
235	.Machine frame
236	..Overarm harness structure
237	..Including counterbalancing means
238	..Including means to compensate for deformation
239	...Deflection of cutter spindle
240	..Convertible from lathe
241	..Including relatively movable components and means to relatively immobilize these components
242	.Tailstock
243	BROACHING
244	.Process
245	.With control means energized in response to activator stimulated by condition sensor
246	..Responsive to condition of work or product
247	.With means to distribute cutter infeed force
248	.With means to select cutter or to select or modify cutter drive
249	.With means to clean, lubricate, or modify temperature of work or cutter
250	.With product handling means
251	..Between plural broaching stations
252	..Means to eject broached product
253	..Chip removal means
254	.With means to protect operative or machine (e.g., guard, safety device, etc.)
255	..With safety means for overload or safety interlock
256	.With work immobilizer and means to activate work immobilizer interrelated with cutter infeed, work infeed, or work advance
257	.With work infeed or advancing means and means to clamp the work thereto, which clamping means is interrelated with work or cutter infeed
258	.Means to remove flash or burr
259	.Means for cutting groove
260	..Arcuate groove in cylindrical surface
261	...Rifling
262	.Orbital carrier for cutter
263	.Orbital carrier for work
264	.With means to cyclically manipulate cutter or cutter support
265	..To reorient, introduce, or remove cutter
266	..Cutter released to interim support at termination of cutting stroke
267	..To remove and return cutter to cutter support
268	.With plural cutters
269	.With means to advance, infeed, or manipulate work
270	..Interrelated with cutter infeed
271	...Including means supporting work and additional means opposing infeed force
272	...Including work indexing means for sequential cutting of different surfaces of a single workpiece
273	...Including work indexing means for sequential cutting of surfaces of different workpieces
274	...With means to retract work from path of tool's idle return stroke
275	..To infeed work past cutter
276	.With means to hold work during cutting
277	..Including work clamping means
278	..With means to adjust or facilitate adjustment of work or work holder
279	..With means on work or work holder to guide cutter during infeed
280	.Cutter infeed means
281	..Imparting rectilinear motion to cutter
282	...And rotary motion to cutter
283	...Fluid powered means
284	...Rack means
285	...Screw means
286	.Machine frame
287	.Cutter support or guide
288	PLANING
289	.With regulation of operation by templet, card, or other replaceable information supply
290	..Including use of tracer adapted to trigger electrical or fluid energy
291	...Including provision for circumferential relative movement of cutter and work
292	..Including provision for circumferential relative movement of cutter and work
293	.Process
294	.With means to lubricate
295	.With product handling means
296	.Randomly manipulated, work supported, or work following device
297	.Means to remove flash or burr
298	..Elongated work
299	...Flash or burr inside hollow work
300	...Transverse burr
301	..Flat work
302	.Of commutator

PLANING
303 .Means for trimming edge (e.g., chamfering, scarfing, etc.)
304 .Means for cutting groove
305 ..Arcuate groove
306 ...For rifling
307 ..Inside hollow work
308 .Means for shaving by blade spanning work surface
309 ..Concave work surface (e.g., bearing, stereotype printing plate, etc,)
310 ..Circumferential surface
311 ..Including rack driven infeed means
312 ..Including roller infeed means
313 .Means for cutting arcuate surface
314 ..Cycloidal surface
315 ..With work infeed and means to arcuately reposition the cutter
316 ..With work infeed and means to arcuately reposition the work
317 .With means to relatively infeed cutter and work
318 ..And means to rotate work and cutter at same rate about converging axes
319 ..With plural sequentially acting cutters or with double acting cutter
320 ..And means to vary rate of infeed
321 ..Reciprocating work infeed means
322 ...With fluid-driven bed
323 ...With rack-driven bed
324 ...With screw-driven bed
325 ...And means to permit repositioning of cutter laterally
326 ..Reciprocating cutter infeed means
327 ...Reciprocating cutter horizontally
328 ....With work support and lead screw to reposition work support
329 ....With fluid-powered means to drive cutter
330 ....With pivoting link to drive cutter
331 .....Link driven by crank
332 ....With rack to drive cutter
333 ....With screw to drive cutter
334 ...With link or cam to drive cutter
335 ...With rack to drive cutter
336 ..Including means causing return stroke
337 .Machine frame
338 ..Means to permit repositioning of cutter
339 ...Laterally
340 ....Plural independently positioned cutters
341 ....Including clutch
342 ....Including repositioning means and means to effect stopping thereof
343 ..Including relatively movable components and means to relatively immobilize these components
344 ..Work table
345 .Tool head
346 ..With selectively usable cutting edges
347 ..With means to permit repositioning of cutting for idle return stroke
348 ...Comprising pivotable cutter or cutter support

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CROSS-REFERENCE ART COLLECTIONS

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900.1 MACHINE BUTTON OR LOCATOR
900.2 MACHINE TOOL CARRIAGE CLAMP
901 STEREOTYPE PRINTING PLATE
902 TIRE MOLD
903 WORK HOLDER
904 WITH HYDROSTATIC BEARING

CLASS 410 FREIGHT ACCOMMODATION ON FREIGHT CARRIER

DECEMBER 1990

A word which is defined in the definitions for this class is identified by an asterisk.

Where a term consisting of a group of words is defined in the definitions, parentheses are used to identify the beginning and end of the term; and this is followed by an asterisk.

1	INCLUDING TURNTABLE FOR LOAD, E.G., FOR SEMITRAILER
2	PARTICULAR ARTICLE ACCOMMODATION
3	.Wheeled vehicle
4	..Four-wheeled vehicle accommodation
5	...Overturned or on-edge vehicle arrangement
6	....Ramp becomes vehicle sustainer
7	...Vehicle retainer*
8	....Multipositionable; i.e., along array strip or track
9	.....Wheel, hub, or axle retainer*
10	......Tiedown*
11	.....Tiedown*
12	......Including force-multiplying takeup or tensioning means
13	....In arrangement in which the vehicle end, at least, is raised to hood section height
14	.....Elevatable deck suspended from hoist line
15	......Lift simultaneously erects pivoted prop
16	.....Including wheel-straddling member which is a retainer* or retainer* adjunct
17	.....Including suspended retainer* member or prop
18	.....Retainer* arm or prop extending from freight carrier wall
19	....For wheel, hub, or axle shaft
20	.....Wheel wraparound*
21	.....(Load lashing retainer)*
22	.....Hub or axle shaft retainer*
23	....Tiedown*
24	...Raised vehicle arrangement
24.1	....Including above-cab stowage
25	....Interrupted or recessed wheel support
26	....Multilevel deck; i.e., four-wheel support
27	.....Including interdeck transfer way
28	......On dropped-center car
28.1	.....On dropped section freight carrier
29	.....Vertically swingable from hinge at freight carrier wall
29.1	.....Higher level deck positioned, then sustained by power cylinder
30	...Wheel cradle, chock, or well
31	.Grouped
32	..Group of articles which are, predominantly, regularly contoured; i.e., are rodlike, panel shaped, blocks, or analogous forms
33	...Articles with protuberance or flange
34	...Grouped by load binder or press means
35	....Grouped together with on-and-off base
36	....Cylindrical article group
37	.....Log load
38	....Press
39	.....Including spacer
40	......Between groups
41	....Including angle overlay, e.g., corner guard
42	...Cylindrical article group
43	..Vehicle body part group
44	.Accommodation of article which is massive relative to freight carrier
45	..Stowed as bridge between trucks or across cars or on drop-center (schnabel type) car
46	.On supporting on-and-off base
47	.Cylindrical article accommodation
48	..Rigid retainer* acting as, or retentively contacting a core or hub
49	..Cradle or chock
50	...And wraparound* lashing
51	DRAFT (INCLUDING PUSHED) FREIGHT CARRIER, E.G., WAGON, HAND TRUCK
52	LOAD BEARER ACCOMMODATION
53	.Stowed as bridge between trucks
54	.Diverse load accommodation, e.g., convertible between semitrailer and container accommodation
55	..Retainer including load lashing anchor capability
56	.Semitrailer accommodation
57	..Fore-and-aft accommodation
58	..Collapsible and erectable stand
59	...Tractor operated
60	....Cushioned
61	...Jack screw erected
62	...(Fore-and-aft direction slide cushioning means)*
63	...Cushioned cylinder strut
64	...King pin latch
65	..Accommodation means conforms to wheel sidewall during guidance or rest condition, e.g., rub rail or wheel well
66	.Wheeled load bearer accommodation
67	..Including wheel guide
68	.Accommodation of rigid wall container for bulk material
69	.Load bearer tripped retainer*
70	..Retainer* mounted on (corner pedestal)*
71	.Corner pedestal
72	..Vertically displaceable, e.g., on horizontal axis
73	...Including male-female retainer*
74	....Mounted on pedestal which is also slidable along track
75	...And slidable along track
76	..Including male-female retainer*
77	.Retainer
78	..Multiunit retainer
79	...Oppositely directed latch pair to retain contiguous load bearers
80	..Load bearer understructure retention, e.g., leg engaging
81	...By insertion of completely separable retainer, e.g., bolt, through aligned apertures
82	..Twist lock
83	...Project-retract mounting
84	..Load bearer mounts active retainer received by static freight carrier keeper
85	..Load bearer (load lashing retainer)*
86	..Including load bearer cushioning means
87	.Cushioned accommodation
88	..(Fore-and-aft direction slide cushioning means)*
89	.Wall-to-wall socket-entering load bearer
90	.Load bearer accommodation by underside socketing

LOAD BEARER ACCOMMODATION
.Load bearer accommodation by underside socketing
91 ..Pin-socket accommodation
92 .Rollerway
93 .Drop side car, side converts to ramp
94 .Load bearer abutment
95 ..Between load bearer units
96 LOAD LASHING RETAINER OR LOAD LASHING ADJUNCT
97 .Wraparound
98 ..Method
99 ..Including angular surface guard, e.g., edge-around
100 ..Including tightener or tensioner
101 .Anchor
102 ..Multipurpose, e.g., combined, convertible
103 ..Including winch or tensioner
104 ..Track-guided anchor
105 ...Anchor-admitting cross-slotted track
106 ..Mounted on exposed and bordering structural member
107 ...Project-retract (tie piece)*
108 ...In exposed array therealong
109 ....And inboard-mounted anchor, e.g., recessed in car facing
110 ....Atop wall of open top freight carrier, e.g., bulb-angle mounted
111 ..Project-retract (tie piece)*
112 ..Recessed in car facing
113 ...Recessed anchor array
114 ....Of attached (tie pieces)*, e.g., welded
115 ..Array strip or formation
116 ..Including mounting means for facile assembly or removal of (tie piece)*
117 YIELDABLE BRACE
118 .Panel
119 ..Inflated or inflatable
120 RIGID MEMBERS RETAINER, E.G., WRAPAROUND TYPE
121 LOAD BRACING MEANS
122 .Bifacial brace
123 ..Squeeze
124 ...Powered or pressurized
125 ....Intervening squeeze bag
126 ...Track guided
127 .Brace panel with wall-to-lading adjustment means
128 ..Forcing, e.g., motorized, pressurized, or adjusted by force-multiply means
129 .Panel or frame, wall-to-wall
130 ..Track mounted
131 ...Wall-to-wall pair, oppositely swinging
132 ...Including pin-in-aperture latch
133 ....Track is apertured to define both (a) a sprocket wheel rack, and (b) a series of latch pin receivers
134 .....Gang-operated latch pins
135 ....Panel movable to out-of-way position
136 .....Winched
137 ....Gang-operated latch pins
138 .....Including pin which latches into track aperture
139 ....Track is apertured to receive latch pin
140 ..Deployed structure or comprising individually installed parts
141 ...Latched to side wall aperture or slot
142 ..Having aperture-entering latch pin
143 .Brace bar, wall-to-wall
144 ..Aperture-entering wall-to-wall connection at the end
145 ...Axially adjustable toward wall, e.g., telescopic
146 ....Axially adjustable end fitting, with pivoted aperture-entering part
147 .....Aperture-entering duo
148 ....Axially adjustable end fitting has integral aperture-entering part and pivotally mounted cooperating latch part
149 ....Spring biased
150 ..Track mounted, for slidable adjustment along the car wall
151 ..Wall-to-wall force fit; or having wall piercing end
152 ..Brace bar receiver
153 .Brace post
154 .Honeycomb
155 .Edge-around dunnage brace
156 MISCELLANEOUS

CLASS 411 EXPANDED, THREADED, DRIVEN, HEADED, TOOL-DEFORMED, OR LOCKED-THREADED FASTENER

1 TORQUE RESPONSIVE NUT OR BOLT DRIVING CONNECTION
2 .Frangible connection
3 ..Between concentric elements
4 ...Shear pin connecting means
5 ...Axially displaced
6 .Resilient connection
7 ..Ratchet
8 WITH MEANS TO INDICATE APPLICATION OF PREDETERMINED STRESS-STRAIN
9 .Axially deformable member or portion
10 ..Deformable washer
11 ...Resilient
12 ....Coil spring
13 .Color indicator
14 .Including gauge means
15 HAVING SEPARATE EXPANDER MEANS
16 .Helical anchor
17 ..Mates with mandrel thread
18 ..With wedge-shaped expander
19 .Fluent pressure actuated
20 ..Explosive
21 .Having securing element projecting through aperture in sleeve
22 ..Deformable element
23 ...Flowable mass
24 .Oppositely acting double wedge expander means
25 ..Outwardly moving
26 ..Both wedges provided with thread cooperating means
27 ..Having rotation preventing means
28 ...Groove and follower
29 .With hole forming means
30 ..Formed on expansible sleeve
31 ...Serrated end
32 .Plural expansible segments or sections
33 ..Identical segments
34 .Bulged by axially contracting ends
35 ..Having wedge-shaped section acting in slot
36 ..Twistable sleeve
37 ..Bulged portion having additional gripping means
38 ..Bulged portion including bend line or reduced section
39 .Frangible member
40 ..Frangibly connected expander
41 ...Projecting outwardly from head
42 ..Sleeve including weakened portion
43 ..Frangible mandrel
44 .Including sleeve and tapered expander
45 ..And means to captively retain expander
46 ...Follower captive within groove
47 ...Bridge-type retainer
48 ...Tongue-type retainer
49 ..Relative rotation preventing means
50 ...Guide and follower
51 ....Splines
52 ....Follower defined by corners of polygonal element
53 ....Expander type
54 ..Expansible element moved relative to stationary expander
55 ..Expander threadedly engaged by mover
56 ..Stepped expander
57 ..Slotted sleeve
58 ...Both ends slotted
59 ...Slot spaced from ends
60 ...Throughout longitudinal extent of sleeve
61 ....Folded blank type
62 ....Slot angularly related to sleeve axis
63 ..Plural-sectioned sleeve
64 ...Having section retainer
65 ....Ring or sleeve type
66 .....Destructible
67 ....Bight type
68 ....Tongue and groove
69 ..Expander or sleeve extruded during expansion
70 ..Expander having integral pull stem
71 ..Sleeve having external gripping means
72 ...Circumferential rib
73 ....And longitudinal rib
74 ...Struck from sleeve
75 .Relatively sliding wedge surfaces
76 ..Wedge received in transverse slot in holding device or anchor
77 ...Double-faced wedge
78 ..Having wedge retainer means
79 ..Wedge surfaces act in single lateral direction
80 ..Including discrete activating means for wedge
81 THREADED FASTENER AND MEANS FOR RESTRICTING ROTATION THEREOF RELATIVE TO COACTING SUBSTRUCTURE
82 .Including settable material
83 .Including movable, separable, or nondistortably connected restricting member
84 ..Prefabricated assembly comprising strip or sheet member carrying plural, similar fasteners
85 ...Including element for holding fasteners against separation from member
86 ..Including a series of elements, one element restricting two fasteners of a plurality, and the remainder each restricting one fastener
87 ..Elongate member extending between and interlocking plural bolts or nuts
88 ...Member engages inwardly facing surface and a flat side of bolt head or nut
89 ..Member extending between plural fasteners and restricting the rotation thereof in one direction more than the other (e.g., pawl and ratchet)
90 ..Member extending between and engaging flat formed on side of each of a plurality of bolts or nuts (e.g., side lock)
91 ...And element on opposite face of substructure restricting rotation of a cooperating nut or bolt
92 ...Having plural openings or notches engaging a bolt or nut on two sides
93 ....Having plural parts, one of which engages the inwardly facing surface of a bolt head or nut
94 .....Special fishplate engaging inwardly facing surface
95 .....Elastically or plastically deformable part
96 ....Having plural parts, one comprising a keeper
97 ....Unitary member, deformable in whole or in part
98 ...And engaging the inwardly facing surface of the bolt heads or nuts
99 ...Including separable keeper for member
100 ...Including element spacing member from substructure
101 ..Member engages the inwardly facing surface of a plurality of bolt heads or nuts
102 ..Series of elements, each restricting a single fastener, cooperating to restrict a series of fasteners

THREADED FASTENER AND MEANS FOR RESTRICTING ROTATION THEREOF RELATIVE TO COACTING SUBSTRUCTURE
.Including movable, separable, or nondistortably connected restricting member
103 ..Member preassembled with substructure at through-passage or recess for holding single bolt or nut in coaxial relation therewith
104 ...Through-passage or recess having laterally extending entry for inserting member and nut
105 ...And a second substructure and means for capturing a complementary nut or bolt thereto
106 ...Having means for coupling a bolt to a nut (e.g., thread lock)
107 ...Member anchors bolt in substructure with threaded portion exposed (e.g., stud bolt)
108 ...Nut-encompassing sleeve member engaged within through-passage or recess
109 ...Locking ring coaxially related to an elongated, externally threaded nut
110 ...Member comprises a longitudinal key
111 ...Member includes elastically or plastically deformable portion
112 ....Having elastically deformable portion for attaching member to substructure
113 ....Plastically deformable portion
114 ..Recessed or toothed member receiving movable pawl carried by bolt head or nut
115 ...Having discrete, reciprocably movable pawl
116 ..Fastener, or coaxial adjunct therefor, having sidewardly facing flat or formation engaged by portion of member (e.g., side lock)
117 ...Adjunct carried flat or formaton
118 ...And thread lock coupling complementary fasteners
119 ...Member having opening or notch engaging a bolt head or nut on two sides
120 ....And element maintaining member in operative engagement with bolt head or nut
121 ....Member elastically or plastically deformable for attaching it to bolt head or nut
122 ...Member having portion (e.g., tab) deformable in situ into engagement with flat or formation
123 ....And having specific structure to coact with substructure
124 .....Projection on member and coacting formation in substructure
125 ...Sheet metal member having resilient pawl distorted therefrom
126 ....Member includes means which attempt to penetrate substructure
127 ....Member abuts coacting part on substructure
128 ...Member, or portion thereof, comprises movable pawl
129 ...Member engages inwardly facing surface of bolt head or nut
130 ....And is formed from plural, cooperating parts
131 ....And has specific structure to coact with substructure
132 ..Member or portion thereof located between substructure and inwardly facing surface of bolt head or nut
133 ...Member fixed to bolt shank, and member or bolt fixed to substructure
134 ...Means holding member to bolt, nut or substructure prior to use
135 ....By discrete element
136 ...Member comprises looplike element (e.g., washer) interlocked with additional element, one of them engaging substructure or surface in other than planar, face to face contact
137 ....Two looplike elements interlocked by laterally introduced key
138 ....Pawl element, movably carried by looplike element, coacts with ratchet on surface
139 ....Laterally introduced key locks looplike element to surface
140 ...Elongate member moves in longitudinally extending opening in bolt head or nut to enter substructure
141 ...Locking dog or pawl carried by bolt head or nut and engaging substructure
142 ...Key introduced laterally at juncture of surface and substructure
143 ...Formations on either member or surface, and cooperative, restricting means on the other
144 ....Formations on surface, means on member, one of which presents a sharp edged configuration
145 .....Formations comprise ramplike teeth, means comprises a movable pawl
146 ......And substructure accommodation for member portion
147 ...Member comprises washer formed as closed loop or apertured plate or as split ring
148 ....Engaging side wall of counterbore in substructure
149 ....Plural, axially adjacent washers, or plural part washer
150 .....Having one washer, or washer part, of a more yieldable nature than another washer, or part
151 ....Split ring having radially outwardly extending end
152 ....Ends of split ring overlap in stressed condition
153 .....Overlap of at least 180 degrees (e.g., coil)
154 ....Apertured plate of uniform thickness having undulating contact surfaces
155 ....Apertured plate having arched sectional configuration (e.g., concavo-convex)
156 .....Arched configuration circumscribes aperture
157 ....Split ring having opposed ends offset axially
158 .....Contact surface contains a plurality of generally radially extending ridges or grooves removed from the ends
159 .....Cross section other than rectangular
160 ....Closed loop having plural variations in the profile of a contact surface or a peripheral edge thereof

THREADED FASTENER AND MEANS FOR RESTRICTING ROTATION THEREOF RELATIVE TO COACTING SUBSTRUCTURE

.Including movable, separable, or nondistortably connected restricting member

..Member or portion thereof located between substructure and inwardly facing surface of bolt head or nut

...Member comprises washer formed as closed loop or apertured plate or as split ring

....Closed loop having plural variations in the profile of a contact surface or a peripheral edge thereof

161 .....Variations comprise generally radially extending ridges or grooves

162 .....Variations comprise circumferentially spaced projections or recesses inset from both peripheries

163 .....Variations are teeth located along a periphery

164 ......Both peripheries

165 ....Each twisted about its radial axis

166 .Restricting means comprises structure of fastener or substructure

167 ..And bolt to nut thread lock

168 ..By or including bolt to substructure thread lock

169 ..Mass of bolt head or nut offset radially to resist loosening

170 ..Nut and apertured spacer formed in single strip of material and folded into axial alignment

171 ..Bolt or nut adapted to be fused directly to substructure (e.g., weld nut)

172 ..Nut, and means to engage substructure on its opposite faces for retaining nut at aperture therein, formed as unitary component

173 ...Means to engage extends through aperture

174 ...Means to engage grasps an edge of substructure

175 ....And has projection contacting periphery of aperture

176 ..Structure includes region which is deformable or produces deformation or both

177 ...Nut assembled to substructure utilizing cooperating regions on both

178 ....Nut is externally and internally threaded cylinder

179 ....Nut penetrates substructure and anchors itself thereto (e.g., pierce nut)

180 ....Nut deforms wall of preformed opening in substructure during assembly

181 ....Both cooperating regions deformed

182 ....Nonmetallic nut, resiliently deformed during assembly

183 ...Nut assembled to substructure by plastically deformable region on nut

184 ...Region on inwardly facing surface of bolt head or nut

185 ....Surface extends radially beyond flat sides of bolt head or nut

186 .....And includes resilient flange

187 ....Having axially directed projection or recess

188 .....Plural, radially extending, and generally equally spaced

189 ....Surface deforms resiliently

190 THREADED BOLT AND NUT AND MEANS FOR COUPLING THEM AGAINST RELATIVE ROTATION

191 .By locking member contacting side flat on nut or bolt and engageable with other fastener element

192 ..Member also engages side flat on other element

193 ...Utilizing a resilient characteristic of the member, or of a discrete element

194 ....With a discrete, resilient element

195 ...Other element is a bolt, and member includes opening configured to engage side flat thereon

196 ....And further includes spaced, axially extending legs for engaging side flats on the nut

197 ..Locking member contacts nut

198 ...Utilizing a resilient characteristic of the member, or of a discrete element

199 ....Member comprises key movable laterally into engagement with threaded elements

200 ...Member comprises key movable laterally into engagement with threaded elements

201 ...Member includes plastically deformable portion

202 ..Utilizing a resilient characteristic of the member, or of a discrete element

203 ...With a discrete, resilient element

204 .By locking member coacting with an axially outwardly facing portion of nut

205 ..Member comprises key swingable (e.g., pivotal) into engagement with threaded elements

206 ...Utilizing a resilient characteristic of the key, or of a discrete element

207 ....With a discrete, resilient element

208 .....And key engageable with aligned formations (e.g., grooves) in axially outwardly facing portion of each threaded element

209 ..Member comprises key movable laterally into engagement with threaded elements

210 ...Utilizing a resilient characteristic of the key, or of a discrete element

211 ....With a discrete, resilient element

212 ...Including plastically deformable portion

213 ....Comprising an elongated element divided longitudinally (e.g., a cotter pin)

214 ..Member comprises a screw, and bolt includes a generally axially extending, internally threaded bore for receiving the screw

215 ...With an additional member between screw and axially outwardly facing portion

216 ..And the member including, as a substantial part thereof, an elongated, axially disposed key

217 ...Key coacts with bolt by occupying an axially extending recess formed in the radially outward surface thereof

THREADED BOLT AND NUT AND MEANS FOR COUPLING THEM AGAINST RELATIVE ROTATION

.By locking member coacting with an axially outwardly facing portion of nut

..And the member including, as a substantial part thereof, an elongated, axially disposed key

...Key coacts with bolt by occupying an axially extending recess formed in the radially outward surface thereof

218 ....And includes a portion adapted to extend into a transverse opening provided in the bolt

219 ....And includes a portion adapted to engage a substantial part of the periphery of the bolt

220 ....And includes a region plastically deformable into engagement with the axially outwardly facing portion

221 ..Member interlocks with an axially extending recess or slot in the bolt and a recess in the axially outwardly facing portion of the nut

222 ..Internally threaded locking member (e.g., jam nut)

223 ...Including means associated with at least one of the nuts for restricting rotation therebetween

224 ....Key received in part in each of the nuts

225 .....Including a plastically deformable portion

226 .....Received in axially extending passages or recesses

227 ....Comprising one or more discrete members serving as a pawl and ratchet

228 .....Inherently resilient pawl

229 ....Axially directed, resiliently biased detent means

230 ....Canted element

231 ....With means resiliently biasing the nuts apart

232 ....Side lock

233 .....Integral deformable means

234 .....By a discrete element

235 ......Periphery encompassing means (e.g., a sleeve)

236 ......Including plastic deformation (e.g., bending) of the discrete element

237 ....Having a part of one of the nuts extending into a circular, axially directed recess of the other, and further including, in the region of the recess, formations cooperating to restrict relative rotation

238 .....At least one of the formations comprises a surface eccentric to the longitudinal axis of the nuts

239 ....Including cooperating formations on the axially opposing portions of the nuts

240 .....Comprising teeth of the ramp and buttress type

241 .....Comprising surfaces of a curvilinear nature

242 ....Plastic deformation of at least one of the nuts

243 ....Reversed internal and external threads on one of the nuts

244 ....Oppositely threaded

245 .....Intersecting threads on the bolt

246 ..By thread-gripping locking element

247 ...Resilient grip

248 ....Split ring

249 .....Including structure interfitting within a thread for less than a full turn thereof

250 ...Wire structure

251 ....Helically coiled wire

252 .....Including a free end in nonrotational engagement with the threaded element

253 ...Gripping member includes a tapered section adapted to be axially depressed to cause radial movement of a portion thereof

254 ...Gripping member is moved radially into engagement with the threads

255 ....Including discrete means to move or to lock the gripping member relative to the externally threaded element

256 ...Gripping member is moved tangentially into engagement with the threads

257 .Including material in the nature of (1) a metallic coating, (2) a quantity of fusible metal or (3) a discrete member formed of ductile metal

258 .Including settable material

259 .Comprising a thread lock

260 ..Including a distortable metallic washer or sleeve

261 ...In the nature of a dished washer

262 ..Including a coil spring

263 ..Differential thread means

264 ..Rocking thread section on the externally threaded element

265 ..Including a tapered (e.g., a conical) surface for wedging the internally threaded element against the externally threaded one

266 ...Segmented internally threaded element

267 ....Discrete segments carried within a housing

268 ....Including a discrete, threaded member carrying the tapered surface and threadedly engaging one of the threaded elements

269 .....Engaging a threaded exterior provided on the segmented element

270 ....Including a sleeve or washer type member for carrying the tapered surface and surrounding the segmented element

271 ..Externally threaded element includes an axially extending opening in its free end for receiving an expander member

272 ..Including camming surfaces on the threaded elements or on an additional member

273 ...With a camming member having an eccentrically arranged recess for receiving the internally threaded element

274 ..Having an element, or with a discrete member, adapted to cant the assembly

275 ...With a discrete, canting member (e.g., a washer)

276 ..Having the internally threaded element distorted

277 ...Radially inward distortion

278 ....With discrete means carried by the element for producing the distortion

279 .....Threaded means

	THREADED BOLT AND NUT AND MEANS FOR COUPLING THEM AGAINST RELATIVE ROTATION
	.Comprising a thread lock
	..Having the internally threaded element distorted
	...Radially inward distortion
280	....Of cantilevered segments (e.g., castellated end)
281	....Of circumferentially spaced areas of continuous periphery
282	.....Defining a smooth curving, noncircular thread section (e.g., elliptically shaped)
283	.....Impacted areas
284	......Located on the flats of a polygonally shaped element
285	...Axial distortion
286	....With discrete means carried by the element for producing the distortion
287	....By axially directed impacted areas
288	....Of axially spaced threaded sections
289	.....Coiled spring
290	....Including a region displaceable generally axially relative to another part of the element
291	.....Having at least one region formed by a cut, slot, etc., across at least one sidewall of the element and extending generally radially into the element
292	..Including a longitudinal locking member
293	...Having a toothed surface
294	..Including a radial locking member
295	...Threadedly received in the internally threaded element
296	..Side clutch
297	...Roller
298	...Ball
299	...Spring
300	..Tangential locking member
301	..Elastic gripping action
302	...Elastic insert
303	....Disposed in a counterbore in the internally threaded element
304	....Disposed within an interruption of a threaded surface
305	..Externally threaded element adapted to be compressed radially inwardly
306	...Resilient element
307	..Having threads of different pitch, or a thread of varying pitch
308	..Involving dissimilarities in the sectional configuration of the threads
309	...Resulting in the deformation of one thread by the other
310	....By integral, interference-producing deviations from a standard thread shape
311	.....Located in the vicinity of the crest or the root of the thread
312	..Including means biasing the threads in axially opposed directions
313	.Washer having a deformable portion engageable with a threaded element
314	..Resiliently deformable portion
315	.With a member in the nature of a rotation preventing key movable laterally into engagement with the threaded elements
316	..And utilizing a resilient characteristic of the key, or of a discrete element
317	...With a discrete, resilient element
318	....Comprising a spring of the coiled type
319	..And including a plastically deformable portion
320	...Comprising an elongated element divided longitudinally (e.g., a cotter pin)
321	.With an elongated member in the nature of a rotation preventing key disposed axially of the threaded elements
322	..And utilizing a resilient characteristic of the key, or of a discrete element
323	..And including a plastically deformable portion
324	.Elastic gripping action
325	.Externally threaded element includes an axially extending opening in its free end for receiving an expander member
326	.Pawl and ratchet
327	..Pawl carried by the internally threaded element
328	...Pivoted pawl
329	...Resilient pawl
330	..Washer carried pawl
331	...Resilient
332	.Including teeth of the ramp and buttress type on the axially inwardly facing portion of the internally threaded element
333	.By deformation of a threaded element
334	..Plastic deformation
335	...Of an internally threaded element
336	....Into an interruption in the thread of the externally threaded element associated therewith
337	HEADED FASTENER ELEMENT WITH NUT, WASHER, SECURING MEANS OR CAP
338	.Lap bolt or fastener
339	..Interference fit type
340	.Securing means pivotable about axis transverse to fastener axis, e.g., toggle bolt, etc.
341	..And biasing spring
342	...Spring engaging securing means
343	...Spring at opposite end from securing means
344	..And discrete manual actuating means
345	..And pivoted retention means
346	..Channel shaped securing means
347	.Headed fastener element with securing means and biasing spring
348	..Ball detent securing means
349	..Securing means rotatable about fastener element or rotatably engageable by tool-rotatable headed fastener element
549	...Outwardly extending projection cooperates with socket member having ramp engagement means
550	....Including means providing axial adjustment
551	.....Threaded adjustment
552	....And discrete biasing spring
553	....Similar, opposed ramp surfaces
554	...Helically slotted securing means having cooperating engaging portion on socket member
555	....Through-slot for engagement with crossbar
350	...Securing means rotatable and axially movable, e.g., wear takeup means, etc.
351	.Draw bar or draft key fastener
352	.Metallic resilient securing means
353	..Retainer ring
354	.Wedge-securing means

HEADED FASTENER ELEMENT WITH NUT, WASHER, SECURING MEANS OR CAP
.Wedge-securing means
355 ..And apertured bolt
356 .Penetrating pin securing means
357 ..Longitudinally inserted
358 ...Outwardly deflected
359 ....Bifurcated
360 .Deformable securing means
361 ..Swageable collar
362 ..Securing means deflecting a portion of fastener end
363 ...Plural end legs
364 ....Cotter pin fastener
365 ....Circular deflector
366 .Threaded fastener and nut
367 ..Having stay bolt spacer sleeve
368 ..Having washer
369 ...Including sealing means
370 ....Stay bolt bearing washer
371 .Washer or cap
372 ..And separate attaching or retaining means
373 ..Attachable cap structure
374 ...By screw means
375 ...Crimpable
376 ...Weldable metal
377 ...Moldable
378 EXTERNALLY THREADED FASTENER ELEMENT, E.G., BOLT, SCREW, ETC.
379 .Stay bolt
380 ..Having spherical head
381 ...And telltale bore
382 ..Having telltale bore
383 .Multipart
384 ..Axially adjustable
385 ..Comprising longitudinal side-by-side sections
386 .Pilot end having means enhancing fastening or installation
387 ..Drill tip
388 .Double-ended
389 ..Both ends threaded
390 .Single element having means facilitating or effecting separation
391 ..By fluent pressure
392 .Resiliently flexible
393 .Set screw
394 .Drive screw
395 .Having bore therethrough
396 .Separate head element
397 ..Threadedly attached to shank
398 .Head eccentric with respect to fastener axis
399 .Head having counter-sinking means
400 .Hook head, e.g., J-bolt, etc.
401 .Elongated head, e.g., hanger bolt, etc.
402 .Head driving structure
403 ..Socket or slot
404 ...Orthogonally arranged slots, e.g., Phillips head, etc.
405 ...Opposed open ended plural slots, e.g., spanner, etc.
406 ...Dovetail
407 ...Having driver retaining means
408 ..Frictional engagement
409 ..Wing structure
410 ..Plural diverse driving structures
411 .Thread or shank structure
412 ..Plural threads on single shank
413 ...Of different pitch
414 ..Buttress thread
415 ..Of varying thread pitch
416 ..Lobular thread
417 ..Circumferentially interrupted thread
418 ...By longitudinal slot
419 ....Shank bifurcated by slot extending entirely therethrough
420 ....Inclined slot
421 .....Helically oriented
422 ...By transversely extending bore
423 ..Truncated thread
424 ..Shank structure
425 ...Twisted
426 ...Tapered
427 INTERNALLY THREADED FASTENER ELEMENT, E.G., NUT, ETC.
428 .Including lubricating means
429 .Having cap
430 ..Cap crimped onto nut
431 ..Resiliently retained
432 .Multipart
433 ..Including movable threaded segments
434 ...Moved by fluent pressure
435 .Wing
436 .Thread structure
437 ..Interrupted
438 ..Coil spring
439 IMPACT DRIVEN FASTENER, E.G., NAIL, SPIKE, TACK, ETC.
440 .Having means to facilitate explosive driving
441 ..Discrete guide or centering means
442 .Plural attached fasteners
443 ..Integral strip
444 ..Laterally attached only at head or bridge
445 ..Attached end-to-end
446 .Including integral locking means
447 ..Comprising deformable portion
448 ...Expansible on impact
449 ....Axially collapsible section
450 ..Having means engageable on underside of member being secured by fastener
451 ..Comprising protrusion or recess means on shank
452 ...Longitudinal rib
453 ....Spiral rib
454 .....Defined by twisted shank
455 ...Circumferential rib
456 ...Barb
457 .Multiple prong, e.g., nailing plate, staple, etc.
458 ..Oppositely disposed prongs
459 ...Having plural prongs on one end
460 ...Having identical ends
461 ..Of sheet metal
462 ...Including stiffening means
463 ....Rib
464 .....Entire fastener having corrugations parallel to driving direction
465 ......Having sawtooth penetrating edge
466 ...Prongs cut and formed from body portion
467 ....Plural prongs from single opening
468 .....Including opposed prongs defining mirror image of each other
469 ..Multipart
470 ..Having prongs of different length
471 ..Each prong bevelled from a single side toward its opposite side
472 ...Bevel located on outerside of prong
473 ..Having distinct driving head
474 ...Plural heads
475 ..Having means to limit penetration short of bridge portion
476 ..Having frangible portion
477 .Of sheet metal
478 ..Folded or twisted
479 ..Hollow fastener
480 .Separately attached head
481 .Head having central recess
482 .Plural axially aligned heads

	IMPACT DRIVEN FASTENER, E.G., NAIL, SPIKE, TACK, ETC.
483	.Wire formed head
484	.Domed head
485	.Hook head
486	.Head forms segment of disk
487	.Shank or penetrating end structure
488	..Flat-sided shank
489	...Tapered
490	..Stepped shank
491	..Oval or lobular shank
492	..Angular shank portion
493	..End structure
494	...Pyramidal point
495	...Slotted end
496	...Chisel point
497	...Stepped end
498	...Conical point
499	...Having a curved surface
500	HEADED FASTENER ELEMENT
501	.Having plastically flowable or deflectable end, e.g., rivet, etc.
502	..Plural end legs
503	...Sheet metal type
504	..Solid end type
505	...Stay bolt
506	...Bolt head and end flowable
507	....Domed head
508	.Having resilient securing structure on shank
509	..Concentric ridge or flange
510	...Plural ridges or flanges
511	FASTENER SECURING ELEMENT
512	.Having elastomeric material
513	.Cotter pin
514	..Having deformed resilient middle portion
515	..Having folded back leg
516	.Resilient metallic
517	..Retainer ring
518	...Having gripper holes
519	...Plural radial sectioned
520	..Sheet metal
521	...Circular
522	...Parallel legs, e.g., U-shaped, etc.
523	....Folded leg having fastener aperture or recess
524	.....Plural folds
525	...Having plural longitudinal slits
526	....And slit coincident with element axis
527	....And helically inclined tongues, e.g., speed nut, etc.
528	...Having longitudinal slit coincident with element axis
529	...Having longitudinal slot forming fastener engaging slide
530	..Wire or rod formed
531	WASHER STRUCTURE
532	.Including release means
533	.Including means for retaining washer to fastener
534	.Including antifriction means
535	.Including adjustable thickness means
536	..Wear or lost motion compensating means
537	.Having leveling means
538	..Inclined planar face
539	.Radially positionable
540	..Pivotally hinged sections
541	..Secured by plastic deformation
542	.Sealing
543	.Wire formed
544	.Axially resilient
545	.Corrugated
546	.Spacer
547	..Of folded sheet material
548	MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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900	FASTENER OR FASTENER ELEMENT COMPOSED OF PLURAL DIFFERENT MATERIALS
901	.Core and exterior of different materials
902	..Metal core
903	...Resinous exterior
904	FASTENER OR FASTENER ELEMENT COMPOSED OF NONMETALLIC MATERIAL
905	.Paper or wood
906	.Leather or fabric
907	.Elastomeric
908	.Resinous material
909	FASTENER OR FASTENER ELEMENT COMPOSED OF THERMO-RESPONSIVE MEMORY MATERIAL
910	ANTITAMPER MEANS
911	.One-way drive
912	ANTISPLITTING FASTENER
913	SELF-EXPANDING ANCHOR
914	COATED BOLT
915	BOLT HAVING PACKING JOINT
916	BOLT HAVING TENSION FEATURE
917	NUT HAVING TENSION FEATURE
918	THREADLESS NUT
919	SCREW HAVING DRIVING CONTACTS
920	STAPLE
921	MULTIPLE-PRONGED NAIL, SPIKE OR TACK
922	NAIL, SPIKE OR TACK HAVING LOCKING DEVICE
923	NAIL, SPIKE OR TACK HAVING SPECIFIC HEAD STRUCTURE
924	COUPLED NUT AND BOLT
924.1	.Deformed
925	.Top stop
926	.Positive lock
927	..Side
928	..Thread gripper
929	.Thread lock
929.1	..Coil spring
929.2	..Distorted washer
930	..Flowing metal or settable material
931	..Superposed nuts
932	...Oppositely threaded
933	....Key or pawl locked
934	.....Side locked
935	..Cam or cone grip
935.1	...Cam
936	..Canted nut
937	..Distorted nut
937.1	...Predistorted thread pitch or diameter
937.2	...Post-distorted thread pitch or diameter
938	..Distorted thread
939	..Longitudinal key
940	..Radial key or gib
941	..Side clutch
941.1	...Spring
941.2	...Roller
941.3	...Ball
942	..Tangential key
943	.Flexible washer
944	.Flexible key
945	.Cross key
946	..Spring-seated
947	.Elastic-gripping action
948	.Longitudinal key
949	.Rachet and bolt-carried pawl
950	.Rachet and nut-carried pawl
951	..Flexible
952	..Pivoted
953	.Washer-carried pawl
954	.Wedged slotted bolt
955	LOCKED BOLTHEAD OR NUT
956	.Automatic base clutch
957	..Biting tooth

	LOCKED BOLTHEAD OR NUT
	.Automatic base clutch
	..Biting tooth
958	...Coiled washer
959	...Bolt- or nut-carried
960	..Friction
961	..Pawl and ratchet
962	...Bolthead or nut-carried pawl
963	...Yielding interlocking washer
964	..Detent
965	.With retainer
966	..Multiple (i.e., gang type)
967	..Deformable bolthead or nut
968	..Deformable base member
969	..Deformable retainer
970	..Resilient retainer
971	..And side lock
972	.Distorted
973	.Gravity bolthead, nut or washer
974	.Side lock
975	..Rotatable washer
976	...Bent tongue-locked
977	...Pawl-locked
978	..Pawl and ratchet
979	..Resilient
980	...Automatic
981	....Coiled washer
982	....Spring-tongued washer plate
983	..Inelastic tongue
984	..Longitudinal
985	...Bolthead- or nut-held
986	....Reversed bolthead or nut
987	...Side pin
988	...Spike-held locking plate
989	...Swinging
990	...Washer tongue-held
991	..Transversely sliding
992	...Key, plate, or bar
993	....bolthead- or nut-held
994	....Sliding washer
995	..Transversely swinging
996	.Transverse base-locking key
997	.Longitudinal fastener
998	WITH POSITIVE BOLT LOCK
999	WITH RETAINER (E.G., TETHER)
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	DIGESTS
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DIG 1	THREAD FORMING, REFORMING, OR CLEANING
DIG 2	TEMPERATURE MODIFICATION
DIG 3	UTILIZING FLUID PRESSURE

CLASS 412 BOOKBINDING: PROCESS AND APPARATUS

1 PROCESS
2 .Of making multiple books from a single book
3 .Of making a case
4 .Of applying a cover to a book
5 ..Casing in
6 .Of edge fastening
7 ..Marginally perforated sheet
8 .Of adhesive binding
9 APPARATUS
10 .Padding press
11 .With control means responsive to sensed condition
12 ..And randomly actuated stopping or disabling means
13 .With programmed, cyclic, or time responsive control means
14 .With measuring, testing, or inspection means
15 .Repair means
16 .With cutter
17 .Case maker
18 .Finishing apparatus
19 ..Cover applier
20 ...And means simultaneously binding edge
21 ...Means for casing-in
22 ..Presser or creaser
23 ...Press board
24 ..Jacketing means
25 .Book working apparatus
26 ..Reinforcement applying means
27 ...Lining or crash applying means
28 ..End sheets attaching means
29 ..Smashing or nipping means
30 ..Backing means
31 ..Headbanding means
32 ..Free edge finishing means, e.g., marbling, gilding, etc.
33 .Edge binding apparatus
34 ..Deformable strip applier
35 ..Sewing means
36 ..Lace, ribbon, or adhesive tape applier
37 ..Adhesive applier
38 ..Perforated sheet binder
39 ...Wire comb applier
40 ...Plastic comb applier
41 ....And heat sealer
42 ...Singular ring or ringlike element applier
43 ...Singular or postlike element applier

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CROSS-REFERENCE ART COLLECTIONS

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900 ACTIVATING PREVIOUSLY APPLIED ADHESIVE
901 PRESSURE SENSITIVE ADHESIVE
902 HEATING AND PRESSING

CLASS 413 SHEET METAL CONTAINER MAKING

DECEMBER 1990

1 METHOD
2 .Assembling receptacle with closure
3 ..Including work feeding
4 ..End joint forming
5 ...Metal to nonmetal
6 ...Rolling
7 ...Applying sealant
8 .Forming or treating metallic closure
9 ..By joining with preformed gasket or liner
10 ..Forming means to deter or detect tampering (e.g., child proof cap)
11 ..Reshaping previously used crown cap
12 ..Fabricating or assembling member having frangible portion (e.g., tear tab forming)
13 ...Forming user lip guard
14 ...Assembling pull tab (e.g., ring) to tear tab
15 ...Forming discontinuous frangible fracture line (e.g., push-in type with hinged tear tab)
16 ....Having pull tab and hinged tear tab
17 ....Scoring to form fracture line
18 ..Coating
19 ...Applying liquid to form gasket or liner
20 ....By spraying
21 ..Solder applying
22 ..Making or applying pouring spout or conical neck
23 ..Forming thread
24 ..Forming lug (e.g., twist-off cap)
25 .Making pull tab-gripping means (ring end)
26 APPARATUS APPLYING CLOSURE TO RECEPTACLE
27 .Seamer
28 ..No workpiece no seam type
29 ..With lubricating means
30 ..Progressive seaming stations
31 ..Roller die
32 ...Irregular can
33 ....Pattern cam
34 ...Gasket or seal applying means
35 ...Lid feeding means
36 ...Rectilinear movement of seam head
37 ...Can holder or lock
38 ...Portably mounted or attached seamer
39 ...Hand actuated
40 ...Roller spreader
41 ....Cam actuated
42 ..Fluted chuck
43 ..Reciprocating die
44 ..Geneva drive mechanism
45 .Closure or receptacle feed
46 ..Magnetic feed
47 ..Storage means (e.g., magazine)
48 ...Dropper type
49 ....And pusher
50 ....And turret
51 ...Including pusher
52 ..Closure and receptacle feed
53 APPARATUS FORMING POURING SPOUT OR ASSEMBLING SPOUT WITH CONTAINER
54 APPARATUS UNITING KEY TO CONTAINER OR CLOSURE
55 APPARATUS SCORING CONTAINER BODY
56 APPARATUS TO FORM CONTAINER CLOSURE (LID)
57 .Having means to apply solid solder
58 .Having means to apply seal or liner
59 ..Having heating means
60 ..By means contacting closure with liquid
61 ...By spraying
62 ..And metal deforming means
63 ..With seal cutting means
64 ...And means to feed a web of material
65 ..Means ejecting seal or closure
66 .Having means uniting pull tab to closure
67 .Having means forming frangible zone on closure
68 ..By means inserting ripper means into closure
69 APPARATUS FOR CAN BODY MAKING
70 .Blank feed
71 ..With bending
72 ...With seaming
73 ....With body deforming (beading, flanging)
74 ..With seaming
75 ...With body deforming
76 ..Body deforming
77 .With side seaming
78 MISCELLANEOUS

CLASS 414 MATERIAL OR ARTICLE HANDLING

DECEMBER 1990

1	ARTICLE MANIPULATOR MOVES ANALOGOUS WITH HUMAN HAND, FINGER, OR ARM MOVEMENT
2	.Motion of hand, finger, or arm member multiplied or reduced in its transmission to article manipulator means
3	.Having means to transmit motion through an imperforate barrier
4	.Electric or fluid motor drive for manipulator
5	..Having means to transmit feedback signal from manipulator means to hand, finger, or arm
6	..For grip force amplification
7	.Having flexible motion transmissiion means
8	.Having sealing or radiation shielding means
9	HUMAN BODY OPERATED EATING AID
10	APPARATUS FOR MOVING MATERIAL TO A POSITION IN THE ERECTION OR REPAIR OF A BUILDING
11	.Flat wall or ceiling member manipulating means
12	.Box-like building module manipulating means
13	LAUNDRY HANDLING DEVICE
14	STOCK PULLING OR PUSHING
15	.With means ejecting stock remnant
16	.Witn additional diverse motion of stock
17	.With fluid pressure actuated pushing or pulling means
18	.Stock end face pushers
19	..For sheet stock
20	.Sheet stock lead end pullers
21	WITH WEIGHING
22.51	WELL PIPE OR ROD RACKING MECHANISM
22.52	.With slope change
22.53	..For nonvertical drilling
22.54	..Horizontal to/from vertical
22.55	...Boom pivoting about horizontal axis
22.56	....Pivoting derrick
22.57	...Guided skate or pusher
22.58	...Pipe or rod guide
22.59	..Guided skate or pusher
22.61	..Pipe or rod guide
22.62	.Horizontal rack
22.63	.Vertical rack
22.64	..Compensating for support shift, e.g., ship roll
22.65	..Pivotal carriage
22.66	...Carousel
22.67	...Pivotal derrick
22.68	..With laterally guided pipe or rod support
22.69	...On inclined derrick mounted track
22.71	...Both upper and lower pipe or rod holding and guiding means
23	POLE OR TREE HANDLERS
24	GLASS CYLINDERS
24.5	ROUND HAY BALE HANDLING
24.6	.Unrolling
25	HAY DISTRIBUTORS
26	TOBACCO STRINGERS OR UNSTRINGERS
27	APPARATUS FOR STRINGING ARTICLES ON A SUPPORT IN ABUTTING RELATION
788	APPARATUS FOR MOVING INTERSUPPORTING ARTICLES INTO, WITHIN OR FROM FREESTANDING, ORDERLY LAYERED, OR MUTUALLY STABILIZING ORDERLY GROUP
788.1	.Stack forming apparatus
788.2	..Stacking tapered or nestable articles
788.3	...And varying orientation of tapered article in stack
788.4	..Takes articles for stack from another group
788.5	...And turns article about horizontal axis
788.6	...And turns plural articles as a unit about vertical axis
788.7	...And transport articles through working, treating, or inspecting station located therebetween
788.8	..Including separate unstacking means
788.9	..With means vertically aligning stack being formed
789	...And acting as discharge gate
789.1	...Powered means (e.g., jogger, etc.)
789.2	..Forms layered stack or row and then upends it
789.3	...Tiers or layers formed and sequentially added to stack prior to upending
789.4	....Includes means for crossing articles in layer
789.5	..Inserts separator into stack
789.6	..Plural article sources
789.7	..Includes means on or linked with transporting vehicle for forming and discharging stack
789.8	..Creates single stack by juxtaposing separately formed tiers
789.9	..With means for removing completed stack from stacking location
790	...Interfingers with stack support moving vertically relative to removing means
790.1	....Article received and stack discharged at interfingering location
790.2	...Includes stack gripping device
790.3	...Pusher
790.4	...Includes carrier having distinct supports each successively receiving a stack thereon
790.5	...Includes gravity unloaded movable support
790.6	....And conveyer for receiving unloaded stack
790.7	...Includes driven conveyor whereon continuously supported stack is formed
790.8	...With temporary support for incoming articles during discharge of stack
790.9	..Stacks articles on different supports
791	...And combines into single stack
791.1	...Includes conveyor for feeding articles to sequentially formed stacks
791.2	..Offsets or crosses adjacent articles in single article wide stack
791.3	..Articles inverted in adjacent levels or layers
791.4	...Layers
791.5	..Formed with sloped or stepped side
791.6	..Sequentially forms or adds completed layers
791.7	...Offsets circular articles within adjacent rows of layer
791.8	...Leaves void between articles in layer
791.9	....To facilitate insertion of handling means
792	...Crosses articles in adjacent layers
792.1	....Includes swingable pusher for turning article shoved to layer
792.2	....With rotating stack support
792.3	.....Rotated between addition of completed layers
792.4	....Turns completed layer about vertical axis before stacking
792.5	...Offsets articles within parallel adjacent superposed rows
792.6	...Adds rows of articles to layer
792.7	..Positions lowest article of stack first

APPARATUS FOR MOVING INTERSUPPORTING ARTICLES INTO, WITHIN OR FROM FREESTANDING, ORDERLY LAYERED, OR MUTUALLY STABILIZING ORDERLY GROUP

.Stack forming apparatus

..Positions lowest article of stack first

792.8 ...Includes horizontally shiftable, article elevating device

792.9 ....With article gripping means

793 ...Includes suction-type article gripping means

793.1 ....And endless belt for transporting

793.2 ...Includes magnetic-type article gripping means

793.3 ....And endless belt for transporting

793.4 ...Includes support vertically alignable with stack then shiftable from beneath article

793.5 ....Support carried or formed by endless belt conveyer

793.6 .....With belt and article moving vertically together above discharge

793.7 ......And additional noncoaxial endless belt coacting therewith to support article above discharge

793.8 ....Support adjust vertically as height of stack increases

793.9 ....Support revolves around central axis during shifting and return

794 ....Support swings during shifting and return

794.1 ....Support travels vertically spaced paths during shifting and return

794.2 ....Plural coacting supports shifting in opposite directions

794.3 ....And movable stop engaging article during shifting of support

794.4 ...Includes endless belt for delivering

794.5 ....Having discharge vertically shiftable

794.6 ...Having discharge vertically shiftable as stack grows

794.7 ...Includes pusher conveyer for delivering

794.8 ...Includes roller conveyer for delivering

794.9 ..Positions highest article of stack first

795 ...Includes rotary deliverer

795.1 ....Coacting screws

795.2 ...Includes means for raising highest article and lowering it upon newly delivered article

795.3 ...Includes means raising article up to stack

795.4 .Unstacking apparatus

795.5 ..Utilizes fluid blast to remove article

795.6 ..Unstacking tapered or nestable articles

795.7 ..With means vertically aligning stack

795.8 ..With means replacing depleted stack

795.9 ..Removes complete tier from multitier stack

796 ..Separates stack into smaller stacks

796.1 ...Removes smaller stack from bottom

796.2 ..Removes layer as unit

796.3 ...And changes position or orientation of articles within layer

796.4 ..With means for reorienting article after unstacking

796.5 ..Removes highest article first from stack

796.6 ...With means offsetting highest article prior to removal

796.7 ...With stack elevating means

796.8 ....Pusher separates article from stack after elevation

796.9 ...Includes article gripping device

797 ....By suction

797.1 ....By magnetic force

797.2 ...Includes endless belt article separator

797.3 ...Includes rotary article separator

797.4 ..Removes lowest article first from stack

797.5 ...Includes means for elevating remainder of stack therefrom

797.6 ...Includes endless belt article separator

797.7 ...Includes rotary article separator

797.8 ...Includes article separator with gripping device

797.9 ...Includes pusher article separator

798 ...Includes movable stack support for gravity unloading article

798.1 ....And means for temporarily holding remainder of stack

798.2 .Positions intersupporting article into row

798.3 ..Takes article therefor from another spaced group

798.4 ..Tapered or nestable articles positioned

798.5 ..Includes revolving or swinging handler

798.6 ...And pusher conveyer for delivering

798.7 ..Includes pusher conveyer for delivering

798.8 ..Includes nonpowered guide for delivering

798.9 .Removes intersupporting article from row

111 VEHICLE-CARRIED BALE ACCUMULATOR

132 HAY STACK SHAPERS

133 COAL STORAGE TYPE

137.1 MARINE LOADING OR UNLOADING SYSTEM

137.2 .Loading or unloading aircraft under marine conditions

137.3 ..Underwater loading or unloading

137.4 .With weather cover

137.5 .Marine vessel to/from well

137.6 .Marine vessel to/from air vessel

137.7 .Marine vessel to/from water

137.8 ..Marine vessel to/from lighter to/from water

137.9 .Marine vessel to marine vessel

138.1 ..With means to effect relative vertical movement of marine vessel

138.2 ..With means to compensate for relative marine vessel movement

138.3 ...Including means to sense position of marine vessel

138.4 ...Line tension control

138.5 ..Marine vessel to/from lighter to/from marine vessel

138.6 ...By use of endless belt conveyer

138.7 ..Marine vessel to/from lighter to/from shore

138.8 ...With marine vessel holding or moving device

138.9 ...Serial marine vessels supporting conveyer

139.1 ...By use of endless belt conveyer

139.2 ..One marine vessel towing the other

139.3 ..By use of endless belt conveyer

139.4 .Marine vessel to/from shore

139.5 ..Personnel loading or unloading

139.6 ..With means to compensate for marine vessel movement

139.7 ...Including means to sense vertical position of marine vessel (e.g., draft)

139.8 ..With marine vessel holding or moving device

MARINE LOADING OR UNLOADING SYSTEM
.Marine vessel to/from shore
139.9 ..Marine vessel to/from land or rail vehicle distinct from system
140.1 ...By use of marine vessel to/from shore gangway for land or rail vessel
140.2 ...By use of endless belt conveyer
140.3 ...By use of laterally moving crane
140.4 ...By use of swinging crane
140.5 ...By use of conveyer chute
140.6 ..By lifting marine vessel or by changing water level
140.7 ..By use of screw conveyer
140.8 ..By use of endless belt conveyer
140.9 ...For "bulk" (e.g., granular) cargo
141.1 ....Including orbiting bucket
141.2 ....With grab bucket
141.3 ..By use of laterally moving crane
141.4 ...Having swinging portion
141.5 ...On marine vessel
141.6 ..By use of swinging crane
141.7 ..By use of hoist line
141.8 ..By use of conveyer chute
141.9 .By use of screw conveyer on marine vessel
142.1 .By use of endless belt conveyer on marine vessel
142.2 ..For "bulk" (e.g., granular) cargo
142.3 ...Belt extending parallel to marine vessel beneath cargo hold
142.4 ....Sequential endless belts
142.5 ...Including orbiting bucket
142.6 .By use of laterally moving crane on marine vessel
142.7 .By use of swinging crane on marine vessel
142.8 .By use of hoist line
142.9 ..Scoop or scraper on marine vessel
143.1 .By use of conveyer chute
143.2 .Stowage arrangement on marine vessel
146 CHARGING OR DISCHARGING MEANS ADAPTED FOR USE IN A RADIOACTIVE ENVIRONMENT
147 CHAMBER OF A TYPE UTILIZED FOR A HEATING FUNCTION AND MATERIAL CHARGING OR DISCHARGING MEANS THEREFOR
148 .With alarm, indicator, or signal
149 .Driven, rotatable chamber
150 .Including driven device and/or inclined flow path to carry or convey material into, within, and out of chamber
151 ..In helical or tortuous path
152 ..With means outside of chamber to carry or guide material to, or from, device or path
153 ..With driven means within chamber to manipulate or transfer material
154 ..Including track-guided, wheeled vehicle
155 ...Having means to support material suspended therebelow
156 ..Including reciprocating or vibratory conveyer
157 ..Including endless conveyer (e.g., apron, pusher type, etc.)
158 ..Including screw, rotary, or rotating pusher, conveyer
159 ..Including roller conveyer
160 .Charging of chamber
161 ..With control system responsive to condition in chamber
162 ..Through plural ports in top of chamber
163 ...From vehicle-carried hopper located above port
164 ....With closures for ports and means on vehicle to manipulate them
165 ..By depositing material onto surface of glass melt
166 ...With pushing device to move material therealong
167 ..By driven device for transporting material to a stationary, at least in part, accumulating means for subsequent release into chamber by gravity
168 ...Receptacle moved back and forth along inclined way (e.g., skip)
169 ....Accumulating means includes serially arranged closures
170 .....Each comprising bell of bell and hopper type accumulating means
171 ...Conveyer
172 ..By driven device for transporting material to and/or into, or into and within, chamber
173 ...Plural, successive, driven devices
174 ....Thrower and at least one feeder conveyer therefor
175 .....Including screw conveyer
176 .....Including pusher conveyer
177 ....Two or more conveyers, one traversing open top, or opening in top of, chamber
178 ...Receptacle moved back and forth along inclined way (e.g., skip)
179 ...Movably mounted conveyer traverses open top, or opening in top of, chamber
180 ...Including apparatus to advance a material-supporting element to a point within chamber, release material, and retract element
181 ....With driven means to eject material from element
182 ....Element comprises tiltable, material underlying support
183 .....Receptacle separable from apparatus (e.g., for refilling)
184 .....Receptacle tiltable about axis parallel to direction of apparatus advance
185 ....Element comprises receptacle having bottom outlet
186 ....Element comprises grab
187 ...Material accumulating and holding structure, and driven conveyer therein serving to move (e.g., eject) material from structure to chamber
188 ....Including wheeled carriage for supporting the structure
189 ....Driven conveyer comprises rotatable, pocketed gate
190 ....Screw conveyer
191 ...Traversing hoist having material-underlying support or material attracting or gripping means
192 ...Carrier-mounted, tiltable receptacle
193 ...Thrower
194 ....Reciprocating or oscillating
195 ....Rotary
196 ...Conveyer
197 ....Screw
198 ....Reciprocating pusher or reciprocating conveying surface
199 ..By material supporting structure movable, or having a movable component, to release material into chamber by gravity
200* ...Including serially arranged closures
201 ....At least one comprising bell of bell and hopper type supporting structure
202 .....With means to improve seal between mating surfaces

	CHAMBER OF A TYPE UTILIZED FOR A HEATING FUNCTION AND MATERIAL CHARGING OR DISCHARGING MEANS THEREFOR
	.Charging of chamber
	..By material supporting structure movable, or having a movable component, to release material into chamber by gravity
	...Including serially arranged closures
	....At least one comprising bell of bell and hopper type supporting structure
203	.....Having bell and/or hopper mounted for rotation
204	...Bell and hopper
205	....With means to distribute material after release from structure
206	...With means to distribute material after release from structure
207	...Comprising a tiltable material containing member
208	..By inclined flow path
209	.Discharging of chamber by driven device
210	..With means beyond chamber exit to move or guide material discharged therefrom by the device
211	...Means comprises endless or rotary conveyer
212	...Means comprises portable (e.g., vehicle mounted), material receiving chute
213	..Device comprises screw conveyer
214	..Device comprises pushing or pulling mechanism
215	...Mechanism repositionable for serving plural chambers
216	.Discharging of chamber by gravity, and means beyond exit thereof to guide, move, or stop material
217	APPARATUS FOR MOVING MATERIAL BETWEEN ZONES HAVING DIFFERENT PRESSURES AND INHIBITING CHANGE IN PRESSURE GRADIENT THEREBETWEEN
218	.Including screw conveyer
219	.Including trap chamber having horizontal axis of rotation
220	..With means for changing pressure in trap chamber
221	.Including serially arranged valves in path having a vertical component (e.g., airlocks)
222	APPARATUS FOR CHARGING A LOAD HOLDING OR SUPPORTING ELEMENT FROM A SOURCE, AND MEANS FOR TRANSPORTING THE ELEMENT TO A WORKING, TREATING, OR INSPECTING STATION
223	.Supply source includes member capable of 360 degrees revolution
224	.Supply source includes a chute
225	.Load holding or supporting element includes gripping means
226	..Including pivoted jaw
227	APPARATUS PARTICULARLY ADAPTED FOR CHARGING OR DISCHARGING A FACILITY COMPRISING ONE OR MORE SITES FOR THE PARKING OF WHEELED VEHICLES
228	.Facility includes structure (e.g., ramp, angularly related successive locations for a vehicle, etc.) necessitating self-propellability or steerability of vehicle
229	..Upwardly inclined, pivotable parking site for receiving driven vehicle
230	...Caused to pivot by advancing vehicle
231	.With control system responsive to changeable operating instructions
232	.With means to sense condition of site
233	.Including one or more movable sites
234	..Vehicle assigned to particular supporting member (e.g., platform, dolly, cage, etc.) having some degree of independence either as to means, time or direction of movement
235	...Supporting member separable from endless, member-transporting carrier, or disengageable from endless drive means, and movable away therefrom for receiving, discharging or storing vehicle
236	...Plurality of supporting members moved in recirculating fashion by succession of driving devices
237	....Path of moving member describes generally rectangular loop
238	.....Successive devices each include endless, member-driving element (e.g., belt, cable, chain, etc.)
239	...One or more separate supporting members and means to impart independent, linear or partly linear, movement thereto
240	....Member moving from particular location to discharge and/or receive vehicle, and returning thereto
241	...With means to transfer vehicle to or from supporting member
242	..On driven, plural-site carrier initially receiving vehicle
243	...With loading means, external to carrier, at facility entrance
244	...Serving also movable site on subsequent driven carrier, or fixed site
245	....By moving linearly in a horizontal direction
246	.....And moving vertically (e.g., laterally shiftable elevator)
247	....By moving linearly in vertical direction or orbiting in vertical plane
248	.....Endless carrier having sites attached thereto (e.g., suspended therefrom)
249	...Moving linearly in vertical direction or orbiting in vertical plane
250	....Revolving about single, horizontal axis
251	....Endless carrier having sites attached thereto (e.g., suspended therefrom)
252	.With vehicle storage or retrieval system responsive to manual designation of destination
253	.With means to transfer, or facilitate transfer of, vehicle from carrier to site or vice versa
254	..Including sets of intermeshing support elements having relative vertical movement
255	..By exerting upward, in addition to generallly horizontal, force
256	...And forming sole support for vehicle
257	..Complementary, driven, vehicle-supporting conveyers on carrier and site
258	..Tiltable or inclined means for supporting vehicle on carrier or site
259	..By exerting generally horizontal force
260	...Comprising component of carrier having both horizontal and vertical paths of travel
261	.Carrier-facility-site relationship
262	..Route to site utilizes plural carriers

APPARATUS PARTICULARLY ADAPTED FOR CHARGING OR DISCHARGING A FACILITY COMPRISING ONE OR MORE SITES FOR THE PARKING OF WHEELED VEHICLES
.Carrier-facility-site relationship
263 ..Sites arranged radially of carrier rotatable in whole or in part
264 ..Sites arranged in superposed, longitudinal rows and in confronting relationship to carrier in intervening aisle
265 GUIDED, WHEELED DEVICE FOR TRANSPORTING MAIL AND EXTERNAL MEANS COOPERATING THEREWITH FOR LOADING OR UNLOADING THE DEVICE
266 PLURAL, STATIC STRUCTURES FOR SUPPORTING DISCRETE LOADS AND CHARGING OR DISCHARGING MEANS THEREFOR
267 .Load-underlying members (e.g., racks, receptacles (or a compartmented receptacle), shelves, troughs, etc.)
268 ..With means for selectively charging a plurality of receptacles from a single source, or selectively discharging a plurality of receptacles to a single destination
269 ...Charging a plurality of receptacles
270 ....Condition responsive
271 ....By driven conveyer having gated discharging locations spaced therealong
272 ....By conveyer movable (e.g., pivotable) to reposition outlet thereof
273 ..With control system responsive to changeable operating instructions
274 ...With means on charging or discharging means to determine status of member
275 ...With means to detect obstruction and alter movement of charging or discharging means
276 ..Inclined members
277 ..Charging or discharging means includes load sustaining surface and device to transfer load, with horizontal component of movement, from or to surface or member
278 ...Device comprises one or more conveyers of driven roller or endless apron type
279 ...Device includes self-powered, track-guided car
280 ...Device includes push-pull mechanism
281 ..Charging or discharging means includes elevating device, movable in horizontal direction (e.g., portable), having load-sustaining surface
282 ...Including additional means to move surface horizontally relative to device
283 ....Pivotably or rotatably
284 ...With detachably associated auxiliary carrier for transporting device during portion of its horizontal travel
285 ..Charging or discharging means comprises plural endless conveyers or plural runs of single endless conveyer
286 ..With load-supporting pallet
287 STATIC RECEPTACLE OF A MATERIAL CONDITIONING TYPE AND MEANS TO MOVE, OR FACILITATE MOVEMENT OF, MATERIAL TO, WITHIN, OR FROM THE RECEPTACLE
288 STATIC RECEPTACLE AND MEANS FOR CHARGING OR DISCHARGING, OR FACILITATING THE CHARGING OR DISCHARGING OF, THE RECEPTACLE
289 .With alarm, indicator, or signal
290 .Receptacle contains liquid in which charge is submergibly sealed
291 .With means to handle (e.g., recirculate, remove, etc.) dust
292 .With means to seal receptacle in vicinity of entrance for charging or discharging means
293 .Charging or charge-distributing means
294 ..Condition responsive
295 ...Position of charging means controlled by level of material in receptacle
296 ...Drive means of charging conveyer controlled by level of material in receptacle
297 ..With means to ream or cut, or with collapsible means to form, vertical discharge passage in material during charging
298 ..Serving also to discharge receptacle
299 ..Terminal portion of means comprises gravity flow path (e.g., chute)
300 ..Having charge distributing means of driven type
301 ...Rotary type
302 ....Having one or more conveyers rotatable about a vertical axis at an end thereof
303 ..Charging a static receptacle by gravity flow from a portable load carrier
304 .Nongravity discharging means
305 ..Including at least one discharge assistant of the compound motion type
306 ...Having compound motion assistant located proximate to bottom of receptacle and displaceable generally parallel thereto
307 ....Condition responsive
308 ....Assistant separable from receptacle
309 ....Pivotably displaceable assistant and member for shielding its fixed end
310 ....Comprising screw conveyer
311 .....Including means for loosening packed material
312 .....Having receptacle-reacting element of displaceable-movement drive means located on conveyer
313 ...Having compound motion assistant operating on top of material
314 ....Including wall cleaning means
315 ....Condition responsive
316 .....To maintain material surface horizontal
317 ....Route of material being discharged includes vertical segment through remainder of charge
318 ....With conveyer extending to discharge opening in sidewall of receptacle
319 ....Screw-type pickup conveyer
320 .....Including plural screw elements
321 .....Including means for loosening packed material
322 ....Means for displacing assistant involves driven, wheel-like, support member rolling on surface of material
323 ..Condition responsive
324 ..Including flail
325 ..Including one or more driven conveyers located within or partly within receptacle for making initial pickup of material

STATIC RECEPTACLE AND MEANS FOR CHARGING OR DISCHARGING, OR FACILITATING THE CHARGING OR DISCHARGING OF, THE RECEPTACLE
.Nongravity discharging means
..Including one or more driven conveyers located within or partly within receptacle for making initial pickup of material
326 ...At least one of screw type
327 ...At least one of endless type
328 .Gravity discharge of a gated, static receptacle to one or more vehicle-mounted receivers
329 ..Located on moving vehicle
331 MOVABLE RACK HAVING SUPERPOSED, CHARGE-SUPPORTING ELEMENTS, AND EXTERNAL MEANS FOR CHARGING OR DISCHARGING THE ELEMENTS
332 RECEPTACLE HAVING CHARGING OR DISCHARGING MEANS AND ADAPTED FOR RELOCATION FROM ONE TO ANOTHER OF A PLURALITY OF SITES OF INTERIM USE
333 LOADING OR UNLOADING A RAILWAY CAR BY UTILIZING THE TRACTOR OF A TRACTOR-TRAILER, LOAD-TRANSPORTING TYPE VEHICLE TO MANEUVER THE TRAILER, OR A PART THEREOF, ONTO OR OFF THE CAR
334 MOVING, WHEELED, LOAD-TRANSPORTING TYPE VEHICLE AND LOADING OR UNLOADING DEVICE THEREFOR, SUPPORTED AT LEAST IN PART INDEPENDENTLY OF THE VEHICLE AND TRAVELING THEREWITH DURING TRANSFER OF LOAD THEREBETWEEN
335 .Loading device having capability for controlling direction of output therefrom
336 .Suspendedly supported device
337 WHEELED, LOAD-TRANSPORTING TYPE VEHICLE UTILIZES ITS UNINTERRUPTED, FORWARD MOTION TO CAUSE AN EXTERNAL, LOAD-ENGAGING STRUCTURE TO REMOVE ITS LOAD
338 WHEELED, LOAD-TRANSPORTING TYPE VEHICLE UTILIZES ITS UNINTERRUPTED, FORWARD MOTION TO CAUSE AN EXTERNALLY SUPPORTED LOAD TO BE TRANSFERRED TO IT
339 WHEELED, LOAD-TRANSPORTING TYPE VEHICLES FORMING A TRAIN, AND LOADING OR UNLOADING MEANS THEREFOR, LOCATED AT LEAST IN PART THEREON
340 WHEELED, LOAD-TRANSPORTING TYPE VEHICLES AND MEANS FOR TRANSFERRING, OR ENABLING TRANSFER OF, LOAD FROM ONE VEHICLE TO ANOTHER
341 .By additional load-supporting vehicle for moving with load from one load-transporting type vehicle to the other
342 ..Additional vehicle comprises overhead traversing hoist
343 .With means on each vehicle cooperating to effect, or facilitate, transfer of load
344 .With driven load engaging device, supported at least in part externally of the vehicles, for moving load therebetween
345 .Means is confined to one of the vehicles
346 ..Means comprises tiltable load-supporting portion
347 ..Means comprises elevatable load-supporting portion traveling in path including vertical, rectilinear movement
348 ...Having portion suspended from vehicle on overhead way
349 WHEELED, LOAD-TRANSPORTING TYPE VEHICLE HAVING DRIVEN MEANS THEREON FOR REPOSITIONING LOAD SUPPORTING PORTION OF VEHICLE TO CAUSE OR FACILITATE MOVEMENT OF LOAD TO OR FROM AN EXTERNAL COOPERATING MEANS
350 .Load supporting portion pivotable about horizontal axis
351 .Cooperating means comprises or includes a conveyer
352 WHEELED, LOAD-TRANSPORTING TYPE VEHICLE HAVING DRIVEN MEANS THEREON FOR ENGAGING AND MOVING LOAD HORIZONTALLY, OR WITH HORIZONTAL COMPONENT, TO OR FROM AN EXTERNAL COOPERATING MEANS
353 .Cooperating means comprises or includes a conveyer
354 WHEELED, LOAD-TRANSPORTING TYPE VEHICLE AND EXTERNAL MEANS FOR SUPPORTING VEHICLE IN TOTO AND REORIENTING IT INTO LOAD-RELEASING ATTITUDE
355 .With driven carrier for receiving released load
356 ..Endless-type conveyer
357 .Vehicle of rail-guided type and track section having rails configured to tilt or invert vehicle as result of moving thereonto or progressing therealong
358 .Vehicle-holding member rollable along underlying support (i.e., axis of pivot of vehicle travels laterally)
359 .Vehicle-holding framework rotatable about fixed axis passing through framework and parallel to longitudinal axis of vehicle
360 ..Including movable element to clamp vehicle to framework
361 ...With rotation responsive moving means
362 .Pivotably movable structure, at least initially in underlying relation to vehicle
363 ..With means to agitate vehicle or its load
364 ..With means for shifting axis of pivot or tilt of structure in vertical direction
365 ...With means to affect exit of load from vehicle
366 ...Axis of pivot parallels longitudinal axis of vehicle
367 ..With means to retard or stop vehicle approaching structure
368 ..With means to guide departing load toward vehicle exit
369 ..With means to operate vehicle-mounted closure member
370 ..With nonaligned paths for approach and departure of vehicle
371 ..Axis of pivot or tilt of structure parallels longitudinal axis of vehicle thereon
372 ...With movable element to clamp vehicle to structure
373 LOAD-TRANSPORTING TYPE VEHICLE AND EXTERNAL MEANS COOPERATING IN THE LOADING OR UNLOADING THEREOF
374 .Means decelerates moving, wheeled vehicle, load continues to move and leaves vehicle
375 .Means agitates, shakes or vibrates wheeled vehicle or load therein to loosen load for departure from vehicle
376 .Involving movement of load by gravity from wheeled vehicle

LOAD-TRANSPORTING TYPE VEHICLE AND EXTERNAL MEANS COOPERATING IN THE LOADING OR UNLOADING THEREOF
.Involving movement of load by gravity from wheeled vehicle
377 ..Means initiates unloading of vehicle of type having load body, or other load holding means, suspended therefrom
378 ...Bottom unloading body
379 ....Bucket-like body having horizontal, reciprocable movement, and flexible strand means for driving it in at least one direction
380 .....Flexible strand means serves also as initiating means
381 ...Tilting body
382 ....About axis parallel to direction of vehicle travel
383 ..Means cooperates with motion of vehicle to reorient load body, relative to wheels, into load releasing attitude
384 ...By pivoting body about axis parallel to longitudinal axis of vehicle to unload from side
385 ..Means comprises driven device for raising one end of vehicle upwardly relative to other end thereof
386 ..Means comprises driven device for engaging and moving pivotable load body relative to remainder of vehicle
387 ..Means comprises device or structure for cooperating with motion of vehicle to initiate relocation of body component (e.g., floor or floor section, gate, etc.) thereof
388 ...Component comprises oppositely swinging, operatively interconnected gates
389 .Means comprises structure for cooperating with a maneuvering, wheeled vehicle to engage and acquire a load therefrom or to give up a load thereto
390 .Of driven type, for unloading a wheeled vehicle
391 ..Including load raising or lowering device
392 ...Having means for also moving load laterally
393 ....With flexible, load-underlying element or surface
394 ....With bucket or scoop-type holder
395 ..Including load pushing or pulling device
396 ...With additional means for aligning vehicle and an external load support
397 .Means comprises repositionable supporting and/or guiding structure (e.g., chute) for conducting load moving by gravity to a wheeled vehicle
398 .Power-driven conveyer for loading a wheeled vehicle
399 .Raising or lowering device of driven type for loading a wheeled vehicle
400 .Pushing or pulling device for loading a wheeled vehicle by exerting a generally horizontal force on load
401 .Means serves to align wheeled vehicle and load receiving or relinquishing structure
402 .Means comprises stationary guide or fixed anchor for cooperating with loading or unloading means located, at least in part, on wheeled vehicle
403 DEVICE FOR EMPTYING PORTABLE RECEPTACLE
404 .For emptying contents thereof into portable receiving means
405 ..By inverting both receptacle and receiving means in order to transfer contents from one to other
406 ..Having receiving means mounted on wheeled vehicle
407 ...With closure for receiving means and receptacle-responsive operating means for closure
408 ...Device includes vertically swinging arm and receptacle support pivotably attached thereto
409 ...Device includes track-guided, receptacle-supporting carrier
410 ...Device includes haulage cable
411 .With container opening means
412 ..Rupturing or cutting type
413 .Successive dumping from conveyed stack
414 .With gate or closure-type discharge control means
415 .With jarring means
416 .Nongravity type
417 ..Ejector
418 .Orienting endless, roller or gravity conveyer
419 .Rotary cradle
420 ..Nonfixed pivot
421 ..Oscillated
422 .Elevator type
423 ..Differentially operated cables
424 ..Coacting catch or support
425 .Upending, e.g., rocking or tilting about end
799 APPARATUS FOR POSITIONING PLURAL ORDERLY ARTICLES ONTO PALLET
426 WHEEL AND WHEEL-TYPE ARTICLE HANDLER AND TRANSPORTER
427 .Elevator-type engaging means
428 .Vertically swinging article engager
429 .Opposed horizontally reciprocable engaging elements
430 .Ramp-type truck
431 ARTICLE ENGAGED BETWEEN ENDS FOR ROTATION AND ADVANCEMENT
432 .Driven, canted roll or ring
433 ARTICLE ROTATOR, ROLLER TYPE
434 MOTION OR DRAFT RESPONSIVE LOAD HANDLER AND TRANSPORTER
435 .Movably connected vehicle sections, e.g., articulated
436 ..Vertically swinging
437 .Ground engageable means
438 ..Lifting leg type
439 ..Wheel operated
440 ...Locked to wheel
441 ...Elevator type
442 ...Vertically swinging support
443 ....Cable and drum actuated
444 TILTING VEHICLE-TYPE HANDLER, I.E., PORTABLE GRAPPLE
445 .Article actuated engaging means
446 .Separable load rack
447 .Successive engaging means
448 .With band-type engager
449 .Flexible strand attached load gripper
450 .Opposed movable jaw grippers
451 ..Slidable
452 ..Toggle-type operator
453 .Single movable jaw gripper
454 ..With operating means
455 ..Adjustable
456 ...Slidable

	TILTING VEHICLE-TYPE HANDLER, I.E., PORTABLE GRAPPLE
457	.Rigid-type grapple engaging means, e.g., hooks
458	OPPOSED SHELF-TYPE ELEVATOR AND TRANSPORTER
459	.Load bridging vehicle
460	LOAD BRIDGING VEHICLE
461	.Removable transverse load support
462	VEHICLE ATTACHED AUXILIARY CARRIERS
463	.For rim, tire, or wheel
464	..Plural
465	..Movement about spaced pivot axes
466	..Simple arcuate or rectilinear movement
467	SELF-LOADING OR UNLOADING VEHICLES
468	.With load-receiving portion comprising horizontally disposed, rotatable cylinder
469	.With load-receiving portion, or significant section thereof, pivotable relative to horizontal
470	..Having axis of pivot parallel to longitudinal axis of vehicle for side loading or unloading
471	..Elevatable type
472	..Discharge gate-carried loading means
473	..Interrelated movements or drives for load body and loading means
474	..By adjustably attaching element of running gear (e.g., wheel, axle, etc.) to load-receiving portion, or support member (e.g., chassis, frame, etc.) therefor, to enable relative movement therebetween
475	...Element shiftable linearly toward front or rear of vehicle
476	...Pivotably
477	..Load-receiving portion also shiftable longitudinally
478	...With driven means to move load relative to portion
479	....Means serves also to shift portion in at least one direction
480	..Load-receiving portion includes means which extends longitudinally therefrom to form ramp when portion pivots
481	..Trailer-type vehicle and adjustable or removable tow-engaging structure associated therewith enabling lowering of forward end of vehicle for loading
482	..Trailer-type vehicle having load-receiving portion pivotable relative to at least one other component of vehicle
483	...About joint or other connection in structure (e.g., drawbar, frame, etc.) normally extending linearly, or planarly, from tow-engaging end of vehicle to axis of wheels of vehicle, and relative to said end
484	...About axis located between or adjacent to wheel sets of vehicle having plural, tandemly arranged sets of rear wheels, and relative to tow-engaging end of vehicle
485	...About axis of wheels of vehicle having two wheels, and relative to tow-engaging end of vehicle
486	..With means to raise load above load-receiving portion for deposit thereon or therein
487	...Including receptacle-like (e.g., bucket, scoop, etc.) holder for load
488	...Comprising driven conveyer
489	..With driven conveyer to receive load departing from pivoted load-receiving portion
490	..Two wheel, manually propelled vehicle pivotable about axis of wheels (e.g., hand truck) and provided with attendant-operated, load-handling means
491	..With driven means to move load relative to load-receiving portion
492	...Including pusher element
493	....Pivotably mounted element
494	...Including haulage cable
495	.Having elevating load body
496	..With traversing hoist
497	..With reciprocating conveyer, e.g., ejector type
498	.Separable load rack
499	..Conveyer operated
500	..Cable operated
501	.Successive handling means
502	..Power-driven conveyers
503	...Movably mounted
504	....Universally
505	....Pivotally
506	.Winch and idler-pulley-traversing haulage cable for ejecting load from vehicle
507	.Conveyer
508	..With worker support
509	..Comprising load-engaging element reciprocably movable parallel to generally horizontal load-supporting component of vehicle for ejecting load therefrom
510	...Three-dimensional load-receiving portion includes movable load-underlying surface, and element comprises upright member attached to surface
511	...Pusher moved by ram movable to different positions along load-supporting platform
512	...Plural pushers on same vehicle
513	...Pusher guide means
514	...Pusher moved by flexible means
515	....Connected to winch
516	....Connected to ram actuated by fluid pressure
517	...Pusher moved by ram actuated by fluid pressure
518	..Power-driven with cooperating handling means
519	..With gate means
520	...Multiple gates
521	..With movable upright plate
522	..Laterally movable rigid platform type
523	..Shiftable or removable conveyer unit
525.1	..Reciprocating type
525.2	...Compactor vehicle including compacting plate
525.3	....Reverse-flow ejection
525.4	.....Sequentially acting compacting plates or with closure over compacting plate
525.5	.....Compacting plate movable along controlled arc
525.51	......Including moving compacting plate pivot
525.52	.......Plate pivot moves rectilinearly
525.53	........With pivot-effecting hydraulic cylinder carried on pivot
525.54	.......Pivot carried by arm turning about fixed second pivot
525.55	....Sequentially acting compacting plates or with closure over compacting plate

SELF-LOADING OR UNLOADING VEHICLES
.Conveyer
..Reciprocating type
...Compactor vehicle including compacting plate
525.6 ....Rectilinearly reciprocating compacting plate
525.7 ...Vibratory
525.8 ....Detachable vibrator
525.9 ...Walking beam
526 ..Screw type
527 ..Flexible conveyer type
528 ...Endless
529 ..Load-engaging roller or rollerway
530 ...With means for locking roller against rotation
531 ...With separate means movable vertically between load supporting and retracted positions
532 ...Shiftably or removably supported on vehicle
533 ....Roller connected to support pivotally mounted on vehicle base
534 .....Support pivotal about horizontal axis
535 ....Vertically shiftable
536 ...With means for preventing movement of load relative thereto
537 ..Skidway
538 ...With haulage means (e.g., cable)
539 .Loading or unloading by other carrier or mover means, and the load movement thereof
540 ..Raising or lowering of load or load holder includes vertical, rectilinear movement
541 ...And carrier or mover includes means enabling additional movement having horizontal component
542 ....Hoist having traversing (i.e., horizontal) movement
543 .....Having boom pivotable about a vertical axis
544 ....Elevator with laterally shiftable guides
545 ...Carrier comprises movable component of load-receiving portion (e.g., tailgate, section of floor, etc.)
546 ..Raising or lowering of load or load holder includes curvilinear movement
547 ...Pivotable, telescopic arm imparts path of plural radii
548 ...Unloader actuated by gravity-influenced load
549 ...Carrier or mover includes means enabling additional movement of a rectilinear nature in a direction other than vertical
550 ...Carrier or mover includes means enabling additional movement about a vertical axis
551 ...Load holder located relative to vehicle in such manner as to accrue load during travel of vehicle
552 ....Carrier or mover pivots about axis parallel to longitudinal axis of vehicle
553 ....Load holder or portion thereof has additional axis of pivot relative to swinging arm-type carrier or mover
554 ....Load holder pivotable about lower edge of opening in end of load-receiving portion
555 ...With means to grasp load
556 ...Carrier comprises movable component of load-receiving portion
557 ....Tailgate
558 ...Carrier movable to storage position beneath vehicle
559 ..Loading by haulage cable imparting principally horizontal movement to load or load holder
560 TRAVERSING HOIST TYPE
561 .Traveling crane
562 ..Switch system
563 .Tow truck type
564 HOIST OR ELEVATOR AND ENDLESS OR ROTARY CARRIER
565 VERTICALLY SWINGING SHOVEL AND AUXILIARY CARRIER
566 .Vertically swinging shovel having an orbital path
567 VERTICALLY SWINGING LOAD SUPPORT AND ENDLESS OR ROTARY CARRIER
568 .For handling bottles
569 VERTICALLY SWINGING LOAD SUPPORT AND HOIST OR DRAG LINE
570 ENDLESS OR ROTARY CARRIER AND DRAG LINE SCOOP
571 SKIDWAY WITH HOISTING ROPE
572 LOAD-TRANSPORTING TYPE VEHICLE TO BE LOADED OR UNLOADED, OR EXTERNAL MEANS FOR THE LOADING OR UNLOADING, OR FOR COOPERATING THEREWITH, OF SUCH A VEHICLE
573 .Means includes driven carrier for receiving a load from a vehicle at an unloading station
574 ..Endless apron-type conveyer
575 .Means comprises device for changing the attitude of a vehicle, or its load body, relative to the horizontal for unloading by gravity
576 ..Framework for holding a vehicle, pivotable about fixed axis through framework parallel to longitudinal axis of vehicle
577 ..Pivotably movable structure for supporting a vehicle in toto, positioned, at least initially, in underlying relation thereto
578 ...With means for adapting structure to accomodate more than one length of vehicle
579 ...With fluid or mechanical friction brake to regulate movement of structure
580 ...With means for limiting longitudinal movement of vehicle on structure
581 ...Having axis of pivot parallel to longitudinal axis of vehicle
582 ..By raising one end of a vehicle relative to other end thereof
583 ...Including a vertically swinging, lifting member
584 .Means comprises device or member for moving or causing movement of either a vehicle or a load receiving or relinquishing structure for an alignment purpose
585 .Means includes a load-engaging surface or element for pushing load from vehicle
586 DEVICE OR ELEMENT ASSOCIATED WITH THE HANDLING OR MOVING OF A CHARGE FOR A HEATING-TYPE CHAMBER
587 .Charge leveler
588 ..Of rotary type
589 LOAD SUPPORT HAS LINEAR VERTICAL MOVEMENT AND ADDITIONAL MOVEMENT FOR ALIGNING AND MOUNTING LOAD AT A SPECIFIC LOCATION
590 .Additional movement is rotational

591	GUIDED HOIST WITH LOAD-SUPPORTING GRAB MEANS MOVABLE HORIZONTALLY BY MEANS WHICH SWINGS HORIZONTALLY OR MOVES LINEARLY
592	ELEVATOR OR HOIST AND LOADING OR UNLOADING MEANS THEREFOR
593	.Mail
594	.Load lowering, automatic return
595	.Inclined track
596	..Ditching type
597	...Pivoted track
598	..Tilting carrier
599	...Tilting track section
600	...Running out from base
601	....Return, buffer, or counterweight feature
602	...Return, buffer, or counterweight feature
603	...Skeleton or fork
604	..Outhaul feature
605	..Carrier running out from base
606	.Magnet and grab
607	.Convertible attachment
608	.Separable rack
609	.With external cooperating movable feeding or discharging means
610	..Elevator carrier movement responsive
611	...Vehicle handling
612	...Loading means
613	....Flow control mechanism (i.e., volume)
614	.....Trap chamber type
615	....Movable to feeding position over carrier
616	...Valved carrier
617	..Adjustably mounted discharge guide
618	.Grab
619	..Cantilevered type (e.g., industrial truck)
620	...Movable about horizontal axis
621	...Movable rigid jaw clamping type
622	....Horizontal support with coacting element or holddown
623	....Multiple article or rack type
624	..Clamshell
625	...Guided
626	..Suspended
627	..Suction gripper type
628	.Elevator wherein means comprises guide mounted for relative movement, and tiltable carrier thereon
629	..Portable (e.g., vehicle-mounted) elevator
630	.Elevator wherein means comprises guide mounted for relative movement
631	..Portable (e.g., vehicle-mounted) elevator
632	...Having one or more axes of pivotable movement
633	....Including vertical axis
634	....Single axis, horizontal and fixed
635	.....With fluid drive for movement thereabout
636	......And means for limiting the movement
637	..Having one or more axes of pivotable movement
638	...Single axis, horizontal and fixed
639	.Tilting carrier
640	..With operator-controlled tilting means
641	...Portable (e.g., vehicle-mounted) elevator
642	....Tiltable about axis perpendicular to direction of travel of portable elevator (e.g., forwardly tiltable)
643	..Sectional platform type
644	..Valved
645	..Latch release
646	...With carrier engaging cam means
647	...Cantilevered carrier
648	..Camming trackway
649	...Adjustable
650	...Yoke suspended carrier
651	..Tethered type
652	..Abutment or limit stop
653	...Swinging
654	...Engageable upon reversal or lowering of carrier
655	....Cantilevered carrier
656	...Carrier and guide supported cooperating elements
657	.Valved
658	..Cam or abutment operated
659	.Comprising device on carrier to move or carry load laterally thereto or therefrom
660	..Device raises load relative to carrier prior to moving it laterally
661	..Push-pull device
662	.Comprising means enabling additional movement of carrier or portion thereof relative to its support
663	..On portable (e.g., vehicle-mounted) elevator
664	...Carrier comprises spaced, elongated, horizontally coplanar, load-supporting members, at least one being movable
665	....Pivotable in horizontal plane
666	.....And otherwise movable therein
667	....Shiftable in horizontal plane perpendicularly to axis of elongation
668	..Carrier comprises spaced, elongated, horizontally coplanar, load-supporting members, at least one being movable
669	...Pivotable in horizontal plane
670	....And otherwise movable therein
671	...Shiftable in horizontal plane perpendicularly to axis of elongation
672	..Carrier comprises swingable or rotatable, load-underlying surface
673	.Return, buffer, or counterweight feature
674	.Automatic stop
675	COUNTING AIDS
676	ARTICLE SUPPORTED BY AIR AND MOVED BY MECHANICAL OR MANUAL MEANS
677	FEED TABLES FOR SHEARING MACHINES
678	LAND VEHICLE OR BOAT TILTING AND LIFTING DEVICES
679	VEHICLE WITH LOAD-RECEIVING PORTION AND MEANS FOR RELOCATING A LOAD THEREALONG OR THEREWITHIN
680	VERTICALLY SWINGING LOAD SUPPORT
681	.Track-supported rocker
682	..Horizontally swinging
683	.Cement mixer loader
684	.Coil handler
684.3	.Door removers
685	.Shovel or fork type
686	..With means to facilitate attachment of boom to vehicle
687	..Horizontally swinging
688	...Vertically adjustable
689	...Trolley supported pivoted handle
690	...Reciprocating handle
691	....Link supported
692	....Tilting
693	....Single cable for crowding and hauling
694	...Handle pivoted to boom
695	....Adjustable horizontal swing axis

	VERTICALLY SWINGING LOAD SUPPORT
	.Shovel or fork type
	..Horizontally swinging
	...Handle pivoted to boom
695.5	....Linear cylinder
695.6	....Flexible connector
695.7	....Rack and pinion
695.8	....Rotary motor
696	..Guided
697	..Tilting
698	...Including indicator
699	...Control means responsive to sensed condition
700	....To maintain pitch during swinging
701	....To stop tilting at selected angle
702	...Overshot type
703	...Swinging member attached to rear mounted draft member
704	...Including load ejector, striker, or retainer
705	...Laterally tiltable or shiftable shovel or fork
706	...During swinging to stabilize pitch
707	....On link mounted swinging support
708	....By hydraulic compensation
709	....By tensioned flexible connector
710	....By linkage pivoting on base support
711	.....Yoke mounted shovel or fork
712	.....Linkage extensible for other tilting
713	......Swinging support mounted linkage
714	...Induced by swing of swinging support
715	...By extensible link between load engager and swinging support
716	...Holdable in different pitch positions during loading
717	...On unlatching from swinging support
718	..Extensible support
719	..Return, buffer, or counterweight feature
720	...Spring
721	..Hay retainers
722	..Shovel, rake, handle, or boom structure
723	...With means to facilitate attachment of shovel or rake to handle or boom
724	...Handling device releasably attached to bucket or rake
725	...Means for ejecting load from shovel
726	...Shovel forming members pivoted relative to each other to dump load
727	...Handle body structure
728	.With rectilinear translation
729	.Grab
730	..Programmable or condition responsive means controls grab operation
731	..With auxiliary support for load
732	..Grab movable relative to its supporting arm
733	...Grab orientation maintained during supporting arm manipulation
734	....Grab suspended to swing freely
735	...Grab has swinging movement in plural planes
736	..Movable grab support has plurality of grabs attached thereto
737	..Grab is a suction or magnetic article engaging means
738	..Grab supported and moved by a pivotably mounted member
739	...Grab has pivoted jaw member
740	....With fixed jaw member
741	...Grab has reciprocating jaw member
742	.Nonfixed pivot
743	.Tilting carrier
744.1	HORIZONTALLY SWINGING LOAD SUPPORT
744.2	.Swinging about pivot
744.3	..And moving vertically
744.4	..Moving pivot
744.5	...Pivot swinging about second pivot
744.6	..And moving load support radially with respect to pivot
744.7	..And vertically reorienting load support
744.8	..With means to actuate load gripper
745.1	CYLINDRICAL BAR HANDLING DEVICE
745.2	.Vertical cylindrical bar
745.3	.Heat exchanger tube bundle handling device
745.4	.Pipe laying
745.5	..Vehicle having supporting wheel or wheel substitute
745.6	...Side boom supported hoist line
745.7	.Sequentially acting, diverse handling devices
745.8	..Changing orientation of cylindrical bar
745.9	..Including ramp and elevator means
746.1	...Oscillating or reciprocating elevator
746.2	....Oscillating
746.3	..Including means to rotate or allow rotation of bar about its axis
746.4	.Including ramp and retractable stop or ejector
746.5	.Engaging interior surface of pipe
746.6	.Comprising walking beam
746.7	.Comprising roller or endless belt
746.8	.Comprising carriage
749	HORIZONTAL LINEAR MOVEMENT
750	.Having indexing means
751	.Having gripper means
752	..By suction
753	..Gripper has pivoted jaw
754	ARTICLE REORIENTING DEVICE
755	.Article reoriented by contact with fluid means
756	.Article reoriented by flexible sling means
757	.Article frictionally engaged and rotated by relatively movable means (e.g., disc, endless belt, etc.)
758	.Article inverting means (i.e., 180 degrees turnover)
759	..Plural, driven turning means coact sequentially to invert single article
760	...Article slidably traverses sloping surfaces on a plurality of pivotally mounted turning means
761	..Inverter has plural means for receiving articles
762	...Having article inserting or discharging means
763	...Having article gripping means
764	..Encircling means inverts article
765	...Having article inserting or discharging means
766	...Having securing means movable into engagement with the article
767	...Encircling means moves about its transverse axis
768	..Article turned about one end supported by a fixed or rotatable abutment or by a surface frictionally retarding movement of the supported end
769	...Article turned about a rotatable abutment
770	...Article turned about a fixed abutment means
771	..Including coacting opposed movable arms
772	..Article moved about perpendicular axes
773	..Article received at one point and discharged at a different point

ARTICLE REORIENTING DEVICE
774 .Plural article turning members coact sequentially to reorient single article
775 ..Article deposited on stationary supporting surface intermediate sequential turning members
776 .Arm for orienting article is swingable about its transverse axis and is rotatable about its longitudinal axis
777 .Roller means circumferentially engages and supports orienter for rotation thereon
778 .Article support means rockable on fixed surface
779 .Article support means rotates about a shiftable pivot point
780 .Fixed member provides support for article reoriented while in contact therewith
781 .Article reoriented while fully supported by stationary supporting surface
782 .Article supporting carriage moved over fixed guideway to reorient article
783 .Orienter has article gripping means
784 .Orienter having article-supporting surface movable relative to article
785 LOAD-ENGAGING STRUCTURE OF ELEVATOR OR HOIST-TYPE DEVICE
786 PROCESSES
787 MISCELLANEOUS
****
CROSS-REFERENCE ART COLLECTIONS
****
922 ASSOCIATED WITH FORMING OR DISPERSING GROUPS OF INTERSUPPORTING ARTICLES (E.G., STACKING PATTERNS)
903 .With article-supporting fluid cushion
923 .Including support for group
924 ..Vertically shiftable
925 ...Shifted by change in weight thereon
926 ...Shifted by article repsonsive means
927 .Including means for supplying pallet or separator to group
928 ..Recirculates emptied pallet or separator
929 .Including means for collecting emptied pallet or separator
930 .Manual step utilized
931 .Bricks
932 .Audio or video cassettes
933 .Group formed or dispensed by reversible apparatus
934 .Nonconforming article diverted
900 .Adjust to handle articles or groups of different sizes
901 .Including article counter
902 .Including control for pattern of group
904 .With means to apply adhesive to article
905 .Having geneva drive for apparatus
906 .With article flap deflector
907 .Including means pressing against top or end of group
908 PERFORATED ARTICLE HANDLING
909 REMOTE CONTROL HANDLERS
910 HOLLOW CYLINDER HANDLERS
911 ROLL HANDLERS
912 COMBINED OR CONVERTIBLE IMPLEMENTS
913 HANDLERS WITH SPRING DEVICES
914 HANDLING VEHICLES WITH OVERHEAD GUARD FOR OPERATOR
915 HANDLER-TYPE TOYS
916 SHAFT MUCKING MACHINES
917 HANDLERS UTILIZING PARALLEL LINKS
918 TRANSMISSION-LINE GUIDE FOR A SHIFTABLE HANDLER
919 VEHICLE-CARRIED STORAGE MEMBER (E.G., PORTABLE SILO) AND MEANS FOR ERECTING MEMBER FROM ATTITUDE DURING TRANSPORT TO POSITION OF INTENDED USE
920 HANDLING DEVICE ON TRACTOR UNIT
921 HANDICAPPED PERSON HANDLING

CLASS 415 ROTARY KINETIC FLUID MOTORS OR PUMPS

DECEMBER 1990

1 METHOD OF OPERATION
2.1 WITH MEANS FOR CONTROLLING CASING OR FLOW GUIDING MEANS IN RESPONSE TO NATURAL FLUID CURRENT FORCE OR DIRECTION
3.1 .Having specific features for water current
4.1 .Natural fluid current force responsive
4.2 ..Vertical runner axis
4.3 ..Axial flow runner
4.4 .Vertical runner axis
4.5 .Axial flow runner
5 ENDLESS FLEXIBLE RUNNER (E.G., CHAIN, ETC.)
6 CYCLICALLY DIPPING, LIQUID RETAINING, ELEVATING AND DISCHARGING RECEPTACLE OR CONDUIT
7 FLOAT SUPPORTED OR BUOYANT RUNNER
8 DRIVEN, FLUID IMMERSED RUNNER WITH VANE IN UNCONFINED FLUID STREAM (E.G., TROLLING PLATE, ETC.)
9 INCLUDING DESTRUCTIBLE, FUSIBLE, OR DEFORMABLE NON-REUSABLE PART
10 WITH CONTROL MEANS RESPONSIVE TO MOTION DEVELOPED FLUID EDDY, ELECTRICAL, OR MAGNETIC EFFECT
11 WITH PUMP RECIRCULATION PASSAGE CONTROL RESPONSIVE TO WORKING FLUID CONDITION OR CHARACTERISTIC
12 WITH BIMETALLIC BLADE, VANE, OR ADJUSTMENT MEANS THEREFOR
13 WITH CONTROL MEANS RESPONSIVE TO NON-CYCLIC CONDITION SENSING, CENTRIFUGAL ACTUATION OR TORQUE
14 .Casing, runner, or shaft position or extent of motion responsive
15 .With input signal of independent condition
16 .With testing means for speed control
17 .Plural diverse condition responsive (e.g., temperature and pressure, speed and level, etc.)
18 .Control of clutch or brake surface
19 .Including control of starting motor or runner blade starting position
20 .Control of working fluid and diverse apparatus part
21 ..Diverse part is runner portion or connection to shaft
22 ...Runner bypass from inlet controlled
23 .Responsive to working fluid discharge angle from blade or vane
24 .Responsive to liquid level or weight
25 .Centrifugally initiated valve controlling fluid flow in shaft or runner
26 .Responsive to moving member developed fluid force, current or pressure
27 ..Of relief valve in branched pump discharge line
28 ..Of valve bypassing runner stage
29 ..Motor and upstream working fluid flow control
30 .By shaft speed or torque responsive means
31 ..Helix or screw runner
32 ..Including reset or manual adjustment
33 ..Of adjustable runner, blade, shaft or bearing
34 ...Axially shifted runner, shaft or bearing
35 ..Of movable deflector intermediate jet discharge and runner
36 ..Of working fluid valve or vane
37 ...Including valve in interstage or re-entry passage
38 ...Plural passages with sequential or reverse fluid control
39 ....Inlet and relief or bypass valves
40 ....Fluid motor operated valve
41 ...With latch means for valve actuator
42 ...Actuated by runner or separate motor
43 ....Fluid servo-motor and speed responsive means actuated pilot valve
44 ...Multiple working fluid inlets to runner
45 ....On same radial plane with blade
46 ...Downstream of runner
47 .Temperature or fluid force responsive member
48 ..For adjustment of runner, shaft, vane or blade
49 ..Fluid force responsive member controls working fluid
50 ...For a plurality of runners
51 WITH INDEPENDENTLY OPERATED TIMER OR PROGRAMMER ACTUATOR FOR WORKING FLUID CONTROL
52.1 WITH MEANS FOR RE-ENTRY OF WORKING FLUID TO BLADE SET (E.G., RE-ENTRY TYPE DEVICE, PASSAGE, ETC.)
53.1 .Cross flow runner
53.2 ..Having vane or deflector within runner blade set
53.3 ..Having selectively adjustable vane or working fluid control means
54.1 .To opposite face of blade
55.1 .Turbine regenerative pump
55.2 ..Having specific means to deflect working fluid in regenerative passage
55.3 ...Means extends parallel to passage
55.4 ...Positioned at passage end (e.g., stripper seal, etc.)
55.5 ..Having plural, rigidly related blade sets
55.6 ...Acting serially but nonalternating (e.g., multistage, etc.)
55.7 ...In separate regenerative passages
56.1 .Pump priming means
56.2 ..Vertical runner shaft
56.3 ..Having plural and arcuately arranged vanes around runner
56.4 ..Re-entry through working fluid discharge passage for runner
56.5 ..Re-entry working fluid joins inlet working fluid upstream of runner
56.6 ..Walled pumping chamber positioned within liquid separation chamber
57.1 .Plural, independent, serially acting re-entry means
57.2 ..Having additional blade set in re-entry path
57.3 ..Re-entry from opposite sides of blade face
57.4 ..Re-entry into blade in radial plane of blade
58.1 .Having additional blade set in re-entry path
58.2 .Radial flow runner portion guides re-entry working fluid (e.g., hub, back plate, etc.)
58.3 ..Runner inlet shroud
58.4 .Re-entry working fluid joins inlet working fluid upstream of runner
58.5 ..Axial flow runner
58.6 .Open recirculation from and to blade set
58.7 .Axial flow runner
59.1 .Plural blade sets
60 PLURAL RUNNERS SUPPORTED FOR RELATIVE MOTION OR ON SEPARATE SHAFTS
61 .With means for selective runner operation or drive shaft connection

	PLURAL RUNNERS SUPPORTED FOR RELATIVE MOTION OR ON SEPARATE SHAFTS
62	.Diverse type runners, blade systems or working fluid paths in runners
63	..Including internally passaged runner with reaction type jet discharge nozzle
64	.Radial flow through concentric radially spaced blade rows
65	.Interdigitated, oppositely extending, coaxial, axially spaced blade rows
66	.Serially spaced in working fluid flow path
67	..With initial fluid flow path to each runner
68	..Coaxial runners
69	...One runner support surrounds another
70	RUNNER HAS PLANETARY MOTION OR ROTATES AROUND OBLIQUE OR CONSTANTLY MOVING AXIS
71	RUNNER HAS SPIRALLY ARRANGED BLADE OR FLUID PASSAGE
72	.Extending along runner axis (i.e., axial flow)
73	..Fluid conducting passage
74	..With additional impingement means in fluid flow path
75	..Motor runner
76	FLUID FLOW BETWEEN PLURAL SINUOUS RUNNER SURFACES
77	AXIAL FLOW RUNNER WITH BLADES EXTENDING RADIALLY INWARD AND OUTWARD FROM COMMON ANNULUS
78	.With means selecting only one blade row for working fluid flow
79	.Serial flow through inward and outward extending blade rows
80	MOTOR RUNNER MOTIVATED BY REACTION TYPE JET DISCHARGE NOZZLE FROM INTERNAL WORKING FLUID CONDUIT
81	.With additional rotary, fluid impinged blades
82	.With control of runner speed or direction
83	RUNNER WITH ANNULAR BLADE ROWS OR FLUID CHANNELS SPACED ON COMMON RADIAL PLANE
84	.Including peripheral blade row
85	.With means for reversing runner rotation
86	.Blades projecting axially from plural transverse runner faces
87	..From opposed faces of common central disc
88	PUMP HAVING ROTATING INLET END OR SCOOP IMMERSED IN LIQUID
89	CENTRIFUGAL BOWL PUMP
90	SMOOTH RUNNER SURFACE FOR WORKING FLUID FRICTIONAL CONTACT (E.G., UNBLADED RUNNER, ETC.)
91	ANNULAR RUNNER WITH INWARDLY PROJECTING BLADE
92	MOTOR RUNNER HAVING WORKING FLUID TRAPPING POCKET
93	AXIALLY OPPOSED WORKING FLUID PATHS TO OR FROM RUNNER (E.G., END BALANCE, ETC.)
94	.With working fluid regulation or control means
95	..For fluid motor
96	.With additional shaft connected end balancing fluid force reactor surface
97	.Pump impeller means
98	..Impeller blades extending from opposite sides of common central support
99	..Plural axially spaced impellers
100	...Serially arranged in working fluid path
101	.Plural, separate, parallel, simultaneous flow paths
102	..Towards each other and common exhaust
103	..Plural, axially spaced blades in each path
104	WITH SHAFT CONNECTED FLUID FORCE SUBJECTED THRUST BALANCING SURFACE
105	.In separate chamber having non-system fluid inlet
106	.Fluid force on opposite face of blade or blade support member
107	.Motor shaft
108	CASING AND SPACED HOUSING WITH SPACE VENTED TO WORKING FLUID
109	WITH SHAFT CONNECTED FLUID ABUTMENT MEMBER IN SEALING FLUID FILLED CHAMBER
110	WITH LUBRICATING, SEALING, PACKING OR BEARING MEANS HAVING INTERNAL WORKING FLUID CONNECTION (E.G., FLUID OR FLUID BIASED SEAL, ETC.)
111	.For shaft sealing, packing, lubricating or bearing means
112	..With inlet and outlet connections
113	..Fluid biased, movable or resilient portion
114	WITH CHANGING STATE CONFINED HEAT EXCHANGE MASS
115	WITH PASSAGE IN BLADE, VANE, SHAFT OR ROTARY DISTRIBUTOR COMMUNICATING WITH WORKING FLUID
116	WITH DIVERSELY ORIENTED INLET OR ADDITIONAL INLET FOR DIVERSE FLUID (E.G., HEATING, COOLING OR MIXED WORKING FLUID, ETC.)
117	.Diverse fluids to motor
118	WITH INSPECTION, SIGNALING, INDICATING OR MEASURING MEANS
119	WITH SOUND OR VIBRATORY WAVE ABSORBING OR PREVENTING MEANS OR ARRANGEMENT
120	CENTRIPETAL PUMP
121.1	WITH CUTTER OR COMMINUTOR FOR DEBRIS IN WORKING FLUID
121.2	WITH SEPARATING MEANS OR GUARD FOR SOLID MATTER IN WORKING FLUID (E.G., DEBRIS, ETC.)
121.3	COMBINED
122.1	INCLUDING SHAFT TRANSMISSION TRAIN, BRAKE, CLUTCH, OR ATTENDANT ACTUATED DRIVE MEANS
123	.Brake or clutch
124	.Hand or foot operated crank, pedal or traction wheel
124.1	.Runner supported portion engages shaft transmission train (e.g., peripheral gear drive, etc.)
124.2	.Shaft transmission train having flexible means or coupling
125	INCLUDING MEANS TO CAUSE CYCLICAL MOVEMENT OF A PART (E.G., BLADE, VALVE, ETC.)
126	INCLUDING CASING PART SELECTIVELY MOVABLE RELATIVE TO FIXED SUPPORT
127	.Circularly around fixed runner axis
128	.Separate liner portion
129	RUNNER OR BLADE SELECTIVELY ADJUSTABLE RELATIVE TO CASING
130	.Relatively angularly adjustable plural blades or runners
131	.Axially adjusted
132	..Shaft end supported on movable bearing
133	.Radially adjusted or centered shaft
134	INCLUDING THERMAL EXPANSION JOINT
135	.Resilient
136	.Radially sliding
137	..Stator vane in shroud ring opening
138	..And axial or circumferential expansion
139	.Circumferentially spaced nozzle or stator segments

140	RESILIENT OR MOVABLY MOUNTED BLADE PORTION OR AXIALLY MOVABLE RUNNER OR SHAFT
141	.Yieldingly or pivotedly mounted or flexible blade
142	SHAFT BEARING COMBINED WITH OR RETAINED BY ARM OR VANE IN SURROUNDING WORKING FLUID SPACE
143	PLURAL RUNNERS HAVING DIFFERENT TYPE FLOW PATHS
144	WORKING FLUID BYPASS
145	.Selectively adjustable vane or working fluid control for bypass
146	INCLUDING WORKING FLUID FORCE RESPONSIVE VANE OR FLOW CONTROL
147	.Upstream of runner
148	SELECTIVELY ADJUSTABLE VANE OR WORKING FLUID CONTROL MEANS
149.1	.Separate means upstream and downstream of blade set
149.2	..Including axial flow blade set
149.3	...Means to reverse flow through blade set
149.4	...Plural, selectively adjustable, alternating vane assemblies and blade rows (A,B,A,B)
150	.Runner, shaft, or separate motor operated
151	.Upstream of runner
152.1	..Motor runner with selective inlet paths for reversible rotation
152.2	...Runner includes radial flow blade set
153.1	...Separate runner blade set acted upon for reverse rotation
153.2	....Axial flow blade set
154.1	...Plural inlets simultaneously discharging working fluid onto single blade set
154.2	....Axial flow blade set
154.3	...Including axial flow blade set
155	..Plural, independently adjustable
156	..Deformable, resilient or resiliently biased
157	..Single, axially movable cylinder or plate
158	...Movable to position surrounding blade
159	..Plural and arcuately or circularly arranged around runner axis
160	...Individually pivoted vanes
161	....And fixed vane
162	....Plural, selectively adjustable vane sets
163	....Pivoted parallel to runner axis
164	.....Vanes and blade in same radial plane
165	...On same radial plane with blade
166	....Circumferentially movable around shaft
167	..Movable pipe or nozzle
167.1	..Convertible series-parallel pump
168.1	INCLUDING MEANS FOR HANDLING WORKING FLUID LEAKAGE
168.2	.Leakage through seal between runner or shaft and static part
168.3	..Screw type pumping seal
168.4	..Means specific to axial flow runner
169.1	INCLUDING MEANS FOR HANDLING PORTION SEPARATED FROM WORKING FLUID
169.2	.Moisture or liquid separated from gaseous working fluid e.g., condensate removal, etc.)
169.3	..Vane having specific moisture or liquid directing surface
169.4	..Axial flow blade set and area for collecting moisture or liquid thrown radially outward
170.1	BEARING, SEAL, OR LINER BETWEEN RUNNER PORTION AND STATIC PART
171.1	.Dynamically created seal
172.1	.Means to seal radial flow pump runner inlet from outlet
173.1	.Between blade edge and static part
173.2	..Selectively adjustable
173.3	..Resilient, flexible, or resiliently biased
173.4	..Erodable or permanently deformable
173.5	..Labyrinth seal
173.6	.Between blade supported radial tip ring and static part
173.7	.Between axial flow runner and vane or vane diaphragm structure
174.1	.Selectively adjustable
174.2	.Resilient, flexible, or resiliently biased
174.3	..Seal lies against axial face of runner hub
174.4	.Erodable or permanently deformable
174.5	.Labyrinth seal
175	INCLUDING ADDITIONAL MEANS CAUSING OR CONTROLLING FLUID FLOW FOR HEAT EXCHANGING, LUBRICATING OR SEALING
176	.Means subjected to or is working fluid
177	INCLUDING HEAT INSULATION OR EXCHANGE MEANS (E.G., FINS, LAGGING, ETC.)
178	.Working fluid on at least one side of heat exchange wall
179	..Interstage heat exchanger
180	.Cooling fluid contacts shaft, seal or bearing
181	MEANS, DISPOSITION OR ARRANGEMENT FOR CAUSING SUPERSONIC WORKING FLUID VELOCITY
182.1	WORKING FLUID PASSAGE OR DISTRIBUTING MEANS ASSOCIATED WITH RUNNER (E.G., CASING, ETC.)
183	.Plural distributing means immediately upstream of runner
184	..Inlet scrolls, or distributors within inlet scroll
185	..Arcuately or circularly arranged around runner axis
186	...On radial plane with runner blade
187	....Plural, axially spaced sets of distributors
188	....Radially inward of blade
189	...Removably secured or mounted in casing
190	....Axially arranged securing or mounting means
191	...Vanes
192	....Differentially twisted about radial axis
193	....Plural, axially spaced vane sets
194	.....Diverse size or spacing in different spaced vane sets
195	....Varied spacing between vanes in same set
196	.Passage or casing attached removable liner or wear member
197	..Nonmetallic material
198.1	.Plural rigidly related blade sets
199.1	..Including serial radial flow blade sets and intermediate stationary flow diverter(s)
199.2	...Wherein the diverter includes divider vane(s) between the blade sets
199.3	....Including spirally configurated vane(s)
199.4	..Including an axial-flow blade set
199.5	...Plural serial axial-flow blade sets with intermediate stationary flow diverter(s)
199.6	...And radial-flow blade set in series therewith
200	.Specific casing or vane material

WORKING FLUID PASSAGE OR DISTRIBUTING MEANS ASSOCIATED WITH RUNNER (E.G., CASING, ETC.)
201 .Access opening through portion of casing or cover
202 .Nozzle discharging onto motor runner
203 .Casing having tangential inlet or outlet (i.e., centrifugal type)
204 ..Scroll-type casing
205 ...Inlet scroll
206 ..Axially directed inlet and tangential outlet
207 .Pump outlet or casing portion expands in downstream direction
208.1 .Vane or deflector
208.2 ..Plural and arcuately or circularly arranged in radial plane around runner axis
208.3 ...Plane intersects with runner blade
208.4 ....Plural, radially spaced vane sets
208.5 ....Nonradial flow runner
209.1 ...Plural, axially spaced vane sets acting successively or having specific spacing means
209.2 ...Having means for mounting diaphragm or plural vane holder to casing
209.3 ...Having specific vane mounting means
209.4 ....Vane fixed between radially separate surfaces
210.1 ...Fixed between radially separate surfaces
211.1 ..In radial plane with runner blade
211.2 ..Downstream of runner
212.1 .Scroll or helical type casing with specific exit nozzle
213.1 .Casing with mounting means
214.1 .Casing having multiple parts releasably clamped (e.g., casing seal, etc.)
215.1 .Casing having multiple parts welded, cemented, or fused
216.1 .With runner shaft of specific shape or material
217.1 .With runner having corrosion resistant or nonmetallic portion
218.1 .With runner having conical hub including small diameter facing upstream
219.1 .Casing with axial, conical flow runner
220 .Casing with axial flow runner
221 ..Having specific features for liquid flow
222 ..Pump with casing narrowing to runner
223 ..Having runner in orifice of radially extending partition or casing element
224 .Casing with nonradial flow runner (e.g., circumferential flow, etc.)
224.5 .Radial flow casing having vaneless annulus diffuser
225 .Exit chamber in radial plane axially offset from runner (e.g., sludge pump, etc.)
226 .Annular exit chamber outward of runner
227 .Runner having flow confining continuous passage
228 .Runner having full circular shroud for blades
229 BEARING, SEAL, OR LINER BETWEEN SHAFT OR SHAFT SLEEVE AND STATIC PART
230 .Seal
231 ..Resiliently biased
232 MISCELLANEOUS

****

CROSS-REFERENCE ART COLLECTIONS

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900 ROTARY BLOOD PUMP
901 DRILLED WELL-TYPE PUMP
902 ROTARY PUMP TURBINE PUBLICATIONS
903 WELL BIT DRIVE TURBINE
904 TOOL DRIVE TURBINE (E.G., DENTAL DRILL, ETC.)
905 NATURAL FLUID CURRENT MOTOR
906 .Having specific features for water current
907 .Vertical runner axis
908 .Axial flow runner
909 AIR STACK OR SHAFT HAVING NATURAL FLUID CURRENT MOTOR
910 REVERSIBLE BETWEEN PUMP AND MOTOR USE
911 PUMP HAVING REVERSIBLE RUNNER ROTATION AND SEPARATE OUTLETS FOR OPPOSING DIRECTIONS OF ROTATION
912 INTERCHANGEABLE PARTS TO VARY PUMPING CAPACITY OR SIZE OF PUMP
913 INLET AND OUTLET WITH CONCENTRIC PORTIONS
914 DEVICE TO CONTROL BOUNDARY LAYER
915 PUMP OR PORTION THEREOF BY CASTING OR MOLDING
916 PERPETUAL MOTION DEVICES

CLASS 416 FLUID REACTION SURFACES (I.E., IMPELLERS)

DECEMBER 1990

1 METHOD OF OPERATION
2 HAVING FRANGIBLE OR FUSIBLE PART OR CONNECTION
3 ACTUATION DIRECTLY RESPONSIVE TO MAGNETIC OR ELECTRICAL EFFECT
4 ROTARY SKIN FRICTION TYPE (E.G., MAGNUS ROTOR, ETC.)
5 WITH ILLUMINATION MEANS
6 DRIVEN BY PULSATING OR DIVERSE WORKING FLUID
7 WORKING MEMBER SUPPORTED ON ENDLESS FLEXIBLE CARRIER
8 .Feathering blades
9 WITH MEANS POSITIONING FLUID CURRENT DRIVEN IMPELLER RELATIVE TO FLOW DIRECTION
10 .Offset relative to flow direction
11 ..Upstream pivotal mounting
12 ..Responsive to folding or feathering of flow-aligned vane
13 ..Horizontal deflection relative to flow-aligned vane
14 ...With impeller brake or stop
15 ...And responsive to transverse vane
16 ...Biased to position by weight of parts
17 .Feathering cycle related to flow direction
18 WITH GYROSCOPIC REFERENCE MEANS FOR ROTOR CONTROL
19 SINGLE BLADE ROTARY IMPELLER WITH COUNTERBALANCE
20 R DRIVE BY FLUID REACTION JET ON WORKING MEMBER
20 A ..Articulated or flexible connection
21 .Combustion chamber carried by member
22 ..Air-ingestion rotor tip unit
23 WITH MEANS MOVING WORKING FLUID DEFLECTING WORKING MEMBER PART DURING OPERATION (E.G., AILERON, ETC.)
24 .Cyclic movement of member or part
25 INTERRELATED CONTROLS FOR IMPELLER AND DRIVE MEANS
26 .Pitch adjustment related to drive brake or clutch operation
27 .Pitch adjustment and throttle regulation with condition sensing means
28 ..Temperature responsive control
29 ..Drive engine intake air responsive control
30 ..Electrical control or sensing means
31 WITH CONTROL MEANS RESPONSIVE TO NON-CYCLIC CONDITION SENSING, CENTRIFUGAL ACTUATION, TORQUE OR THRUST
32 .Control of drive brake or clutch
33 .Plural distinct impellers having related control
34 ..Synchronizing
35 .With electrical means comparing and reducing error related to preset datum
36 .Plural diverse condition responsive
37 ..Relative ambient condition sensing (e.g., temperature, density, wind force, etc.)
38 ..Drive engine condition excluding shaft speed or torque
39 .Temperature or icing condition responsive
40 .Responsive to relative working fluid velocity
41 ..Natural fluid current
42 .Pressure or altitude responsive
43 .Responsive to condition of torque or thrust of device or driving or driven means or mechanism
44 .Impeller rotation speed responsive
45 ..Valve element directly movable by centrifugal force
46 ..Including pitch lock or adjustable stop
47 ..Control by means of separate motor
48 ...Motor carried by impeller
49 ..Including reset or manual override of control
50 ...Of centrifugal weight governor
51 ..Centrifugal mass moved along guided or lineal path
52 ..Centrifugal mass coaxial with impeller
53 ...Pivot axis parallel to rotation axis
54 OPERATED BY ART DEVICE
55 .Vehicular device
56 .Runner supported rocking device
57 ..Inertial actuation
58 ..Continuous impeller rotation
59 .Pivot supported swinging device
60 .Integral with or directly attached to rotary device or part (e.g., flywheel, pulley, etc.)
61 WITH MEASURING, TESTING, SIGNALLING OR INSPECTION MEANS
62 REMOVABLE AUXILIARY ATTACHMENT TO WORK SURFACE
63 AMBULANT, BODY SUPPORTED OR WITH CARRYING HANDLE
64 TRANSLATORY REACTION MOTION
65 .And concurrent rotary reaction motion
66 .Flexible or relatively movable working member or part
67 ..Valve type
68 ..Complemental pivoted surfaces
69 OPERATOR SUPPORTED MANUALLY ACTUATED TYPE
70 R .Operation solely by direct hand manipulation
70 A ...Fans
71 ..Simulation or having indicia, ornamentation or combined feature
72 ..Relatively movable portions
73 ...Arcuate planar folding of working surface
74 .Fulcrum support type (e.g., oar, scull, etc.)
75 .Reciprocatory pin-slot actuator
76 .Rotary hand crank (e.g., egg beater, etc.)
77 ..Intermeshing or interdigitated working members
78 CRANK TYPE DIPPING OR STIRRING MOTION
79 OSCILLATORY REACTION MOTION
80 .With pendulum, counterbalance or inertial weight
81 .Flexible working member
82 .Relatively movable working member portions
83 .Compound motion (e.g., feathering, undulating, etc.)
84 BUOYANT OR INFLATABLE WORKING MEMBER
85 FLOAT SUPPORTED
86 .Buoyant hub or rim
87 RADIALLY EXTENSIBLE OR RETRACTIBLE ROTOR WORKING MEMBER
88 .Variable work surface or non-rigid connection
89 .Having pitch adjustment
90 R WITH FLUID PASSAGE IN WORKING MEMBER COMMUNICATING WITH WORKING FLUID
90 A ..Air and watercraft propellers
91 .Both inlet and outlet to working fluid
92 .Discharge solely at periphery normal to rotation axis
93 R AMBIENT FLUID OR EXHAUST GAS DIRECTED THROUGH HUB, FAIRING OR HOUSING
93 A ..Water or marine propellers
94 .Aircraft spinner or cowling

95	WITH HEATING, COOLING OR THERMAL INSULATION MEANS
96 R	.Changing state mass within or fluid flow through working member or carrier
96 A	...Blade inserts
97 R	..Flow exhausted to working fluid
97 A	....Laminated or porous skin
98	SUSTAINED ANCILLARY MOVEMENT OF ROTARY WORKING MEMBER (E.G., CYCLIC FEATHERING, ETC.)
99	.Intermounted rotary members
100	.Continuous rotor oscillation
101	.Cyclic radial movement
102	.Responsive to carrier tilt
103	.Lead-lag type rotor blade movement
104	..And additional correlated blade movement (e.g., pitch change, etc.)
105	..Positive means effecting lead-lag movement
106	..With movement restraining means (i.e., damping)
107	...Resilient bias or limit stop
108	.By actuator eccentric to rotation axis
109	..Stationary eccentric guide or track
110	.Continuous rotation about plural axes
111	..Motion about parallel axes
112	.Responsive to fixed actuator (e.g., cam or trip, etc.)
113	..Axial cam
114	...Selectively adjustable
115	....Plural impellers
116	..Stationary cam track or guide surface
117	.Responsive to gravity or working fluid force
118	..Having manual control or adjustment
119	..Motion about parallel axes
120	PLURAL IMPELLERS HAVING RELATIVE MOVEMENT OR INDEPENDENT SUPPORTS
121	.Shiftable support
122	.Intersecting or interdigitated paths of operation
123	.Divergent rotation axes
124	.Coaxial rotation
125	..Individual prime mover
126	..Concentric working members
127	..Concurrent adjustment
128	..Oppositely rotating impellers
129	...Engine driven
130	.Differential or independent adjustment
131	ARTICULATED, RESILIENTLY MOUNTED OR SELF-SHIFTING IMPELLER OR WORKING MEMBER
132 R	.Sectional, staged or nonrigid working member
132 A	...Flexible sheet or plate
132 B	...Windmills
133	.Axially displaceable rotary carrier (e.g., hub, etc.)
134 R	.Nonmetallic resilient mounting
134 A	...Aircraft rotors
135	.Resilient bias or mount
136	..Rotary working member pivotable solely about radial axis
137	...Convolute spring coaxial with impeller shaft
138	..With manual control means
139	.Including weight bias means
140	.Including movement limit stop or damping means
141	.Plural articulation
142	WORKING MEMBER FOLDABLE, PIVOTABLE OR COLLAPSIBLE TO NON-USE POSITION
143	.Member movement in rotation plane
144	WITH WEIGHT-BALANCING MEANS
145	.Self-shifting or selectively adjustable mass
146 R	COMBINED OR CONVERTIBLE
146 A	..Hub lubrication or seal
147	HAVING POSITIVE MEANS FOR IMPELLER ADJUSTMENT
148	.Tiltable carrier (e.g., hub, etc.)
149	.Shiftable carrier support
150	..Rectilinear motion
151	.Power derived from impeller shaft
152	..By brake application or release
153	.Having pitch lock or adjustable stop
154	..Fluid motor for impeller adjustment
155	.Motor bodily rotatable with impeller hub or shaft
156	..Fluid motor
157 R	...Coaxial with impeller shaft
157 A	.....Rotary fluid motor
157 B	.....Plural blade units
158	...Working member mounted or housed
159	.Power or manual actuator on non-rotatable part
160	..Planetary gearing connecting rotatable and non-rotatable parts
161	..Axially movable impeller
162	..Having motor
163	..Adjustment rod through entire impeller shaft
164	..Reciprocating sleeve or collar on or rod in impeller shaft
165	...Reciprocated by coaxial screw
166	...Rack-pinion connection to working member
167	...Pin-slot or cam-slot connection to working member
168 R	...Link connection to working member
168 A	.....Turbo-machine
169 R	HAVING CLUTCH OR BRAKE MEANS
169 A	..Engine cooling fans
170 R	SPECIFIC DRIVE OR TRANSMISSION MEANS
170 HM	..Hand mixers
171	.Impeller driven by fluid motor
172	.Alternating rotation
173	.Manual powered means
174	HAVING LUBRICATING, SEALING, PACKING OR SPECIFIC BEARING MEANS BETWEEN IMPELLER OR SHAFT AND STATIC PART
175	DIVERSE IMPELLERS OR WORKING MEMBERS
176	SPIRAL BLADE OR FLOW PASSAGE (360 DEGREE)
177	.Flow confining casing, shroud or passage
178	PERIMETRIC BLADING EXTENDING AXIALLY BETWEEN ANNULAR MEMBERS (E.G., SQUIRREL CAGE TYPE, ETC.)
179	ROTOR HAVING FLOW CONFINING OR DEFLECTING WEB, SHROUD OR CONTINUOUS PASSAGE
180	.Blades projecting axially from concavo-convex annular web
181	.Apertured or foraminous web or shroud
182	.Radially extending web or end plate
183	..Circumferentially or radially angulated or discontinuous blades or sections (e.g., stepped, etc.)
184	..Spaced intermediate ends of opposed axial flow impeller
185	..Circumferentially and radially continuous web or end plate
186 R	...Having opposed annular surface between adjacent blades
186 A	.....Adjustable blade or part
187	.....Angularly spaced, axially elongated blades (i.e., squirrel cage type)
188	...Conical web
189	.Axially extending shroud ring or casing
190	..Vibration inhibiting or expansion-contraction structure
191	..Segmental shroud
192	..Having radial flange
193 R	..Spaced inwardly of impeller periphery

	ROTOR HAVING FLOW CONFINING OR DEFLECTING WEB, SHROUD OR CONTINUOUS PASSAGE
	.Axially extending shroud ring or casing
	..Spaced inwardly of impeller periphery
193 A	....Root platforms
194	LASHING BETWEEN WORKING MEMBERS OR EXTERNAL BRACING
195	.Peripheral
196 R	.Connecting adjacent work surfaces
196 A	...Non-turbo machine (windmills)
197 R	CUPPED REACTION SURFACE NORMAL TO ROTATION PLANE
197 A	..Air and water motors (natural fluid current)
197 B	..Pelton wheels (impulse wheels)
197 C	..Torque converters
198 R	MULTIPLE AXIALLY SPACED WORKING MEMBERS
198 A	..Turbo machine
199	.Opposed axial flow
200 R	.Circumferentially offset
200 A	...Turbo machine
201 R	.Differing radii
201 A	...Non-turbo machine
202	PROJECTING BLADE AXIS OFFSET FROM ROTATION AXIS
203	UNSYMMETRICAL IMPELLER OR DISSIMILAR WORKING MEMBERS
204 R	SPECIFIC WORKING MEMBER MOUNT
204 A	..Turbo machine
205	.Adjustable
206	..Spring biased detent
207	..Blade releasably clamped
208	...Split impeller hub
209	..Thimble or sleeve fixed on impeller blade
210 R	.Distally supported on radial arm
210 A	...Turbo machine
211	..Axially extending blade
212 R	.Interlocking blades
212 A	...Turbo machine
213 R	.Welded, cemented or fused
213 A	...Non-turbo machine
214 R	.Blade held between separable surfaces
214 A	...Turbo machine
215	.Blade received by continuous circumferential channel
216	..Radially spaced ribs or grooves
217	..Divided blade root
218	..Having circumferentially extending binder
219 R	.Blade received in well or slot
219 A	...Non-turbo machine
220 R	..Having blade locking means
220 A	....Non-turbo machine
221	...Resilient or deformable
222	.Blade straddles carrier
223 R	SPECIFIC BLADE STRUCTURE (E.G., SHAPE, MATERIAL, ETC.)
223 A	..Turbo machine
223 B	..Radial flow devices
224	.Having wear liner, sheathing or insert
225	.Having spanwise compression means
226	.Formed with main spar
227 R	.Openwork (e.g., lattice, looped, etc.)
227 A	...Propeller and non-mixers
228	.Tined or irregular periphery
229 R	.Laminated, embedded member or encased material
229 A	...Turbo machine
230	..Wire, fiber, strand or fabric
231 R	.Apertured or permeable
231 A	...Mixers or agitators
231 B	...Slotted blade
232	.Hollow
233	..Having brace means bridging cavity
234	.Integrally shaped or blended into hub
235	.Irregular, flanged or channel forming blade surface
236 R	..Ribbed or grooved
236 A	....Concentric or circular ribs
237	..Angular or offset
238	.Cantilever blade
239	.Blade cuff or shank construction
240	.Flexible
241 R	.Coating, specific composition or characteristic
241 A	...Plastic or synthetic material
241 B	...Ceramic material
242	.Reverse curve surface
243	.Concave surface
244 R	SUPPORT MOUNTING, CARRIER OR FAIRING STRUCTURE
244 A	..Turbo machine
244 B	..Water or marine propellers
245 R	.Spinner or fairwater cap
245 A	...Water or marine propellers
246	.Selectively adjustable impeller mount
247 R	PROTECTIVE SCREEN OR GUARD
247 A	..Water or marine propellers
248	MISCELLANEOUS (E.G., BLADE ROOT OR ROOT BLOCK, ETC.)
	******************************
	CROSS-REFERENCE ART COLLECTIONS BASED ON USE OR CHARACTERIC
	******************************
500	VIBRATION DAMPING FEATURES
501	FLY BRUSH TYPE IMPELLER
	******************************
	DIGESTS
	******************************
DIG 1	Stalker
DIG 2	Formulas of curves, etc.
DIG 3	Sheet metal
DIG 4	Fluid current motor and generator
DIG 5	Variable camber or chord length
DIG 6	Supports for natural fluid current motors
DIG 7	Inlet and outlet
DIG 8	Stack or chimney with fluid motor
DIG 9	Savonius

1 CONDITION RESPONSIVE CONTROL OF PUMP DRIVE MOTOR
2 .Plural pumps having separate drive motors, supply sources, or delivery destinations
3 ..Pumps in parallel flow paths with common inflow or outflow
4 ...Having means sensing condition in common inflow or outflow line
5 ....With control of plural pump drive motors
6 .....With additional means sensing condition of one pump or path
7 .....Sequential starting or stopping of pumps
8 ......Alternating sequences
9 .By stopping pump in response to leakage into or from system
10 .By controlling starter motor for internal combustion engine
11 .By controlling free piston internal combustion engine
12 .Having timer or delay means
13 .Responsive to pump lubricant, sealant, or coolant condition
14 .Having ambient condition responsive means
15 .With control of pump drive transmission
16 .With plural separate drive motors for single pump unit
17 .With plural separate drive motor controlling elements
18 .Single motor control element responsive to means sensing diverse conditions
19 ..Sensing both inlet and outlet conditions
20 ..One condition is rate of flow to or from pump
21 ..One is motive fluid condition of fluid drive motor
22 ..One condition is speed of pump
23 ...With common element sensing diverse condition to control motor and pump fluid valve
24 ...Speed sensor comprises auxiliary pump or electric generator
25 .Relatively movable elements sensing same system pressure for single control element
26 .With condition responsive control of pump fluid valve
27 ..Having independent means for delaying valve actuation
28 ..Fluid and motor controls have common sensing element
29 ..Fluid and motor controls separately responsive to diverse conditions
30 ...Liquid accumulation controlled discharge valve downstream of motor controller sensing means
31 ....Motor controller responsive to liquid pressure
32 .Responsive to pump or pump fluid temperature
33 .Pump stop control means requiring manual reset
34 .By controlling internal combustion drive engine
35 .By controlling wind motor in response to liquid accumulation
36 .Responsive to accumulation of pumped liquid in receiver
37 ..By movable liquid receptacle
38 ..By liquid pressure sensor
39 ..With motive fluid supply communicating with liquid receiver
40 ..By float
41 ...Controlling motive fluid or drive motor
42 .In response to pump speed
43 .Responsive to change in rate of pump fluid flow
44 .By control of electric or magnetic drive motor
45 ..By changing electrical characteristic of motor or motor circuit
46 .By controlling drive motor motive fluid
47 ..Rotary nonexpansible chamber type motor
48 ELECTRICAL OR GETTER TYPE
49 .Ionic with gettering
50 .Electromagnetic
51 .Getter heating, vaporizing, or regeneration
52 EXPANSION AND CONTRACTION OF PUMP FLUID
53 PROCESSES
54 .Of pumping one fluid by contact or entrainment with another
55 ..Specific motive fluid
56 DRILLED WELL FREE PISTON TYPE PUMP
57 .Having condition or position responsive control of pump discharge flow path
58 .Having condition or position responsive control of motive fluid supply
59 .Radially expansible piston portion controls pump and motor chamber intercommunication
60 .Mechanically actuated valve carried by piston
61 BUOYANTLY SUPPORTED
62 ALTERNATE SERIES OR PARALLEL OPERATION OF PLURAL PUMPS
63 WITH SIGNAL, INDICATOR, OR INSPECTION MEANS
64 GAS PRESSURE EXCHANGER USING ROTARY CELLULAR CONVEYER
65 ONE FLUID PUMPED BY CONTACT OR ENTRAINMENT WITH ANOTHER
66 .Contact or entrainment within rotary impeller
67 ..Passage in impeller shaft for pumped or motive fluid
68 ..Liquid ring
69 ...With diverse pump
70 ..Peripheral motive fluid inlet
71 ..Axial inlet for pumped fluid
72 ...Peripheral pumped fluid outlet
73 .By ignition of motive fluid
74 ..With pumped fluid condition responsive ignition means
75 ..With fluid momentum utilizing means
76 .Jet pump with motive fluid generating pump
77 ..Recirculation of separated motive fluid
78 ..Entrainment at exit of impeller
79 ..Jet delivers back to generating pump
80 ...Rotary nonexpansible chamber-type generating pump
81 ....Multiple-stage rotary pump
82 ....Changeable jet location (e.g., deep or shallow well)
83 ....Jet within rotary pump casing
84 ..Rotary nonexpansible chamber-type generating pump
85 .Diverse pumps
86 ..Including pneumatic displacement
87 ..Including jet pump
88 ...Diverse pump motor exhaust is jet motive fluid
89 ...With rotary nonexpansible chamber type
90 ..Including aerated column
91 ...Diverse pump motor exhaust is aeration fluid

	ONE FLUID PUMPED BY CONTACT OR ENTRAINMENT WITH ANOTHER
92	.Liquid piston
93	..Moving contracting chamber
94	...Helical chamber
95	...Movement of chamber cyclically controls flow of liquid into chamber for cyclic operation
96	...Liquid supporting chambers move liquid to pump fluid
97	...Relatively movable chambers
98	...Reciprocating
99	..Mercury piston
100	..Tide or wave
101	..Piston level responsive control for cyclic operation
102	...Plural chambers
103	..Plural chambers
104	..Momentum piston
105	.By condensation of motive fluid
106	..Plural alternating pumps
107	..With condition responsive control means
108	.Aerated column
109	..Valved gas inlet
110	...With pumped fluid velocity or flow responsive valve operating means
111	...Plural serially actuated valves
112	...With flexible pressure responsive sensing element (i.e., bellows, diaphragm, etc.)
113	....Sensing element controls pilot valve
114	...With pilot valve
115	...Valve member actuated responsive to absolute gaseous motive fluid pressure or flow rate
116	...Controlled by means responsive to liquid level accumulation in column
117	...Valve biased open by static pressure of pumped fluid
118	.Liquid pumped by supplying or exhausting gaseous motive fluid to or from pumping chamber
119	..Motive fluid pumped by contact with a liquid
120	..With condition responsive control of motive fluid vacuum or pressure generating means
121	..Serially connected pumping chambers
122	..Alternate pumping from plural pumping chambers
123	...Motive fluid in one chamber controlled by condition in second chamber
124	....Responsive to weight of pumped fluid
125	....Responsive to liquid level of pumped fluid
126	..With float actuated control means
127	...Plural floats in single pumping chamber
128	...With intermediate pilot valve
129	...With intermediate electrical actuating means
130	...Control of motive fluid inlet (e.g., atmosphere, etc.)
131	....With control of motive fluid outlet
132	.....With control of pumped fluid outlet
133	.....With overcenter valve actuator means
134	...Control of motive fluid outlet
135	....With control of pumped fluid outlet
136	....With control of pumped fluid inlet
137	..Cyclic pumping
138	...Control by liquid level sensing means
139	...Control by condition of pumped fluid
140	....Movable pumping chamber
141	....Responsive to flow of pumped fluid
142	....Responsive to pumped fluid pressure
143	...Motive fluid supply or exhaust valve responsive to motive fluid pressure
144	...Correlated motive fluid valve and pressure or vacuum generating means
145	...Correlated supply - exhaust of motive fluid or vacuum generating means
146	....With pilot valve
147	....Unitary supply - exhaust valve
148	..With vacuum generator
149	...With pressure generator
150	.Gravity flow motive fluid
151	.Jet
152	..Vapor condensation vacuum diffusion type
153	...With cooling or heat insulation means
154	...Vertical stack from generator with reverse flow nozzle
155	..Flue type
156	...With spark arrester
157	...Regulation
158	..With motive fluid generator
159	...Internal-combustion engine motive fluid source
160	..Cleaning by separate fluid or diverted motive fluid
161	..Radial disc-type motive fluid jet
162	..Interrelated overflow and motive fluid valves
163	..Successive introduction of motive fluid
164	...With interstage cooling
165	...Individually controlled motive fluid flows
166	....Sequential
167	...Central and peripheral motive fluid supply
168	...One motive fluid flow surrounds nozzle tube of another
169	...Laterally spaced parallel motive fluid flows
170	...In-line motive fluid flows
171	..Tangential motive fluid supply (i.e., vortex type)
172	..Concentric reverse flow motive fluid and discharge conduits
173	..With cooling
174	..Successive entrainment of pumped fluid
175	..With priming or overflow removal jet
176	..Parallel entrainments with separate combining tubes
177	..Annular motive fluid stream entrains pumped fluid outside and inside
178	..Selectively usable flow confining members (e.g., nozzles, combining tubes, etc.)
179	..Plural motive fluid jets or sources for single entrainment
180	...Individual or relative control
181	..Faucet or flexible hose attached
182	..Regulation
182.5	...Liquid level responsive
183	...By position of nozzle relative to combining tube
184	....Pressure controlled
185	...With main line downstream control
186	...By bypassing motive fluid from nozzle
187	...By controlling motive fluid
188	....Interrelated with pumped fluid control
189	....Pressure controlled
190	...Pumped fluid inlet valve
191	....Pressure controlled
192	...Pressure controlled overflow
193	....By movable conduit or conduit wall (e.g., combining tube)
194	..With means to whirl pumped fluid
195	..Specific material

ONE FLUID PUMPED BY CONTACT OR ENTRAINMENT WITH ANOTHER
.Jet
196 ..Expressed mathematically or dimensionally
197 ..Peripheral motive fluid supply
198 ..Specific motive fluid nozzle
199.1 DIVERSE PUMPS
199.2 .Priming and venting
200 .Priming with liquid level responsive control
201 .Including rotary nonexpansible chamber type
202 ..Diverse pump controlled by rotary pump condition
203 ..Preceding diverse pump
204 .Moving partition or cylinder of rotary pump forms or actuates reciprocating pump
205 .Series
206 ..Rotary expansible chamber type precedes reciprocating
207 BY HEATING OF PUMPED FLUID
208 .Vapor generator type
209 ..With inlet valve
210 PUMP FLUID BIASED OVERCENTER LOAD EQUALIZER
211 INERTIA-TYPE PUMPING MEMBER OR DRIVE MEANS
211.5 LIQUID LEVEL RESPONSIVE CONTROL OF DISPLACEMENT, VOLUMETRIC CAPACITY OR DRIVE TRANSMISSION
212 CONDITION RESPONSIVE CONTROL OF DRIVE TRANSMISSION OR PUMP DISPLACEMENT
213 .Having condition responsive pumped fluid control
214 .Having means to hold or resist movement of pumping element
215 .By changing phasing of plural pistons in single chamber
216 .Plural pumps with individual or relative control
217 .Reversible flow pump
218 .Adjustable cam or linkage
219 ..Radially adjustable stator
220 ...Rotary expansible chamber pump
221 ..Radial cam or eccentric
222 ..Axial cam
223 .Disconnectable drive element (e.g., clutch, belt, shifter, etc.)
225 INTENSIFIER
226 .Ram type
227 ..Multiple drive pipe
228 WITH CONDITION RESPONSIVE CONTROL OF COOLANT OR LUBRICANT
229 OPERATED BY ART DEVICE
230 .Chair
231 .Vehicle mounted or attached
232 ..Scoop type
233 ..Wheel or axle
234 AMBULANT, BODY SUPPORTED, OR WITH CARRYING HANDLE
235 .Pump driven by traverse movement
236 CONVERTIBLE TO APPARATUS OF A DIFFERENT CLASS
237 .Motor and pump
238 CHANGEABLE BY ASSEMBLY OR DISASSEMBLY
239 .For reverse drive or flow
240 INERTIA LIQUID PISTON (E.G., MOMENTUM, ETC.)
241 .Movable confining means
242 POSITION RESPONSIVE BYPASS BETWEEN PLURAL PUMP CHAMBERS
243 WITH INTERCOOLER
244 SUCCESSIVE STAGES
245 .Fluid motor for one stage supplied from another stage
246 .Stages driven by relatively movable motor working members
247 ..Rotary
248 .Parallel stages to or from single stage
249 .Prior stage delivers to atmospheric chamber
250 .With interstage intake or additional inlet to latter stage
251 .With interstage discharge or additional discharge from former stage
252 ..Pressure responsive interstage discharge
253 .Condition responsive control of fluid
254 .Reciprocating rigid stages
255 ..Crankcase forms stage or interstage flow path
256 ..Stages comprise oppositely moving valved pumping members
257 ...Aligned
258 ..Reciprocating cylinder and piston
259 ..Including valved piston
260 ...Piston forms or carries inlet and outlet valve for one stage
261 ...Serial interstage distributors in piston
262 ...Valve in piston is first stage inlet valve
263 ...With additional pumping member in parallel flow path
264 ...Fluid motor driven
265 ..Relatively movable
266 ..Three or more
267 ..Series double acting
268 ..Unidirectionally acting rigidly connected pumping members
269 THREE OR MORE CYLINDERS ARRANGED IN PARALLEL, RADIAL, OR CONICAL RELATIONSHIP WITH ROTARY TRANSMISSION AXIS
270 .Condition responsive fluid control
271 .Motor driven
272 .Continuous unidirectional fluid bias on reciprocating member
273 .Radial cylinders
274 CONDITION RESPONSIVE VARIABLE VOLUMETRIC CAPACITY EXPANSIBLE CHAMBER PUMP (I.E., CLEARANCE CONTROL)
275 .Valved clearance chamber
276 ..Connectable clearance chambers of opposed pump chambers
277 ..Plural chambers connected to single pump chamber
278 EXTERNAL CONDITION RESPONSIVE PUMPED FLUID CONTROL
279 WITH CONDITION RESPONSIVE PUMPED FLUID CONTROL
280 .Responsive to pump created drive motor condition
281 .Lubricant condition responsive
282 .Plural separate sensing means for a single fluid controller
283 .Bypass or relief valve controls venting by movable pump chamber part
284 .Bypass or relief valve carried by movable pumping member
285 .Valve passage directly connecting concurrently contracting and expanding non-rotary pump chambers
286 .Plural pump units with individual or relative control
287 ..Diverse capacity pumps
288 ..Sequentially operated separate relief or bypass passages
289 .Variable cutoff or pumping member controlled port
290 .Having timer or delay means for fluid controller

WITH CONDITION RESPONSIVE PUMPED FLUID CONTROL
291 .Reversibly driven pump having bypass active in either flow direction
292 .Pumped fluid temperature responsive
293 .Driven pump part speed responsive
294 ..Centrifugally actuated
295 .Inlet throttle or stop valve
296 .Bypass or relief valve part carried by or carries distributor part
297 .Expansible chamber pump distributor operation modified
297.5 ..Liquid level responsive
298 ..Inlet valve
299 .Normally open bypass or relief passage closed by increased pressure or flow
300 .Fluid flow rate responsive
301 .Inlet pressure increase opens bypass from pump inlet to discharge
302 .Plural paths having individual condition responsive control means
303 ..Sequentially opened main line and bypass or relief paths
304 ..Plural bypass or relief paths
305 .Manual actuation of condition responsive valve
306 .Pump inlet or pump chamber vented to ambient (e.g., vacuum breaker)
307 .Pressure responsive relief or bypass valve
308 ..Having additional relief or bypass valve
309 ..Responsive to pump inlet condition
310 ..Rotary expansible chamber pump
311 ..Adjustable spring loaded valve
312 WITH MUFFLER ACTING ON PUMP FLUID
313 COMBINED
314 SINGLE ACTING CHANGEABLE TO OR FROM DOUBLE ACTING
315 REVERSE FLOW WITH UNIDIRECTIONAL DRIVE OR UNIDIRECTIONAL FLOW WITH REVERSE DRIVE
316 CORRELATED PUMP AND MOTOR OR CLUTCH CONTROL
317 .Pump distributor control
318 ..Mechanically interconnected pump and fluid motor distributors
319 INCLUDING DISENGAGEABLE ROTARY OR FRANGIBLE DRIVE CONNECTION
320 SERIALLY FORMED PUMPING CHAMBERS (E.G., ENDLESS)
321 MOTOR DRIVEN
322 .Magnetostrictive chamber
323 .Pump motor or starter driven by pump fluid
324 .Pump operated as motor to start prime mover drive
325 .Reversely rotated for starting
326 .Including means for selectively varying motor speed or rotary motor direction
327 .Reaction motor
328 .Spring or weight motor
329 ..Fluid weight (e.g., gravity vessel)
330 .Tide or wave motor
331 ..Float
332 ...Pivoted
333 ...Guided
334 .Fluid current motor
335 ..Including alternate drive
336 ..Rotary parallel axis type
337 .Buoyant motor
338 .Relatively movable pumping members driven by relatively movable working members
339 ..Nonrotary pumping and fluid motor working members
340 ...Common expansible chamber for oppositely movable working members
341 ....Mechanically interconnected
342 ...Including closed fluid interconnection between working members
343 ...Including mechanical interconnection to cause relative motion
344 ...Position of one working member controls motive fluid valve for another
345 ....Control by single member responsive to position of each of plural working members
346 ....Independently operated valve for each working member
347 ...Single member controls motive fluid for each working member
348 .Common rotary pumping and fluid motor working member
349 .Common pump and motor chamber
350 .Motor rotor intermediate coaxial pump rotors
351 .Pump rotor intermediate coaxial motor rotors
352 .Motor within rotary pumping member
353 ..Armature within pumping member
354 ...Stator within armature
355 .Pump within rotary working member
356 ..Pump within armature
357 .Pump fluid communicates with sealed chamber containing armature
358 .Pump - motor unit raised in vertical conduit by pressure fluid applied below unit
359 .Adjustable motor and pump rotor unit or relatively adjustable aligned pump and motor rotary shafts
360 .Including means for facilitating assembly or disassembly of pump to or from motor or fixed support
361 .Pump and motor unitarily adjustable relative to fixed support
362 .Pump and motor interconnected by endless flexible transmission element
363 .Resiliently mounted pump or motor
364 .Internal-combustion engine
365 .Axial thrust balancing means for rotary pump and motor
366 .Including means utilizing pump fluid for augmenting cooling, lubricating, sealing, or cleaning of motor
367 ..Heat exchange means between pump fluid and secondary motor contacting fluid
368 ..Including additional means for motivating fluid flow to or from motor (e.g., auxiliary pump, pump fluid induced flow path, etc.)
369 ..Pump fluid directed to motor via downstream branched flow path
370 ...Recirculated through pump
371 ..Pump fluid flows serially from motor through pump
372 .Interrelated or common lubricating or cooling means for pump and motor
373 .With means to prevent heat transfer between pump and motor
374 .Including manual, mechanical, or diverse drive
375 .Fluid motor
376 ..Steam motor discharge into pump fluid
377 ..Serial flow fluid from pumping chamber through motor working chamber
378 ...Pulsator type
379 ..With motive fluid generator
380 ...Internal-combustion engine
381 ...Combustion products generator for motor

	MOTOR DRIVEN
	.Fluid motor
	..With motive fluid generator
382	...Plural pumping members; one additionally supplying motive fluid for second
383	...Pulsator or fluid link
384	....Pneumatic
385	....With means to supply or vent pulsator fluid
386	.....Working member position responsive
387	.....Pulse piston position responsive
388	.....Pressure responsive
389	....Plural collapsible walls
390	...Fluid pump
391	..Motor discharge into or upstream of pumping chamber
392	..Common pumping and motor working member
393	...With additional unitary common pumping and motor working member
394	...Collapsible common member
395	....Diaphragm
396	..Rectilinearly reciprocating motor working members coaxial with intermediate unitary pumping member
397	..Rectilinearly reciprocating pumping members coaxial with intermediate unitary motor working member
398	..Rectilinearly reciprocating cylinder and piston-type motor
399	...Rectilinearly reciprocating cylinder and piston-type pump
400	....Interconnected moving cylinder and piston
401	....Integral pump and motor pistons
402	.....Constantly applied force in education stroke direction
403	.....Double acting motor piston
404	......Double acting pump piston
405	..Rotary motor
406	...Unitary pump and motor rotors
407	....Overhung from central support
408	....Axial flow motor and pump
409	....Axial flow motor and centrifugal pump
410	.Electric or magnetic motor
411	..Including electric power generating or storage means
412	..Collapsible wall pump
413	...Diaphragm type
414	..Internal - external pressure balancer
415	..Reciprocating rigid pumping member
416	...Reciprocating motor
417	....Unitary pump and motor working member
418	.....Opposed pumping member faces (e.g., double acting)
419	...Relatively movable pumping members
420	..Pump magnetically coupled to rotary drive
421	..Trapped air motor seal (i.e., diving bell type)
422	..Sealed service conduit
423.1	..Rotary motor and rotary nonexpansible chamber pump
423.2	...Vacuum cleaner
423.3	...Submersible type
423.4	...Turbomolecular pump
423.5	...Plural units
423.6	...Having nonflexible means to transmit power between motor shaft and pump shaft
423.7	...With specific motor details
423.8	...Having additional means to remove heat from pump or motor
423.9	...Having means to prevent debris from entering pump
423.15	...Having means to mount pump and motor in working position
423.11	...Having means to prevent fluid leaking between pump and motor
423.12	...Having bearing
423.13	....With lubricator
423.14	...With specific housing details
424.1	...Supported for rotation on vertical axis
424.2	....Motor mounted below pump
425	SEPARATE MANUAL AND POWER DRIVEN PUMPING MEMBERS
426	PLURAL PUMPS WITH INDIVIDUAL OR RELATIVE CONTROL
427	.Distributor adjustment
428	.Bypass control
429	.Adjustment with respect to common drive
430	INCLUDING MEANS TO (1) AGITATE PUMP FLUID, OR (2) PREVENT FOREIGN MATERIAL SETTLING FROM PUMP FLUID
431	.By application of separate fluid
432	INCLUDING APPLICATION OF SEPARATE FLUID TO PUMP VALVE
433	.Liquid pool seal for gas pump valve
434	INCLUDING SEPARATE PORT ON NON-CYCLIC VALVE FOR DRAINING PUMP PORTION
435	INCLUDING SEPARATE PORT ON NON-CYCLIC VALVE FOR VENTING OR FILLING PUMP PORTION
436	TRANSVERSELY MOVABLE IMPELLING MEMBER (E.G., PADDLE)
437	EXPANSIBLE CHAMBER TYPE
438	.Liquid coolant introduced into gas pump chamber or inlet
439	.Having additional chamber intake connection from nonpumping space
440	.Having separate noncyclic valve (e.g., bypass, etc.)
441	..For serial control of pump fluid (e.g., throttle valve)
442	.Selectively usable plural inlet or outlet distributors for single chamber
443	.Pressure responsive distributor opened responsive to pumping member position
444	..Distributor in piston
445	...Including means to open distributor in fixed chamber wall
446	.Having means for holding pressure responsive distributor open
447	.Pressure responsive distributor continuously biased open
448	.Pump mounted in vertical tubular flow conduit removable as unit by driving rod manipulation
449	..Removable unit having piston normally fixed in conduit
450	..With latching or anchoring means released by rod movement
451	.Valve element mounted in fixed chamber wall removable with pumping member
452	..By separable engageable connecting elements
453	...Threaded connecting elements
454	.Including valve assembly, disassembly, or inspection facilitating means
455	.Having valve parts relatively moved for nonvalving function
456	.Relatively movable serial distributors
457	..Including distributor formed by moving cylinder or liner
458	..Plural pressure responsive distributors
459	...Located within piston (e.g., valved piston)
460	.Moving cylinder
461	..Cylinder rotates or oscillates about longitudinal axis

	EXPANSIBLE CHAMBER TYPE
	.Moving cylinder
462	..Unidirectionally rotating cylinder
463	...Having second cylinder unitary with piston of first
464	..Cylinder oscillates about axis transverse to longitudina axis
465	...Inlet or discharge controlled by cooperating ports in cylinder or piston and fixed member
466	..Inlet or discharge controlled by cooperating port in reciprocating cylinder and fixed member
467	..Relatively movable cylinders
468	..Having integral pump piston or external pumping face
469	..Cylinder and piston reciprocate on common axis
470	.Biasing means effects induction stroke of abutment driven, vacuum producing pumping member
471	.Biasing means effects eduction stroke of abutment driven, pressure producing pumping member
472	.Bellows-type chamber
473	..Plural bellows
474	.Elongated flexible chamber wall progressively deformed
475	..Plural chambers
476	..Deformation by rolling or sliding engagement member
477	...Plural spaced engagement members or member portions
478	.Inlet and discharge distributors at opposite ends of tubular flexible wall pumping chamber
479	.Distributor formed from integral portion of flexible wall pumping member
480	.Valve in collapsible wall pumping member
481	.Oscillating pumping member
482	..Inlet distributor in abutment wall for pumping member
483	...Having discharge distributor in pumping member
484	..Distributor in pumping member
485	.Delivery to different ports on successive strokes
486	.Plural pumping members in single pump chamber
487	..Coaxial reciprocating pumping members
488	...Form opposite chamber walls
489	.Control by withdrawal or tilting of pump piston relative to cylinder
490	.Pumping member position controlled port
491	..Common pumping member controls inlet or discharge for plural chambers
492	...Control by movement of pumping member about axis
493	..Including plural controlled inlet or outlet flow paths
494	...Having means to selectively effect control at different positions of pumping member stroke
495	...Pumping member comprises valved piston
496	..Having serial control of inlet or discharge flow path
497	..Pumping member controlled end wall port
498	..Longitudinally spaced inlet and discharge sidewall ports
499	..Having means to effect control at different positions of pumping member stroke
500	..Control by movement of pumping member about axis
501	..Having coextensive distributor opposite pumping member end face
502	.Multiple cyclic outlet paths
503	.Multiple cyclic inlet paths
504	.Plural outlet paths to single discharge line acting under different conditions
505	.Electrically or magnetically actuated distributor
506	.Distributor movement adjustable
507	.Distributor moved by separate fluid responsive surface
508	..Including mechanical actuation
509	.Distributor part forms traversed movable pump chamber wall portion
510	.Mechanically actuated distributor
511	..Piston carried distributor, one frictionally engages chamber wall, drive rod integral with other (e.g., piston driven by valve element through lost motion connection, etc.)
512	...Unitary distributor element controls inlet or discharge for plural chambers
513	...Conical engagement
514	..Distributor in piston
515	..Plural pumping chambers
516	...Common element forms inlet or discharge distributor for plural chambers
517	....Element forms both inlet and discharge distributor
518	..Common element forms inlet and discharge distributor
519	...Element moves about axis
520	..Distributor abutted by or frictionally engaged with pumping member
521	.Plural pumping chambers
522	..Discharge conduit for first chamber communicates with nonpumping portion or second pumping member
523	..Including valved piston
524	...Unitary or interconnected elements form inlet or discharge distributors for plural chambers
525	...Common piston includes valves for plural axially aligned chambers
526	....Common inlet or discharge conduit mounted on piston
527	....Fluid conduit for one chamber extends through portion of another
528	...Fluid conduit for one chamber extends through portion of another
529	...Parallel laterally spaced relatively movable pistons
530	...Including nonvalved piston
531	..Unitary or interconnected elements form inlet or discharge distributors for plural chambers
532	...Unitary element movable about an axis
533	..Common discharge conduit interposed between spaced parallel chambers
534	..Chambers formed at opposite ends of rectilinearly moving pumping member
535	...All discharge distributors positioned laterally of pumping member path
536	....Inlet and discharge distributors positioned laterally of pumping member path
537	.....All distributors positioned on same side of pumping chamber
538	..Inlet and discharge distributors at adjacent end of aligned chambers
539	..Parallel laterally spaced relatively movable pumping members
540	.Having pulsation dampening fluid receiving space

	EXPANSIBLE CHAMBER TYPE
	.Having pulsation dampening fluid receiving space
541	..Space formed on pumping member
542	..Inlet and discharge spaces
543	..Direct contact with confined compressible fluid
544	...Manually operated pump
545	.Valved piston
546	..Piston contains inlet and outlet valves
547	..Fluid conduit fixed to piston
548	..Having rigidly attached imperforate wall member
549	..Having separate means biasing valve closed
550	..Flexible
551	..Hinged
552	..Reciprocating
553	...Annular
554	...Ball type
555.1	.Fluid serially moved to opposite side of pumping member
555.2	..Well swabs
556	..Control by movable rigid piston side wall
557	.Pump chamber in constant communication with inlet or discharge conduit
558	.First distributor includes passage controlled by second distributor (i.e., inlet and outlet)
559	.Having pumping chamber pressure responsive distributor
560	..Single unitary element forms inlet and discharge distributor
561	..Pumping member position responsive stop for distributor
562	..Having means on pumping member for accommodating distributor portion
563	..Similar inlet and discharge distributors of different size or material
564	...Annular-type distributors
565	..Hinged inlet and discharge distributors in aligned conduits
566	..Nonmetallic inlet or discharge distributor
567	..Inlet and discharge distributors in coaxial ports
568	...Transverse to axis of pumping member
569	..Distributor positioned opposite pumping member end face
570	...Distributor coextensive with pumping member end face
571	...Inlet and discharge distributors
572	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
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900	SLURRY PUMPS (E.G., CONCRETE)
901	CRYOGENIC PUMPS
902	HERMETICALLY SEALED MOTOR PUMP UNIT
903	TREADLE OPERATED
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	DIGEST
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DIG 1	Materials digest

CLASS 418 ROTARY EXPANSIBLE CHAMBER DEVICES

DECEMBER 1990

1 METHODS
2 WITH SIGNAL, INDICATOR OR TRANSPARENT INSPECTION MEANS
3 DIVERSE ROTARY EXPANSIBLE CHAMBER DEVICES
4 WORKING MEMBER OR CYLINDER SURFACE HAS ALTERNATE LINEAR AND CURVILINEAR MOVEMENT (E.G., ENDLESS)
5 MULTISTAGE
6 .One working chamber stage encircles another
7 .Successive stages alternately produce work
8 .Working fluid engages working member serially in circumferentially spaced working chambers
9 .Interengaging rotary members
10 ..Three or more
11 .Sliding abutment
12 .Swinging abutment
13 .Sliding vane
14 WITH DELAYED LOAD
15 WITH PLURAL WORKING FLUID INLET OR OUTLET PASSAGES
16 WITH CHANGEABLE WORKING CHAMBER MAGNITUDE
17 .Speed controlled
18 .Intermittently accelerated and receding members rotate in same path (alternating piston type)
19 .Intermeshing rotary members
20 ..Three or more
21 ..Movable member moved axially
22 .Axially or radially spaced working chambers
23 .By adjustably limiting vane or abutment movement
24 .Spring or fluid biased movable member
25 ..Positively biased in opposite directions
26 ...With working fluid bias
27 ..Spring
28 .By axial movement of movable member
29 .Rotating inner working or reacting member repositioned relative to cylinder
30 .By cylinder or cylinder portion pivotal movement
31 .Cylinder or cylinder portion moved linearly and radially
32 SELF-ACTING UNIDIRECTIONAL FLOW WITH REVERSE ROTATION OR REVERSE FLOW WITH UNIDIRECTIONAL ROTATION
33 INTERMITTENTLY ACCELERATED AND RECEDING MEMBERS ROTATE IN SAME PATH (ALTERNATING PISTON TYPE)
34 .Moving cylinder
35 .Each a working member
36 ..Working member movement controlled by interengaging rotating members
37 ..Working member movement controlled by member rotating about parallel axis
38 ..Cam controlled working member movement
39 CONVERTIBLE OR CHANGEABLE BY ASSEMBLY OR DISASSEMBLY
40 SPEED CONTROLLED
41 .Rotating weight valves working fluid passage
42 .Rotating weight positioned on or within inner rotating member
43 .Weight rotates about axially extending axis
44 ..Other than working member axis
45 COLLAPSIBLE PROGRESSIVELY DEFORMED WORKING CHAMBER WALL
46 WITH REMOVAL OR ACCOMMODATION OF SOLID FOREIGN MATERIAL IN WORKING FLUID
47 .With filter
48 UNLIKE HELICAL SURFACES ON RELATIVELY WOBBLING ROTATING MEMBER AND ENCOMPASSING CYLINDER (E.G., MOINEAU TYPE)
49 NUTATING WORKING MEMBER
50 .Non-metallic working member or working chamber portion
51 .With mechanical sealing
52 .Working member common to plural working chambers
53 ..Axially spaced working chambers
54 WORKING MEMBER HAS PLANETARY OR PLANETATING MOVEMENT
55.1 .Helical working member, e.g., scroll
55.2 ..Having specific wrap or end plate, e.g., shape, material, coating
55.3 ..With specific rotation preventing or rotation coupling means
55.4 ..With mechanical sealing
55.5 ..With biasing means, e.g., axial or radial
55.6 ..With lubricant, liquid seal or nonworking fluid separation
56 .Non-metallic working member, cylinder or partition
57 .Adjustable or resiliently biased working member
58 .Plural working members or chambers
59 ..Radially spaced working chambers
60 ..Axially spaced working members
61.1 ..Circumferentially spaced working chambers
61.2 ...Rotor has one more lobe than cylinder (i.e., Wankel type)
61.3 ...Rotor has one less lobe than cylinder (i.e., Gerotor type)
62 .Partition pivotally connected to working member and cylinder
63 .With relatively movable partition member
64 ..Slidable in working member
65 ..Having working fluid passage
66 ..Integral with working member
67 ..Pivoted to working member
68 ROTATING INTERNAL MEMBER ROTATES AND OSCILLATES OR RECIPROCATES
69 WITH FRANGIBLE DRIVE CONNECTION OR CLUTCH
70 WITH RAPID DISASSEMBLY FEATURE (I.E., WITHOUT TOOLS)
71 PRESSURE FLUID RADIALLY BALANCES WORKING OR ROTATING ABUTMENT MEMBER
72 .With counterbalancing fluid passage through rotating member
73 .Counterbalancing fluid directed to rotating member shaft bearing
74 .Counterbalancing fluid directed to intertooth spaces or spaces between adjacent vanes
75 GROOVED ABUTTING CYLINDER-ROTATING MEMBER END SURFACES
76 .Non-working fluid directed to groove
77 .Grooved working member surface
78 .Working fluid portion fills intertooth spaces or spaces between adjacent vanes
79 .Radial groove
80 .Radially spaced grooves
81 .Annular groove or recess completely encircles rotation axis
82 .Groove communicates with vane slot
83 HEAT EXCHANGE OR NON-WORKING FLUID LUBRICATING OR SEALING
84 .With condition responsive control of non-working fluid
85 .With heat exchange means for non-working fluid

	HEAT EXCHANGE OR NON-WORKING FLUID LUBRICATING OR SEALING
86	.Heat exchange by diverted incoming or outgoing working fluid
87	.Valve regulated non-working fluid
88	.With pump for non-working fluid
89	.With filter for non-working fluid
90	.Wick or absorbent material feed
91	.Non-working fluid passage in inner working or reacting member
92	..With non-working fluid passage in partition
93	..Non-working fluid biases vane
94	..With non-working fluid passage in drive shaft
95	.Vent or non-seal means prevents working and non-working fluid intermix
96	.Outer cylinder member immersed or submerged in non-working fluid
97	.Non-working and working fluids intermix in working chamber
98	..Non-working fluid initially directed to shaft bearing
99	..Non-working fluid initially directed to working member
100	.Intermixed incoming working and non-working fluids
101	.With coolant air impelling means or finned cylinder surface
102	SHAFT OR TRUNNION LUBRICATION OR SEALING BY DIVERTED WORKING FLUID PORTION
103	WORKING MEMBER PERIPHERAL SURFACE COMPRISES RELATIVELY CIRCUMFERENTIALLY MOVABLE SEGMENTS
104	WITH MECHANICAL SEALING
105	.Abutment position adjustment
106	.Vane position adjustment
107	.By changing working member or cylinder relative position
108	..Radially adjustable
109	...Adjustable working member
110	.By axially relatively moving working member sections
111	.By axially relatively moving vane or abutment sections
112	.Seal on working member periphery separates inlet and outlet ports
113	..Seal on working member peripheral projection engages cylinder working chamber surface (e.g., apex seals)
114	...Adjustable or expandable peripheral projection
115	...Weight balanced or adjustable seal
116	...Ring seal or arcuate seal portion
117	...With plural circumferentially spaced peripheral seals
118	...Swinging seal
119	...Integral peripheral and depending side seal
120	...With axially movable side seal
121	....Spring biased
122	...Spring biased
123	....Fluid biased
124	...Fluid biased
125	.Seal on cylinder engaging rotary member separates inlet and outlet ports
126	..Engages plural rotary members
127	..Adjustable
128	...With resilient interposed member
129	..With resilient biasing means
130	.Cup shaped cylinder axially movable to abut cylinder side
131	.Axially movable end wall or end wall portion
132	..Progressively biased from inlet to outlet
133	..Surface abutting working member abuts another coplanar cylinder surface portion
134	..Adjustable end wall
135	..Spring biased
136	.Seal element between working member and vane
137	..Mounted on working member
138	...Oscillating
139	.Seal element between abutment and cylinder or working member
140	.Seal element between working member and cylinder
141	..Labyrinth
142	..On working member
143	...On working member circumferential periphery
144	..Between adjacent cylinder and working member sides
145	.Seal element between vane and cylinder
146	..On vane side
147	..Movable seal on vane
148	...Positively urged to engage cylinder
149	.Seal element between stationary cylinder parts
150	WORKING CHAMBER SURFACE EXPRESSED MATHEMATICALLY
151	WEIGHT BALANCED WORKING MEMBER OR PARTITION
152	NON-METALLIC WORKING MEMBER, CYLINDER OR PARTITION
153	.Resilient
154	..Partition integral with working member
155	...Extending from working member side
156	RESILIENT WORKING MEMBER, CYLINDER OR PARTITION
157	SHOCK OR PRESSURE RELIEVING YIELDABLE PERIPHERAL WORKING MEMBER OR CYLINDER SURFACE PORTION
158	MAGNETICALLY BIASED VANE OR ABUTMENT
159	ADJUSTABLE WORKING CHAMBER PERIPHERAL WALL CONTROLS WORKING FLUID FLOW
160	MOVING CYLINDER
161	.Rotating
162	..With axially movable partition member
163	...Cylinder and internal member rotate about non-parallel axes
164	..Rotary internal reacting member
165	...Cylinder engages plural internal reacting members
166	...Intermeshing peripheral surfaces
167	....With intake or exhaust passage in internal member
168	....Cylinder periphery comprises alternate tooth and passage portions (e.g., cage type)
169	.....With filler element (e.g., crescent)
170	....With filler element (e.g., crescent)
171	....Inner member has five or more teeth
172	...With movable partition member
173	....Partition radially slidable in internal member
174	....Partition radially slidable in cylinder
175	..Moving partition on stationary member
176	..Swinging partition
177	..Sliding partition
178	WITH WEAR SURFACE TREATMENT OR INTEGRALLY PLATED WEAR LAYER
179	SPECIFIC MATERIAL
180	APERTURED BYPASS TO PRESSURIZE OR RELIEVE WORKING CHAMBER ZONE OF INTERMEDIATE PRESSURE
181	COMBINED
182	RELATIVELY MOVABLE WORKING MEMBER AND DRIVE SHAFT AXES

183	WITH SUPPLY OR EXHAUST PASSAGE IN WORKING MEMBER
184	.Passage includes vane slot
185	.Controlled by working member carried valve
186	.Supply and exhaust passages in working member
187	..Passage extending through working member center of rotation
188	.Supply or exhaust passage through working member center of rotation
189	TRAPPED FLUID RELIEF
190	.With tooth modification
191	INTERENGAGING ROTATING MEMBERS
192	.With movable partition
193	..Axially moving
194	.Each tapered
195	.Non-parallel axis
196	.Three or more
197	..Helical or herringbone
198	.Intermittent rotation
199	.Multiple units
200	..With axially spaced working members
201.1	.Helical or herringbone
201.2	..With valve
201.3	..Having specific tooth shape
202	..Each member having opposed axially spaced helices
203	..Axially counterbalanced
204	.Eccentrically mounted
205	.Like rotary members
206	..Having each radial protuberance of like dimension
207	RELATIVELY MOVING WORK TRANSMITTING BARRIERS MOVE IN SEPARATE INTERSECTING CHAMBERS
208	MOVABLE INTERMEDIATE PARTITION ENGAGES PERIPHERIES OF PLURAL SPACED WORKING MEMBERS
209	PLURAL WORKING CHAMBERS
210	.Axially spaced rotating members rotate on common axis
211	..With axially moving vane or abutment
212	..Intermediate member separates and engages plural working members
213	...Plural intermediate members
214	...Interconnected abutments
215	.Axially spaced working chambers
216	..Helical working member or working member portion
217	..Axially moving abutment or vane
218	...Moving about non-parallel axis
219	...Vane
220	HELICAL WORKING MEMBER
221	MOVING ABUTMENT AND VANE
222	SEPARABLE ABUTMENT
223	WITH SECONDARY VANE OR ABUTMENT MOVING MEANS
224	VALVED VANE OR ABUTMENT
225	VANE OR ABUTMENT COMPRISES ROTATABLE ELEMENT
226	.Rotates about non-parallel axis
227	.Positively rotated
228	AXIALLY MOVING VANE OR ABUTMENT
229	.Sliding
230	..Positively biased
231	...In opposite directions
232	....Spring or fluid bias
233	.Radially pivoted vane
234	TAPERED VANE OR ABUTMENT (E.G., WEDGE SHAPED)
235	WEAR ELEMENTS OR ANTIFRICTION MEANS IN VANE OR ABUTMENT SLOT
236	NON-RADIALLY POSITIONED SLIDING VANE OR ABUTMENT
237	.Arc shaped
238	.Positively biased
239	ALTERNATELY USABLE VANE OR ABUTMENT STRUCTURE FOR REVERSE WORKING MEMBER ROTATION
240	INTERCONNECTED ABUTMENTS
241	ABUTMENT OR VANE HAS CONCURRENT ROCKING AND RADIALLY SLIDING MOVEMENT
242	SPACED OSCILLATING ABUTMENT PORTIONS ENGAGE WORKING MEMBER
243	POSITIVELY ACTUATED ABUTMENT
244	.Cam actuated
245	..In opposite directions
246	..Spring or fluid biased in opposite direction
247	.In opposite directions
248	.Spring biased
249	.Fluid biased
250	..Winged abutment
251	..With working fluid passage in abutment
252	WITH PROVISION FOR QUICK VANE REPLACEMENT
253	INTERCONNECTED VANES
254	.Integrally connected
255	..Diametrically aligned
256	.Encompassing moving member interconnects plural vanes
257	.Interposed movable member interconnects plural vanes
258	..Spring
259	POSITIVELY ACTUATED VANE
260	.Cam actuated
261	..In opposite directions
262	...With pivoted interposed lever
263	...With spring or fluid bias
264	...With roller
265	.In opposite directions
266	.Spring biased
267	..With fluid bias
268	.Fluid biased
269	..Constantly interposed pressure fluid spreads plural vanes
270	MISCELLANEOUS
	******************************
	DIGEST
	******************************
DIG 1	NON-WORKING FLUID SEPARATION

CLASS 419 POWDER METALLURGY - PROCESSES

1 POWDER METALLURGY PROCESSES WITH HEATING OR SINTERING
2 .Making porous product
3 .Making articles of indefinite length
4 ..Filaments or fibers
5 .Making composite or hollow article
6 ..Powder next to powder
7 ...One or more components not compacted
8 ..Powder next to solid
9 ...Powder not compacted
10 .Metal and nonmetal in final product
11 ..Nonmetal is elemental carbon
12 ..Boride containing
13 ..Nitride containing
14 ..Carbide containing
15 ...Complex or multiple carbides
16 ....With another binary nonmetal
17 ...Single carbide
18 ....Tungsten carbide
19 ..Oxide containing
20 ...Rare earth oxide
21 ...Silver metal with metal oxide
22 ...Copper oxide
23 .Powder shape or size characteristics
24 ..Filaments or fibers
25 .Controlled cooling after sintering
26 .Post sintering operation
27 ..Impregnation
28 ..Subsequent working
29 ..Subsequent heat treatment (e.g., annealing, etc.)
30 .Powder pretreatment (prior to consolidation or sintering)
31 ..Heat treatment of powder
32 ..Mechanical blending
33 ..Comminuting
34 ..Chemical blending
35 ..Coating
36 ..Addition of fugitive material
37 ...Additional material is solid
38 .Consolidation of powder prior to sintering
39 ..Specific pressure or lack or pressure recited
40 ...Slip or slurry
41 ..Extruding
42 ..Isostatic or Hydrostatic
43 ..Rolling
44 .Pretreatment of consolidated powders
45 .Sintering which includes a chemical reaction
46 .Alloying occurs during sintering
47 .Liquid phase sintering
48 .Heat and pressure simultaneously to effect sintering
49 ..Hot isostatic pressing (HIP)
50 ..Hot rolling
51 ..Multiaxial (Not HIP)
52 ..Heating by electrical means other than radiant energy
53 .Plural heating steps including sintering
54 ..Different temperatures
55 ..Additional operation between heating steps
56 .Special medium during sintering
57 ..Special atmosphere
58 ...Hydrogen or hydrogen plus nitrogen (Nitrogen per se in 57)
59 ...Hydrocarbon or derivative (e.g., CH4, etc.)
60 ...Vacuum
61 FORMING ARTICLES BY UNITING RANDOMLY ASSOCIATED METAL PARTICLES
62 .Powder pretreatment
63 ..Includes a chemical reaction
64 ..Includes coating of particles
65 ..Includes adding a binder material
66 .Consolidation of powders
67 ..Extrusion
68 ..Isostatic/Hydrostatic pressing
69 ..Rolling

CLASS 420 ALLOYS OR METALLIC COMPOSITIONS

1	RADIOACTIVE
2	.Actinide base; singly or in combination
3	..Uranium base
4	.Iron base
5	.Magnesium base
6	.Nickel or cobalt base
7	.Aluminum base
8	FERROUS (I.E., IRON BASE)
9	.1.7 percent or more carbon containing
10	..Six percent or more total group IV, V or VI transition metals containing
11	...Eight percent or more chromium containing
12	....Molybdenum, tungsten or vanadium containing
13	..2.7 percent or more carbon equivalent containing (i.e., cast iron)
14	...Boron containing
15	...Chromium containing
16	....Nickel containing
17	.....Molybdenum containing
18	...Processes of adding magnesium
19	....Adding magnesium as a liquid, vapor or as a solid agent entrained by gas (e.g., fluidized)
20	....Flowing molten iron alloy onto solid magnesium containing agent, or adding solid magnesium containing agent to molten stream of iron alloy
21	....Mechanically plunging magnesium containing agent below surface of iron alloy melt
22	....Separate addition of plural agents, at least one containing magnesium
23	....Magnesium containing agent is coated, impregnated, or compacted (e.g., briquetted, coated particles)
24	....Magnesium present in agent only as a compound with a nonmetal
25	....In agent also containing silicon, rare earth, or alkaline earth metal
26	...Copper containing
27	...Nickel or molybdenum containing
28	...Over .1 percent aluminum containing
29	...Processes
30	....Adding rare earth or alkaline earth metal
31	....Adding sulfur, selenium or tellurium
32	....Adding vanadium, titanium, niobium, or zirconium
33	....Adding silicon
34	.Nine percent or more chromium containing
35	..Noble metal containing
36	..Cobalt containing
37	...Molybdenum or tungsten containing
38	....Nickel containing
39	....Copper containing
40	..Rare earth containing
41	..Lead, bismuth, antimony, calcium, selenium or tellurium containing
42	..Over 0.05 percent sulfur, over 0.04 percent phosphorus or sulfur or phosphorus added in any amount to promote machinability
43	..Eight percent or more nickel containing
44	...Over 2 percent manganese containing
45	....Copper containing
46	....Molybdenum or tungsten containing
47	.....Group IV or V transition metal containing
48	....Group IV or V transition metal containing
49	...Copper containing
50	...Over 1.5 percent silicon containing
51	....Group IV or V transition metal containing
52	...Molybdenum containing
53	....Group IV or V transition metal containing
54	...Group IV or V transition metal containing
55	...Over 0.1 percent carbon containing
56	..Eight percent or more total nickel plus manganese containing
57	...Molybdenum or tungsten containing
58	...Copper containing
59	...Over 0.20 percent nitrogen containing
60	..Copper containing
61	...Molybdenum or tungsten containing
62	..Over 0.1 percent aluminum containing
63	...Molybdenum or tungsten conaining
64	..Boron containing
65	..0.25 percent or more nitrogen containing
66	...Group IV or V transition metal containing
67	..Molybdenum or tungsten containing
68	...Titanium, zirconium or hafnium containing
69	...Vanadium, niobium or tantalum containing
70	..Group IV or V transition metal containing
71	..Processes
72	.Eight percent or more manganese containing
73	..Nickel containing
74	..Chromium containing
75	..Titanium containing
76	..Copper containing
77	.Four percent or more aluminum containing
78	..Over 2 percent silicon containing
79	..Chromium containing
80	..Nickel or cobalt containing
81	..Zirconium, vanadium or titanium containing
82	.Noble metal containing
83	.Rare earth metal containing
84	.Lead, bismuth, selenium, tellurium or calcium containing
85	..Processes
86	...Adding lead
87	.Over 0.05 percent sulfur, over 0.04 percent phosphorus or sulfur or phosphorus added in any amount to promote machinability
88	..Processes of making or treating alloy containing over 0.04 percent phosphorus
89	.Copper containing
90	..Chromium containing
91	...Nickel containing
92	..Nickel containing
93	..Vanadium, zirconium, titanium or molybdenum containing
94	.Over 10 percent nickel containing
95	..Cobalt containing
96	..Molybdenum containing
97	..Chromium containing
98	..Over 1 percent silicon containing
99	.One percent or more carbon containing, but less than 1.7 percent
100	..Chromium containing
101	...Molybdenum containing
102	....Cobalt containing
103	.Over 0.1 percent aluminum containing, but less than 4 percent
104	.Chromium containing, but less than 9 percent
105	..Molybdenum containing

FERROUS (I.E., IRON BASE)
.Chromium containing, but less than 9 percent
..Molybdenum containing
106 ...Boron or beryllium containing
107 ...Cobalt containing
108 ...Nickel containing
109 ....Vanadium, titanium or zirconium containing
110 ...Titanium, zirconium or niobium containing
111 ...Vanadium containing
112 ..Nickel containing
113 ...Tungsten containing
114 ..Tungsten containing
115 ..Processes
116 ...Including reducing a chromium compound
117 .Two percent or more silicon containing
118 ..Titanium, molybdenum, tungsten or vanadium containing
119 .Nickel containing, but 10 percent or less
120 .1.5 percent or more manganese containing, but less than 8 percent
121 .Boron containing
122 .Tungsten containing
123 .Molybdneum containing
124 ..Vanadium, tantalum or titanium containing
125 .Zirconium containing
126 .Titanium containing
127 .Vanadium, tantalum or niobium containing
128 .Nitrogen containinig
129 .Processes
400 ALKALI METAL BASE
401 BERYLLIUM BASE
402 MAGNESIUM BASE
403 .Silver containing
404 ..Manganese containing
405 .Lanthanide containing
406 ..Zirconium containing
407 .Aluminum containing
408 ..Zinc containing
409 ...Manganese containing
410 ..Manganese containing
411 .Zinc containing
412 ..Manganese containing
413 .Manganese containing
414 .Zirconium containing
415 ALKALINE EARTH METAL BASE
416 RARE EARTH METAL BASE SINGLY OR IN COMBINATION
417 TITANIUM BASE
418 .Aluminum containing
419 ..Tin containing
420 ..Vanadium containing
421 .Chromium or molybdenum containing
422 ZIRCONIUM OR HAFNIUM BASE
423 .Copper containing
424 VANADIUM BASE
425 NIOBIUM BASE
426 .Titanium, zirconium, or hafnium containing
427 TANTALUM BASE
428 CHROMIUM BASE
429 MOLYBDENUM BASE
430 TUNGSTEN BASE
431 .Carbon, boron or nitrogen containing
432 .Rhenium or noble metal containing
433 RHENIUM BASE
434 MANGANESE BASE
435 COBALT BASE
436 .Chromium containing
437 ..Aluminum containing
438 ...Titanium containing
439 ..Titanium containing
440 ..Iron containing
441 NICKEL BASE
442 .Chromium containing
443 ..Rare earth, magnesium or alkaline earth metal containing
444 ..Noble metal containing
445 ..Aluminum containing
446 ...Titanium containing
447 ....Tantalum, niobium, vanadium, or hafnium containing
448 .....Molybdenum or tungsten containing
449 ....Zirconium or boron containing
450 ....Molybdenum or tungsten containing
451 ..Titanium containing
452 ..Iron or manganese containing
453 ...Molybdenum or tungsten containing
454 ....Cobalt containing
455 .Rare earth containing
456 .Noble metal containing
457 .Copper containing
458 ..Iron containing
459 .Iron or manganese containing
460 .Aluminum containing
461 OSMIUM OR IRIDIUM BASE
462 RUTHENIUM OR RHODIUM BASE
463 PALLADIUM BASE
464 .Copper containing
465 .Platinum containing
466 PLATINUM BASE
467 .Rhodium containing
468 .Nickel containing
469 COPPER BASE
470 .Tin containing
471 ..Aluminum containing
472 ..Phosphorus containing
473 ..Iron, manganese or nickel containing
474 ..Lead containing
475 ...Zinc containing
476 ..Zinc containing
477 .Zinc containing
478 ..Aluminum containing
479 ...Nickel containing
480 ...Manganese containing
481 ..Nickel containing
482 ..Manganese containing
483 ..Noble metal containing
484 ..Refractory metal containing
485 .Nickel containing
486 ..Aluminum containing
487 ..Iron or manganese containing
488 ..Refractory metal containing
489 .Aluminum, gallium, indium, or thallium containing
490 .Silicon containing
491 .Lead containing
492 .Titanium, zirconium or hafnium containing
493 .Manganese containing
494 .Beryllium, magnesium, or alkaline earth metal containing
495 .Other refractory metal containing
496 .Iron or cobalt containing
497 .Noble metal containing
498 .Cadmium, or mercury containing
499 .Phosphorus, arsenic, antimony, or bismuth containing
500 .Sulfur, selenium, or tellurium containing
501 SILVER BASE
502 .Copper containing
503 ..Other noble metal containing
504 ..Zinc, or cadmium containing
505 .Other noble metal containing
506 .Zinc, or cadmium containing
507 GOLD BASE
508 .Palladium containing
509 ..Platinum containing
510 .Platinum containing

GOLD BASE
511 .Silver containing
512 .Iron, cobalt, or nickel containing
513 ZINC BASE
514 .Aluminum containing
515 ..Copper containing
516 ...Mangesium containing
517 ...Tin containing
518 ...Manganese, iron, cobalt, or nickel containing
519 ..Magnesium containing
520 ..Manganese, iron, cobalt, or nickel containing
521 .Copper containing
522 ..Manganese, iron, cobalt, or nickel containing
523 .Cadmium containing
524 .Tin containing
525 CADMIUM BASE
526 MERCURY BASE
527 .Silver containing
528 ALUMINUM BASE
529 .Copper containing
530 ..Tin containing
531 ..Zinc containing
532 ...Magnesium containing
533 ..Magnesium containing
534 ...Silicon containing
535 ....Titanium, zirconium, hafnium, vanadium, niobium, or tantalum containing
536 ....Cadmium, lead or bismuth containing
537 ..Silicon containing
538 ..Iron, cobalt, or nickel containing
539 ..Silver containing
540 .Zinc containing
541 ..Magnesium containing
542 .Magnesium containing
543 ..Titanium, zirconium, hafnium, vanadium, niobium, or tantalum containing
544 ...Silicon containing
545 ...Chromium containing
546 ..Silicon containing
547 ..Iron, cobalt, or nickel containing
548 .Silicon containing
549 ..Alkali, or alkaline earth metal containing
550 .Iron, cobalt, or nickel containing
551 ..Titanium, zirconium, hafnium, vanadium, noobium or tantalum containing
552 .Titanium, zirconium, hafnium, vanadium, niobium, or tantalum containing
553 ..Manganese containing
554 .Cadmium, lead, or bismuth containing
555 GALLIUM, INDIUM, OR THALLIUM BASE
556 GERMANIUM BASE
557 TIN BASE
558 .Lead containing
559 ..Antimony, or bismuth containing
560 .Copper containing
561 ..Antimony, or bismuth containing
562 .Antimony, or bismuth containing
563 LEAD BASE
564 .Alkali, alkaline earth metal or magnesium containing
565 ..Tin containing
566 .Silver containing
567 .Arsenic containing
568 ..Tin containing
569 ...Antimony containing
570 .Tin containing
571 ..Antimony containing
572 .Antimony containing
573 .Copper containing
574 .Zinc containing
575 .Cadmium containing
576 ANTIMONY BASE
577 BISMUTH BASE
578 SILICON BASE ALLOY CONTAINING METAL
579 ARSENIC BASE OR SELENIUM OR TELLURIUM BASE ALLOY CONTAINING METAL
580 CONTAINING OVER 50 PER CENT METAL BUT NO BASE METAL
581 .Iron containing
582 ..Copper containing
583 ..Chromium containing
584.1 ...Nickel containing
585 ....Cobalt containing
586 .....Titanium, or zirconium containing
586.1 ....Molybdenum containing
587 .Copper containing
588 .Chromium containing
589 .Tin containing
590 PROCESSES
591 MISCELLANEOUS
****
CROSS-REFERENCE ART COLLECTIONS
****
900 HYDROGEN STORAGE
901 SUPERCONDUCTIVE
902 SUPERPLASTIC
903 SEMICONDUCTIVE

CLASS 422 PROCESS DISINFECTING, DEODORIZING, PRESERVING OR STERILIZING, AND CHEMICAL APPARATUS

DECEMBER 1990

1 PROCESS-DISINFECTING, PRESERVING, DEODORIZING, OR STERILIZING
2 .Step of warning or decreasing hazard of process
3 .Process control in response to analysis
4 .A gas is substance acted upon
5 .Deodorizing
6 .Affecting structure, article, etc., submerged in marine environment
7 .Maintaining environment nondestructive to metal
8 ..Using protective article (e.g., antitarnish fabric, etc.)
9 ..Using gaseous preservative, preservative added to gaseous phase of environment, or maintaining gaseous phase nondestructive
10 ...Manipulating gaseous environment for preservative purpose
11 ...Steam environment
12 ..Aqueous acid environment
13 ..Aqueous alkali environment
14 ..Essentially pure water environment
15 ...Using organic compound having phosphorus
16 ...Using organic nitrogen compound other than ammonium salt
17 ...Using organic carboxylic acid or salt thereof
18 ...Using inorganic silicon or phosphorus compound
19 ...Using heavy metal or compound thereof
20 .Using sonic or ultrasonic energy
21 .Using microwave energy
22 .Using direct contact with electrical or electromagnetic radiation
23 ..In atmosphere other than air
24 ..Ultraviolet
25 .Including additional step of preventing damage to sealed container
26 .Using direct contact steam to disinfect or sterilize
27 ..And additional disinfecting or sterilizing agent
28 .Using disinfecting or sterilizing agent
29 ..In situ generation of agent other than aldehyde or glycol
30 ..And removing the agent by chemical reaction or sorption
31 ..And recovering or reusing the agent
32 ..Treating bulk material
33 ..With positive pressure or vacuum
34 ..Using alkylene oxide
35 ..Using cyanide
36 ..Using aldehyde
37 ..Using halogen or halogen-containing compound
38 .Using fluent heat transfer medium other than air
39 .By sudden release of pressure
40 .Process of storage or protection
41 ..Of liquid
42 ...By preventing evaporation
43 ....Of water

Note: See subclass 900 for art collection pertaining to subclasses 1-43

44 BLOOD TREATING DEVICE FOR TRANSFUSIBLE BLOOD
45 .Oxygenator
46 ..Including integral heat-exchange means
47 ..Bubble or foam producing
48 ..Membrane
49 INCLUDING MEANS FACILITATING PART REPLACEMENT OR REPAIR OTHER THAN SOLID, EXTENDED SURFACE, FLUID CONTACT MEANS
50 ANALYZER, STRUCTURED INDICATOR, OR MANIPULATIVE LABORATORY DEVICE
51 .Calorimeter
52 .Chemiluminescent
53 .Corrosion tester
54 .Flame ionization detector
55 .Structured visual or optical indicator per se
56 ..Having reagent in absorbent or bibulous substrate
57 ..Having coated reagent
58 ..In holder or container having special form
59 ...Column
60 ....Having plural-layered material
61 .Test package or kit
62 .Automatic analytical monitor and control of industrial process
63 .Sample mechanical transport means in or for automated analytical system
64 ..Means is turntable (circular)
65 ..Means is conveyor and rack
66 ..Means is moving tape or band
67 ..With specific analytical program control means
68.1 .Means for analyzing liquid or solid sample
69 ..Sorption testing
70 ...Liquid chromatograhpy
71 ...With radioactive material
72 ..Including centrifuge
73 ..With coagulometer for agglutination, clotting, or prothrombin, or for particle (e.g., cell etc.) counting, or volume or characteristics determination
74 ..Dairy tester
75 ..Including titrator
76 ...Conductiometric type
77 ....With integrating or differentiating means
78 ..Including means for pyrolysis, combustion, or oxidation
79 ...Biological, chemical, or total oxygen demand (i.e., BOD, COD, TOD)
80 ...And means directly analyzing evolved gas
81 ..Automated system with sample fluid pressure transport means
82 ...And means segmenting fluid material
82.01 ..Measuring electrical property
82.02 ...Resistance or conductivity
82.03 ...Ion selective electrode
82.04 ....Dissolved gas
82.05 ..Measuring optical property by using ultra-violet, infra-red or visible light
82.06 ...Optode or optrode
82.07 ....Fluorescence
82.08 ...Fluorescence
82.09 ...Absorbance or transmittance
82.11 ...Waveguides
82.12 ..Measuring temperature
82.13 ..Measuring pressure
83 .Means for analyzing gas sample
84 ..Breath tester
85 ...Based on color change
86 ..Including means reacting gas with color indicator
87 ...Strip indicator
88 ..Including means for adsorbing or absorbing gas into or onto liquid or solid media

ANALYZER, STRUCTURED INDICATOR, OR MANIPULATIVE LABORATORY DEVICE
.Means for analyzing gas sample
..Including means for adsorbing or absorbing gas into or onto liquid or solid media
89 ...Gas chromatography
90 ...With conductiometric detector
91 ...With photometric detector
92 ...With volumetric detector
93 ..Including means dividing sample stream into plural parallel segments having diverse treating means and the analytical result compared or combined
94 ..Combustible gas detector
95 ...With thermoelectric detector
96 ....Wheatstone bridge
97 .....With specific coating on bridge element
98 ..Analysis based on electrical measurement
99 .Miscellaneous laboratory apparatus and elements per se
100 ..Pipette or other volumetric fluid transfer means
101 ..Including means for separating a constituent, e.g., filter, condenser, extractor, etc.
102 ..Container
103 ..Valve or connector structure
104 ..Holder, support, housing, or hood
105 CONTROL ELEMENT RESPONSIVE TO A SENSED OPERATING CONDITION
106 .Responsive to liquid level
107 .Control element directly mechanically linked to separate sensor
108 .Control element responds as a function of a variable signal from a sensor
109 ..Controls heat transfer
110 ..Controls flow rate of a material to or from a contact zone
111 ...Material is an input to contact zone
112 .Control element is fluid pressure sensitive
113 ..Pressure-relief valve (e.g., pop-off valve) or check valve
114 .Control element is a binary responsive valve
115 ..Valve diverts flow from a contact zone
116 .Sensed condition is operating time and control is operation sequencer
117 WITH SAFETY FEATURE
118 .Preventing opening of closure of pressurized apparatus at unsafe pressure
119 WITH INDICATING, SIGNALLING, RECORDING, SAMPLING, OR INSPECTION MEANS
120 FOR DEODORIZING OF, OR CHEMICAL PURIFICATION OF, OR GENERATION OF, LIFE-SUSTAINING ENVIRONMENTAL GAS
121 .With means exposing gas to electromagnetic wave energy or corpuscular radiation
122 .Including solid, extended surface, fluid contact reaction means (e.g., Raschig rings, particulate or monolithic catalyst, etc.)
123 .Including means adding material into environmental gas
124 ..And mechanical means creating forced draft at addition site
125 ..With material-heating means
126 ...Material is combusted
127 SHOCK OR SOUND WAVE
128 .Including super or ultra sonic energy generation means
129 CHEMICAL REACTOR
129.1 .Soap making
130 .Bench scale
131 .Organic polymerization
132 ..Closed loop
133 ..Generating foamed plastic
134 ..Including plural sequential reaction stages
135 ..Including reactant agitating means in reaction chamber
136 ...And means rotatably mounting reaction chamber
137 ...Horizontal reaction chamber with screw or worm agitator
138 ..With heat exchanger for reaction chamber or reactants located therein
139 .Fluidized bed
140 ..With liquid present
141 ..Plural reaction beds
142 ...Sequentially arranged
143 ..Including specific wind box or particulate matter support grid
144 ..Including means to strip reaction mass from, or to regenerate, the particulate matter (including fluidized bed regenerators per se)
145 ..And means providing flow of particulate matter into or out of reaction chamber
146 ..With heat exchange means affecting reaction chamber or reactants located therein
147 ..And means mechanically separating and removing particulate bed material from fluid effluent
148 .Ammonia synthesizer
149 .With means simultaneously carrying out conjugated reactions within single reactor
150 .Pigment or carbon black producer
151 ..With means injecting quench stream into reaction chamber downstream of reaction site
152 ..With particulate product collecting surface and means mechanically removing product therefrom
153 ...Moving collecting surface
154 ....Rotary collecting surface
155 .....Disk or plate
156 ..With plural sequential reaction zones or chambers
157 ...With movably or removably mounted plug means for converting reactor from (N) to (N+1) reaction stages
158 ..Vapor phase reaction type
159 .For radioactive reactant or product
160 .Inorganic sulfur acid or anhydride producing type
161 ..Acid is final product
162 .Inorganic hydrator
163 .Explosives synthesizer
164 .Solid reactant type (i.e., absence of fluid reactants)
165 ..Including ignition means for reactant
166 ...Electrically actuated
167 ..Including reactor cooling means surrounding reactor
168 .Waste gas purifier
169 ..Including means providing sequential purification stages
170 ...Plural chemical reaction stages
171 ....Solid, extended surface, fluid contact type
172 ....And means downstream of a stage for injecting a reactant into waste gas for interreaction in subsequent stage

CHEMICAL REACTOR
.Waste gas purifier
173 ..With heat exchanger for reaction chamber or reactants located therein
174 ...Electrical type
175 ...Regenerative heat sink
176 ..Including waste gas flow distributor upstream of reaction site and within reaction chamber modifying velocity profile of gas
177 ..Including solid, extended surface, fluid contact reaction means, e.g., inert Raschig rings, particulate absorbent, particulate or monolithic catalyst, etc.
178 ...And contact regenerating means or means for cleaning an internal surface of the reaction chamber
179 ...Fixed bed with resilient or differential thermal expansion compensating bed support means
180 ...Unitary (i.e., nonparticulate) contact bed (e.g., monolithic catalyst bed, etc.)
181 ...Fixed annularly shaped bed of contact material and means directing gas therethrough substantially perpendicular to longitudinal axis of bed
182 ..Including means injecting combustion fuel into reaction chamber in direct contact with waste gas
183 ...And means mixing combustion fuel with waste gas upstream of reaction site
184 .For chemically destroying or disintegrating solid waste, other than burning alone
185 .For chemical recovery of chemicals from waste paper making liquor
186 .With means applying electromagnetic wave energy or corpuscular radiation to reactants for initiating or perfecting chemical reaction
186.01 ..Magnetic
186.02 ...Object protection
186.03 ...With electrical discharge
186.04 ..Electrostatic field or electrical discharge
186.05 ...Treating surface or solid substrate
186.06 ....Surface in metal
186.07 ...Ozonizers
186.08 ....With preparatory or product-treating means
186.09 .....With drying means
186.1 .....With filtering or particle removal means
186.11 .....With cooling, compression, condensation, or liquefying means
186.12 ....With subsequent use means
186.13 ....With electrode moving means
186.14 ....With fluent reactant flow control means
186.15 ....With current control or special electrical supply means
186.16 .....With pulse generating means
186.18 ....Cylindrical electrode
186.19 .....With heating or cooling means
186.2 ....With heating or cooling means
186.21 ...Arc or spark discharge means
186.22 ....With electrode or reaction space heating or cooling means
186.23 ....With preparatory or product-treating means
186.24 .....With nitrogen fixation means
186.25 .....With cooling or pressurizing means
186.26 ....With electrode moving means
186.27 .....With current control means
186.28 ....With current control means
186.29 ...With RF input means
186.3 ..With ultraviolet radiation generating means
187 .Combined
188 .Including plural reaction stages
189 ..And means providing discrete sequential reaction stages, e.g., train, etc.
190 ...Plural solid, extended surface, fluid contact reaction stages each containing, e.g., inert Raschig rings, particulate sorbent, particulate or monolithic catalyst, etc.
191 ....Superimposed reaction stages in single reaction chamber
192 ....At least one reaction stage formed of fixed, annularly shaped bed of contact material and means directing reaction stream therethrough substantially perpendicular to longitudinal axis of bed
193 ...Reaction stages located within single reaction chamber
194 ....And means downstream of a stage for internally injecting a reactant into a reaction stream for interreaction in a subsequent stage, or injecting an internal quench stream into reaction stream passing between stages
195 ....Means within reaction chamber redistributing reaction stream as it passes between adjacent stages
196 ..Including plural parallel reaction stages with each stage in form of a reaction tube
197 ...Tubular stages in single reaction chamber
198 .Including heat exchanger for reaction chamber or reactants located therein
199 ..Electrical type
200 ..Indirect heat-exchange tube within reaction chamber with a nonreactant heat-exchange fluid passing therethrough
201 ...Tube and shell type
202 ..Heat-exchange jacket surrounding reaction chamber
203 ...Including fluid-transfer means connecting chamber to heat-exchange jacket
204 ...Means associated with jacket providing combustion gas as heat-exchange medium
205 ...Including baffle or stirring means disposed within jacket or chamber, the baffle means within chamber connected directly to wall thereof
206 ..Regenerative heat sink
207 ..Means injecting internal quench stream into reaction stream downstream of reaction stage
208 ..Apparatus operates at positive pressure
209 .Including means rotating reaction chamber during use
210 ..And means wiping or scraping interior surface of reaction chamber
211 .Including solid, extended surface, fluid contact reaction means, e.g., inert Raschig rings, particulate absorbent, particulate or monolithic catalyst, etc.

CHEMICAL REACTOR

.Including solid, extended surface, fluid contact reaction means, e.g., inert Raschig rings, particulate absorbent, particulate or monolithic catalyst, etc.

212 ..With means removing and recovering product from extended surface contact material

213 ..Particulate contact material type and means providing flow of particulate material into or out of reaction chamber with reactants or products

214 ...Transfer line type reaction chamber

215 ...And internal mixing means

216 ..Compact bed of particulate, fluid contact material and means providing gravity flow of material within bed

217 ..And means upstream of extended surface, fluid contact means removing particulate impurities from reactant stream

218 ..Fixed annularly shaped bed of contact material and means directing reactant therethrough substantially perpendicular to longitudinal axis of bed

219 ..And means loading contact material into, or unloading contact material from, reactor or means providing internal contact material reservoir

220 ..And reactant flow distributor upstream of contact means and within reaction chamber modifying velocity profile of reactant flow

221 ..Fixed contact bed type with resilient or differential thermal expansion compensating bed support means

222 ..Unitary (i.e., nonparticulate) contact bed, (e.g., monolithic catalyst bed, etc.)

223 ..With contact material regenerating means per se or combined with reactor

224 .Including internal mixing or stirring means

225 ..Mechanical type stirring means

226 ...In positive pressure reactor

227 ...Including a draft tube for internal recirculation

228 ...Including flow directing baffle attached directly to reaction chamber wall

229 ...Longitudinally extending spiral stirring means

230 ..Thermosyphon or differential density mixing means, e.g., means internally recycling reaction mass via differential density pumping, etc.

231 ...Gas sparger type mixing means submerged in liquid reactant

232 .Including solid reactant and means charging solids into, or dischanging solids from, reaction chamber

233 ..Having both charge and discharge means along with means conveying solids therebetween located within reaction chamber

234 .Including external recycle loop

235 ..And means heating or cooling loop or reaction mass located therein

236 .Including means separating reaction chamber into plural reactant-containing compartments and means moving reactant therebetween

237 ..Movably mounted container type separating means and means moving same

238 ..Solid reactant containing perforated or porous container type separating means

239 .Reaction chamber includes at least one perforated, porous, or semipermeable wall and is adapted for holding solid reactant

240 .Including specific material of construction

241 ..Reactor liner

242 .Positive pressure type

243 PHYSICAL TYPE APPARATUS

244 .Including serially disposed vaporizing heating means and solid material deposition means maintained at a temperature lower than said heating means

245 .Crystallizer

246 ..Including shaping surface

247 ..Particulate feed source spaced from the substrate

248 ..Including crucible

249 ...Seed puller

250 ..Crucible-free zone refining

251 ..Including means separating and conveying crystals to a melting zone

252 ..Hydraulic classifier with crystallizer

253 ..Including feed compartment for introducing nutrient

254 ..Movable crystallizer or scraping means

255 .Means separating or dissolving a material constituent

256 ..Liquid-liquid contact means

257 ...Including pulsator, adjustable plates, or plural inlets, e.g., spraying, etc.

258 ...Including rotating chamber or rotating member within chamber, e.g., mixer-settler, etc.

259 ....Having rotating member within chamber

260 ...Including heating and cooling means

261 ..Liquid-solid contact means

262 ...Sulfur extraction

263 ...Including monolithic nonporous body of solute

264 ...Including means restricting solvent contact to one end of body of solute

265 ...Buoyant holder

266 ...Manual or mountable holder, e.g., soap holder, etc.

267 ...Including means to remove solids from a filter

268 ...Conveyor support for solid material during contact, e.g., bucket, etc.

269 ...Including rotating member

270 ....Member is container

271 .....Including internal rotating member

272 .....Partitions divide container

273 ....Member conveys material into and out of container, e.g., screw propeller, etc.

274 ...Including perforated member which is nonlinear or inclined with respect to the major axis of container

275 ...Including parallel perforated members perpendicular to, or parallel to, major axis of container

276 ...Side wall of holder perforated

277 ....Perforations of holder form inlet for solvent

PHYSICAL TYPE APPARATUS
.Means separating or dissolving a material constituent
..Liquid-solid contact means
278 ...Including plural orifice inlet, or deflector adjacent inlet for solvent flow
279 ....Having inlet submerged within body of a solid solute
280 ...Solvent vapor condenser
281 ...Means recirculating solvent
282 ...Including bypass
283 ...Including dip tube for inlet or outlet of fluid solvent
284 ...Internal heater, e.g., steam coil, etc.
285 ..And heating means
286 ...Including mechanical comminuting or conveying means
287 ....Within treating vessel
288 ...Including means removing vapor from treated material
289 ....And direct contact heating fluid means within separating or dissolving chamber vessel
290 ....And indirect contact heating fluid means in separating or dissolving chamber
291 .Combined
292 .Apparatus for treating solid article or material with fluid chemical
293 ..Fluid having simultaneous diverse function
294 ..Including flexible or collapsible treating chamber
295 ..Including pressure treating chamber (above ambient)
296 ...Fluid pressure maintains closure or seal
297 ...And rack, support or handling means
298 ...And vaporizer, e.g., boiler, etc.
299 ....Constituting treating chamber
300 ..Including rack, support or handling means
301 ...Apparatus closure operates means immersing article or material in liquid chemical
302 ...For treating container or covers therefor
303 ....Container is inverted
304 ....Including endless conveyor
305 .Including gas generating means
306 .Including means for adding a material to a gas
307 .Heat treating vessel with heating means
308 ..Including multiple stages
309 ..Including comminuting, kneading, or surface-wiping means interior or vessel
310 ELEMENTS OR ADJUNCTS
311 .Bed support means (e.g., support grid or plate for supporting particulate bed of contact material, etc.)
312 .Tube element containing extended surface contact reaction means (e.g., a tube internally coated or packed with a catalyst, etc.)

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CROSS-REFERENCE ART COLLECTION RELATING TO SUBCLASSES 1 THROUGH 43

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900 DECREASING POLLUTION OR ENVIRONMENTAL IMPACT

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CROSS-REFERENCE ART COLLECTIONS

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901 POLYMER DISSOLVER
902 SODIUM CHLORIDE AND POTASSIUM CHLORIDE DISSOLVER
903 RADIOACTIVE MATERIAL APPARATUS
904 NITROGEN FIXATION MEANS
905 MISCELLANEOUS LIQUID STERILIZATION MEANS
906 PLASMA OR ION GENERATION MEANS
907 CORONA OR GLOW DISCHARGE MEANS

1 TREATING MIXTURE TO OBTAIN METAL CONTAINING COMPOUND
2 .Radioactive metal (At. No. 84+ or radioactive isotope of another metal)
3 ..Actinide series metal (At. No. 89+)
4 ...Removing cladding or coating from fuel element
5 ...Fusing
6 ...Ion exchanging or sorbing
7 ....Organic synthetic resin
8 ...Liquid-liquid extracting
9 ....Organo-nitrogen solvent
10 ....Organo-phosphorus solvent
11 ...Forming insoluble substance in liquid
12 ....By co-precipitating with carrier
13 .....Carrier contains bismuth
14 .....Carrier contains lanthanum
15 ....Forming compound containing plural metals or metal and ammonium
16 ....Forming peroxide (e.g., UO4, etc.)
17 ....Carbonate leaching
18 ....Acid leaching
19 ...Volatizing
20 ...Acid leaching
21.1 .Rare earth metal (At. No. 21, 39, or 57-71)
21.5 ..Ion exchanging or liquid-liquid extracting
22 .Platinum group metal (Ru, Rh, Pd, Os, Ir, or Pt)
23 .Group IB metal (Cu, Ag, or Au)
24 ..Ion exchanging or liquid-liquid extracting
25 ..Sorbing or magnetic separating
26 ..Flotation
27 ..Leaching, washing, or dissolving
28 ...Specified particle size
29 ...With a cyanide compound
30 ....And pressurizing
31 ....And agitating
32 ...With ammonia or ammonium containing compound
33 ....Specified temperature
34 ...Forming insoluble substance in liquid
35 ....Forming oxide or carbonate
36 ....Sulfating
37 ....Sulfiding
38 ...Halogenating
39 ....Specified temperature
40 ....With chlorine gas or chlorinated water
41 ...Sulfating
42 ..Forming insoluble substance in liquid
43 ...Specified pH
44 ..Volatizing copper, silver, or gold
45 ..Sulfating
46 ..Halogenating
47 ..Desulfurizing or de-arsenating
48 ..Forming sulfide or matte
49 .Group VIIB metal (Mn, Tc, or Re)
50 ..Forming insoluble substance in liquid
51 ...Halogenating
52 ...Sulfating
53 .Group VIB metal (Cr, Mo, or W)
54 ..Ion exchanging or liquid-liquid extracting
55 ..Forming insoluble substance in liquid
56 ...Ammoniating or nitrating
57 ...Sulfating
58 ...Forming compound containing plural metals
59 ..Volatizing
60 ...As a compound containing chlorine
61 ..Forming compound containing plural metals
62 .Group VB metal (V, Nb, or Ta)
63 ..Ion exchanging or liquid-liquid extracting
64 ..From organic liquids
65 ..Forming insoluble substance in liquid
66 ...Hydroxylating or hydrating
67 ...Ammoniating or sulfating
68 ..Leaching, washing, or dissolving
69 .Group IVB metal (Ti, Zr, or Hf)
70 ..Ion exchanging or liquid-liquid extracting
71 ..Forming compound containing plural metals
72 ...Halogen containing
73 ..Separating Group IVB metals from each other
74 ..Utilizing fluidized bed
75 ..Volatizing
76 ...Titanium, zirconium, or hafnium
77 ....Removing undesirable matter from vapor
78 ....Specified physical form of feed solids
79 ....Contacting feed solids with chlorine gas
80 ..Chemically converting for physical solid-solid separation
81 ..Treating with nitrogen or nitrogenous compound
82 ..Treating with sulfur or halogen containing acid
83 ...Forming metallic iron or insoluble iron containing compound
84 ..Treating with compound containing alkali metal or alkaline earth metal
85 ..Forming insoluble compound containing Group IVB metal
86 ..Dissolving or leaching of iron
87 .Group VA metal or arsenic (Sb, Bi, or As)
88 ..Volatizing
89 .Group IVA metal (Ge, Sn, or Pb)
90 ..Detinning
91 ...Treating with free halogen or hydrogen halide
92 ..Forming insoluble substance in liquid
93 ...Pressurizing or agitating during reaction
94 ...Halogenating
95 ...Nitrating or sulfating
96 ..Volatizing germanium or tin
97 ..Volatizing lead
98 ..Leaching, washing, or dissolving
99 .Group IIB metal (Zn, Cd, or Hg)
100 ..Ion exchanging or magnetic separating
101 ..Forming insoluble substance in liquid
102 ...Agitating during reaction
103 ...Halogenating
104 ...Hydroxylating or hydrating
105 ...Carbonating
106 ...Sulfating
107 ..Volatizing zinc, cadmium, or mercury
108 ...Mixture contains lead
109 ..Leaching, washing, or dissolving
110 ..Desulfurizing
111 .Group IIIA metal or beryllium (Al, Ga, In, Tl, or Be)
112 ..Ion exchanging or liquid-liquid extracting
113 ..Magnetic separating
114 ..Forming compound containing ammonium and metal
115 ..Forming compound containing plural metals
116 ...And halogen
117 ...And sulfur
118 ...Aluminosilicate
119 ...Alkali metal aluminate
120 ....From alunite
121 ....From bauxite
122 ..Forming insoluble substance in liquid

TREATING MIXTURE TO OBTAIN METAL CONTAINING COMPOUND
.Group IIIA metal or beryllium (Al, Ga, In, Tl, or Be)
..Forming insoluble substance in liquid
123 ...Subjecting mixture to pressure, vacuum, or steam
124 ...Agitating during reaction
125 ...Nitrating
126 ...Halogenating
127 ...Hydroxylating or hydrating
128 ...Sulfating
129 ...Carbonating
130 ..Destroying or separating organic impurity
131 ..Leaching, washing, or dissolving
132 ...With acid
133 ..Volatizing
134 ...Beryllium
135 ...Group IIIA metal
136 ....Utilizing elemental halogen as reactant
137 ..Utilizing carbon as reducing agent
138 .Iron group metal (Fe, Co, or Ni)
139 ..Ion exchanging or liquid-liquid extracting
140 ..Forming insoluble substance in liquid
141 ...Subjecting mixture to pressure, vacuum, or steam
142 ...Agitating during reaction
143 ...Utilizing or forming nitrogenous compound
144 ....Carbonating, hydroxylating, or hydrating
145 ....Sulfating
146 ...Sulfating
147 ....Halogenating, hydroxylating, or hydrating
148 ..Utilizing fluidized bed
149 ..Volatizing iron, nickel, or cobalt
150 ..Leaching, washing, or dissolving
151 ..Converting metal to magnetic form
152 ...At specified temperature
153 ..Desulfurizing
154 ...At specified temperature
155 .Alkaline earth metal (Mg, Ca, Sr, or Ba)
156 ..Magnetic separating
157 ..Ion exchanging or liquid-liquid extracting
158 ..Forming insoluble substance in liquid
159 ...Subjecting mixture to pressure, vacuum, or steam
160 ...Agitating during reaction
161 ...Specified particle size used or made
162 ...Nitrating or ammoniating
163 ...Halogenating
164 ...Hydroxylating or hydrating
165 ...Carbonating
166 ...Sulfating
167 ..Treating phosphate rock or asbestos
168 ..Mixing fuel with starting mixture
169 ..Separating magnesium and calcium from each other (e.g., treating dolomite, etc.)
170 ..Treating impure sulfate (e.g., barite, etc.)
171 ...Calcining gypsum
172 ....With steam or at specified temperature
173 ..Treating impure carbonate (e.g., oyster shells, etc.)
174 ...Forming calcium carbide
175 ...Calcining
176 ....Utilizing vacuum or steam
177 ....With agitating or at specified temperature
178 ..Mixture contains halogen or sulfur
179 .Alkali metal (Li, Na, K, Rb, or Cs)
179.5 ..Lithium
180 ..Decomposing amalgam or other alloy
181 ..Ion exchanging or liquid-liquid extracting
182 ..Regenerating solution
183 ...Hydroxide solution
184 ..Forming insoluble substance in liquid
185 ...Fluorinating or defluorinating
186 ...Carbonating
187 ....Utilizing or forming nitrogenous compound
188 ....Subjecting mixture to pressure, vacuum, or steam
189 ....Utilizing carbon dioxide as reactant
190 .....Mixture contains metal chloride
191 ....Halogenating
192 ....Hydroxylating or hydrating
193 ....Sulfating
194 ...Utilizing or forming nitrogenous compound
195 ...Subjecting mixture to pressure, vacuum, or steam
196 ...Agitating during reaction
197 ...Halogenating
198 ...Hydroxylating or hydrating
199 ...Sulfating
200 ..Volatizing an alkali metal
201 ..Agitating during heating or reaction
202 ..Treating with acid or acid salt
203 ..Subjecting mixture to pressure, vacuum, or steam
204 ...Mixture contains organic impurity
205 ...Leaching or forming water soluble substance
206 R ..Mixture contains organic or carbonaceous impurity
206 T ....Alkali carbonate from trona
207 ...Burning the impurity
208 ..Water leaching or forming water soluble substance
209 ..Carbonating
210 MODIFYING OR REMOVING COMPONENT OF NORMALLY GASEOUS MIXTURE
210.5 .Direct contact with molten material
212 .Mixture is exhaust from internal-combustion engine
213.2 ..Utilizing as solid sorbent, catalyst, or reactant a material containing a transition element
213.5 ...Group VIII element
213.7 ...Including successive stage treatments to modify or remove a different component in each stage
219 .Molecular oxygen or ozone component
220 .Carbon dioxide or hydrogen sulfide component
221 ..Utilizing thionate or thiosulfate as reactant
222 ..Reacting mixture with sulfur dioxide, sulfite or bisulfite
223 ..Utilizing reactant containing arsenic, phosphorus or boron
224 ..By oxidizing or burning component
225 ..By suspension of metal oxide or hydroxide particles in liquid
226 ..Utilizing organic reactant
227 ...Phenolate or phenolic type
228 ...Amine
229 ....Ethanolamine
230 ..Utilizing solid sorbent, catalyst or reactant
231 ...Iron oxide or hydroxide
232 ..Utilizing carbonate as reactant
233 ...And regenerating reactant by incoming actifying gas
234 ..Utilizing ammonium or metal hydroxide solution

	MODIFYING OR REMOVING COMPONENT OF NORMALLY GASEOUS MIXTURE
235	.Nitrogen or nitrogenous component
236	..Component also contains carbon (e.g., cyanogen, hydrogen cyanide, etc.)
237	..Ammonia
238	...Utilizing liquid as reactant
239	..Utilizing solid sorbent, catalyst or reactant
240	.Halogenous component
241	..Free halogen
242	.Sulfur or sulfur containing component
243	..Utilizing liquid reactant having organic portion
244	..Utilizing solid sorbent, catalyst or reactant
245.1	.Organic component
245.2	..Utilizing liquid reactant
245.3	..By burning or catalytically combusting component
246	.Carbon monoxide component
247	..Utilizing solid sorbent, catalyst or reactant
248	.Hydrogen component
215.5	.Solid component
249	RADIOACTIVE (AT. NO. 84+ OR RADIOACTIVE ISOTOPE OF ANOTHER ELEMENT)
250	.Transuranium compound
251	..Plutonium containing
252	.Thorium compound
253	.Uranium compound
254	..Binary compound
255	...Hydrogen containing
256	...Carbon containing
257	...Chlorine containing
258	...Fluorine containing
259	....Tetrafluoride
260	...Oxygen containing
261	....Dioxide
262	INERT OR NOBLE GAS OR COMPOUND THEREOF
263	RARE EARTH COMPOUND (AT. NO. 21, 39, OR 57-71)
264	CHANGING COLOR CHARACTERISTIC OF IMPURITY
265	WITH ADDITIVE
266	.For stabilizing crystal size or shape
267	.Including anti-caking or anti-hygroscopic function
268	..Additive contains organic portion
269	.Including corrosion inhibitor
270	.For sulfur trioxide
271	..Additive contains metal, boron or silicon
272	.For hydrogen peroxide
273	..Additive contains metal, boron or silicon
274	.Coating or binder
275	.Additive contains metal, boron or silicon
276	BORON OR COMPOUND THEREOF
277	.Oxygen containing
278	..Binary compound
279	..Ternary compound containing metal or ammonium
280	...Utilizing dissolved or liquid reactant
281	....Peroxide
282	...Carbon containing
283	...Ternary compound containing hydrogen
284	.Nitrogen and hydrogen containing
285	..Ternary compound
286	.Hydrogen and metal or ammonium containing
287	..Utilizing halogen containing reactant
288	..Utilizing oxygen containing reactant
289	.Binary compound (e.g., boride, etc.)
290	..Nitrogen containing
291	..Carbon containing
292	..Halogen containing
293	...Fluorine
294	..Hydrogen containing
295	...By reacting metal hydride or organic derivative thereof
296	...By reacting free hydrogen
297	..Refractory metal containing (Ti, V, Cr, Zr, Nb, Mo, Hf, Ta, or W)
298	.Elemental boron
299	PHOSPHORUS OR COMPOUND THEREOF
300	.Halogen containing
301	..Fluorine
302	.Nitrogen containing
303	.Sulfur containing
304	.Oxygen containing
305	..Metal or ammonium containing
306	...Plural metal or metal and ammonium containing
307	...Hydrogen containing
308	....Orthophosphate
309	.....Utilizing phosphoric acid or its anhydride as reactant
310	......And ammonia
311	...Orthophosphate
312	....Alkali metal or ammonium containing
313	.....Utilizing phosphoric acid as reactant
314	...Metaphosphate
315	...Triphosphate or tetraphosphate
316	..Ternary compound containing hydrogen
317	...Orthophosphoric acid
318	....Utilizing reactant containing silicon or carbon
319	....Reacting an acid and phosphate rock
320	.....Sulfuric acid
321 R	....Purification or recovery
321 S	......Organic solvent extraction
322	.Elemental phosphorus
323	..Utilizing a phosphate as reactant
324	SILICON OR COMPOUND THEREOF
325	.Oxygen containing
326	..Metal containing (i.e., silicate)
327	...Aluminum containing
328	....Aluminosilicate
329	.....By precipitating or gelling
330	......Utilizing a sulfate as reactant
331	...Alkaline earth metal containing (Mg, Ca, Sr, or Ba)
332	...Alkali metal containing (Li, Na, K, Rb, or Cs)
333	....By precipitating or gelling from silicate solution
334	....By heat treating silica and the alkali metal
335	..Silica
336	...By hydrolyzing vapor phase silicon compound
337	...By oxidizing volatile silicon compound (e.g., combustion, etc.)
338	...By gelling
339	...By precipitating
340	...By purifying sand
341	.Halogen containing
342	..Halogenated silane
343	..Volatizing a solid
344	.Binary compound (e.g., silicide, etc.)
345	..Of carbon (i.e., silicon carbide)
346	...By reacting vapor phase silicon compound with carbon or carbon containing compound
347	..Of hydrogen (e.g., silane, etc.)
348	.Elemental silicon
349	..From silicon containing compound
350	...Utilizing reducing substance
351	NITROGEN OR COMPOUND THEREOF (EXCEPT AMMONIUM SALT OF NON-NITROGEN ACID)
352	.Ammonia or ammonium hydroxide
353	..From nitride of metal or silicon

	NITROGEN OR COMPOUND THEREOF (EXCEPT AMMONIUM SALT OF NON-NITROGEN ACID)
	.Ammonia or ammonium hydroxide
354	..And producing inorganic carbon and nitrogen containing compound
355	..By hydrolyzing inorganic carbon and nitrogen containing compound
356	..From ammonium compound
357	...Utilizing calcium compound
358	..From organic material containing nitrogen
359	..From elemental hydrogen and nitrogen
360	...With exchanging heat between catalyst and synthesis or effluent gas
361	...Utilizing plurality of catalyst beds or portions
362	...Utilizing metal containing catalyst
363	....Alkali or alkaline earth metal
364	.Carbon containing
365	..And oxygen containing (e.g., fulminate, cyanate, etc.)
366	..And sulfur containing (e.g., thiocyanate, etc.)
367	..And iron containing (e.g., ferrocyanide, etc.)
368	..Cyanamide radical containing
369	...And hydrogen containing
370	...Utilizing carbide as reactant
371	..Ternary compound
372	...Hydrogen cyanide
373	....Employing formamide or formate as reactant
374	....Utilizing nitric oxide or free nitrogen as reactant
375	....Employing ammonia as reactant
376	.....And using catalyst
377	....Utilizing metal cyanide as reactant
378	...Using cyanamide as reactant
379	...Utilizing hydrogen cyanide as reactant
380	...Utilizing free nitrogen as reactant
381	....And using catalyst
382	....Utilizing carbon reactant from specified source
383	..Halogen containing
384	..Binary (e.g., cyanogen, etc.)
385	.Oxygen containing
386	..Halogen containing
387	..Hydrogen containing
388	...Sulfur containing
389	....Sulfamic acid
390	...Nitric acid
391	....By reacting a salt and an acid
392	....Utilizing ammonia as reactant
393	....Utilizing nitrogen oxide as reactant
394	.....Nitrogen peroxide
395	..Nitrate
396	...Ammonium containing
397	...Utilizing ammonium or metal nitrate as reactant
398	...Utilizing halogen containing reactant
399	....And nitric acid reactant
400	..Binary compound (oxide of nitrogen)
401	...Utilizing nitrosyl chloride as reactant
402	...Utilizing catalyst
403	....And ammonia as reactant
404	.....Catalyst is metal oxide
405	...Nitric oxide (NO)
406	.Binary compound
407	..Hydrazine or hydrazine hydrate
408	...Utilizing halogen or sulfur as reactant
409	..Metal or ammonium containing
410	...Azide
411	...Titanium or zirconium containing
412	...Aluminum containing
413	.Hydrogen containing (e.g., amide, imide, etc.)
414	CARBON OR COMPOUND THEREOF
415 R	.Oxygen containing
415 P	...Percarbonate compounds
415 A	...Carbon monoxide
416	..Carbonyl
417	...Metal containing
418	....Utilizing organic compound as reactant
419 R	..Carbonate or bicarbonate
419 P	....Plural metal containing
420	...Ammonium containing
421	...Alkali metal containing (Li, Na, K, Rb, or Cs)
422	....Hydrogen containing (bicarbonate)
423	.....By carbonating ammoniated brine
424	.....By reacting halogen containing compound
425	.....Sesquicarbonate
426	....Densifying soda ash
427	....By reacting a bicarbonate
428	....By reacting sulfur containing compound
429	....By reacting halogen containing compound
430	...Alkaline earth metal containing (Mg, Ca, Sr, or Ba)
431	....By reacting sulfur or halogen containing compound
432	....By reacting oxide or hydroxide of the metal
433	...Lead containing
434	....By reacting compound containing sulfur or a halogen
435	....By reacting lead acetate or acetic acid
436	.....And utilizing metallic lead as reactant
437	..Carbon dioxide or carbonic acid
438	...From a carbonate
439	.Binary compound (e.g., carbide, etc.)
440	..Refractory metal containing
441	..Calcium containing
442	...By reacting carbon and inorgnic calcium containing compound
443	..Disulfide
444	...By reacting free carbon
445	.Elemental carbon
446	..Diamond
447.1	..Fiber, fabric or textile
447.2	...Product
447.3	...From gaseous reactants
447.4	...Prior treatment before carbonization (except with gaseous oxygen)
447.5	....With metal, metal compound or phosphorus compound
447.6	...Including reaction with gaseous oxygen
447.7	...In specific atmosphere (other than vacuum or air)
447.8	...Controlling varying temperature or plural heating steps
447.9	...Carbonizing cellulosic material
448	..Graphite
449	..Process of manufacturing
450	...Directly from fluid hydrocarbon only
451	....Rapid and discontinuous oxidation
452	....Including flame impinging on cool surface
453	....By contacting with catalyst or hot solid surface
454	.....Hot particulate bed or reaction zone lining or refractory
455	....Specified injection velocity
456	....Specified injection angle (e.g., helical, tangential, etc.)
457	.....At least one radial inlet

CARBON OR COMPOUND THEREOF
.Elemental carbon
..Process of manufacturing
...Directly from fluid hydrocarbon only
458 ....Gas or vapor only as infeed to process
459 ...From carbon monoxide infeed to process
460 ..Treating carbon
461 ..Recovery or purification
462 HALOGEN OR COMPOUND THEREOF
463 .Plural metal or metal and ammonium containing
464 ..Including fluorine
465 ...Including aluminum
466 .Plural diverse halogens containing
467 .Sulfur containing
468 ..Ternary compound containing oxygen
469 ..Binary compound
470 .Ammonium halide
471 ..Recovery or purification
472 .Ternary compound
473 ..Hypohalite or hypohalous acid
474 ...Calcium hypochlorite
475 ..Halogenate (e.g., chlorates, etc.)
476 ..Perhalate or perhalic acid
477 .Chlorine dioxide
478 ..By reacting a chlorate
479 ...And a nitrogenous or carbonaceous compound
480 ...And sulfur dioxide
481 .Hydrogen halide
482 ..By reacting alkali metal salt with sulfuric acid
483 ..Hydrogen fluoride
484 ...From impure starting material
485 ....Fluorspar
486 ..Utilizing an element as reactant
487 ...Reacting elemental hydrogen and elemental halogen
488 ..Recovery or purification
489 .Binary fluorine containing compound
490 ..Alkali or alkaline earth metal containing
491 .Binary compound containing metal
492 ..Refractory metal (Ti, Zr, Hf, V, Nb, Ta, Cr, Mo or W)
493 ..Iron group metal or copper (Fe, Co, Ni or Cu)
494 ..Group IVA metal (Ge, Sn or Pb)
495 ..Group IIIA metal or beryllium (Al, Ga, In, Tl or Be)
496 ...Utilizing carbon or carbon containing compound
497 ..Alkaline earth metal (Mg, Ca, Sr or Ba)
498 ...Anhydrous magnesium chloride
499 ..Alkali metal (Li, Na, K, Rb or Cs)
500 .Elemental halogen
501 ..Ion exchanging or liquid-liquid extracting
502 ..Oxidizing catalytically
503 ..Sorbing
504 ..From mixture containing alkali metal or alkaline earth metal
505 ...Forming insoluble substance in liquid
506 ..By reacting alkali metal halide with sulfur compound
507 ..By reacting hydrogen halide or ammonium halide
508 SELENIUM OR TELLURIUM OR COMPOUND THEREOF
509 .Binary compound
510 .Elemental selenium or tellurium
511 SULFUR OR COMPOUND THEREOF
512 R .Oxygen containing (e.g., sulfite, etc.)
512 A ...Sulfite
513 ..Persulfate
514 ..Thiosulfate
515 ..Dithionite
516 ...Employing amalgam as reactant
517 ..Metal and ammonium containing
518 ..Plural metal containing
519 ..Bisulfite
520 ..Bisulfate
521 ..Ternary compound containing hydrogen
522 ...Sulfuric acid
523 ....Nitrogenous impurity or utilizing nitrogenous catalyst or reactant
524 .....Lead chamber process
525 ....Starting material includes organic or carbonaceous impurity
526 .....Utilizing pressure or vacuum on mixture
527 .....Adding organic compound to mixture
528 .....Contacting mixture with gas, steam or vapor
529 ....Subjecting reactants to pressure, vacuum or steam
530 ....Utilizing metal sulfate
531 ....Purifying acid or reactant
532 ..Sulfur trioxide
533 ...Utilizing catalyst in reaction
534 ....Promoter or successive diverse catalysts
535 ....Catalyst contains oxygen, vanadium, and another metal
536 ....Platinum catalyst
537 .....With sulfate or asbestos carrier
538 ....Oxygen containing catalyst
539 ..Sulfur dioxide
540 ...From acid sludge or waste
541 R ...Utilizing ammonium or metal sulfate as reactant
541 A .....Ammonium salt
542 ...Burning or roasting a sulfur compound
543 ...Burning sulfur
544 ..Sulfate
545 ...Ammonium containing
546 ....Utilizing thiocyanate as reactant
547 ....Employing sulfite or bisulfite as reactant
548 ....Using metal sulfate as reactant
549 ....Employing sulfuric acid as reactant
550 .....Ammonia from waste gas
551 ...Alkali metal containing (Li, Na, K, Rb, or Cs)
552 ....Utilizing chloride as reactant
553 ....Dehydrating
554 ...Alkaline earth metal containing (Mg, Ca, Sr, or Ba)
555 ....Calcium
556 ...Aluminum containing
557 ...Copper containing
558 ...Iron containing
559 ...Lead containing
560 .Ternary compound containing hydrogen and metal (e.g., hydrosulfide, etc.)
561.1 .Binary compound
562 ..Polysulfide
563 ..Hydrogen sulfide
564 ...By catalytic reaction
565 ..Utilizing free sulfur as reactant
566 ..Utilizing sulfate or sulfuric acid as reactant
566.1 ..Sulfide of Cd, Zn, or Hg
566.2 ..Sulfide of alkali metal
566.3 ..Sulfide of alkaline earth metal
567 R .Elemental sulfur
567 A ...From liquid or solid sulfur compound
568 ..Chlorinating
569 ..Reducing sulfur dioxide by carbon containing material
570 ...Catalytic reaction
571 ..Reacting a sulfide
572 ...With steam to form hydrogen sulfide

SULFUR OR COMPOUND THEREOF
.Elemental sulfur
..Reacting a sulfide
573.1 ...Hydrogen sulfide
574 R ....With sulfur dioxide
574 L ......In inorganic liquid
575 .....Utilizing organic solvent or absorbent
576 .....Utilizing promotor containing silica or aluminum
576.2 ....With specified procedure for sulfur recovery or specified conditions for producing sulfur in more recoverable form
576.4 ....By reacting gaseous feed stream with liquid aqueous mixture
576.5 .....Transition metal-containing mixture
576.6 ......Chelated or sequestered transition metal
576.7 .....Organic compound-containing
576.8 ....By reacting gaseous feed with gas containing free oxygen
577 ...Reacting metal sulfide with sulfur dioxide
578 R ..Purifying crude sulfur
578 A ....From ores
579 OXYGEN OR COMPOUND THEREOF
580 .Water (e.g., heavy water, etc.)
581 .Superoxide or ozone
582 .Peroxide
583 ..Alkaline earth metal (Mg, Ca, Sr, or Ba)
584 ..Hydrogen
585 ...From persulfuric acid or persulfate
586 ...From inorganic peroxide
587 ...From organic reactant
588 ....By oxidizing hydroquinone or anthraquinone
589 .....Including dissolving reactant in eater containing solvent
590 .....Including dissolving reactant in alcohol containing solvent
591 ....By oxidizing alcohol or hydrocarbon
592 .Metal containing
593 ..Plural metals or metal and ammonium
594 ...Iron, cobalt, or nickel (e.g., ferrite, etc.)
595 ...Chromium (e.g., chromate, etc.)
596 ....And alkali metal, alkaline earth metal or ammonium containing
597 .....Dichromate
598 ...Titanium (e.g., titanate, etc.)
599 ...Manganese (e.g., manganate, etc.)
600 ...Aluminum (e.g., aluminate, etc.)
601 ...Arsenic (e.g., arsenite, etc.)
602 ....Arsenate
603 .....And lead containing
604 ..Group IB metal (Cu, Ag, or Au)
605 ..Group VIIB metal (Mn, Tc, or Re)
606 ..Group VIB metal (Cr, Mo, or W)
607 ...Chromium
608 ..Group IVB metal (Ti, Zr, or Hf)
609 ...Titanium monoxide or sesquioxide
610 ...Titanium dioxide
611 ....Utilizing titanium halide as reactant
612 .....Titanium tetrahalide
613 ......Reacting with oxiding gas
614 ....In fluidized bed
615 ....Utilizing titanium sulfate as reactant
616 .....And utilizing acid
617 ..Group VA metal or arsenic (Sb, Bi, or As)
618 ..Group IVA metal (Ge, Sn, or Pb)
619 ...Lead
620 ....Utilizing metallic lead as reactant
621 .....Molten
622 ..Zinc
623 ...Volatizing zinc
624 ..Group IIIA metal or beryllium (Al, Ga, In, Tl, or Be)
625 ...Aluminum
626 ....Utilizing acid
627 ....Reacting metallic aluminum with water or water vapor
628 ....Forming catalyst, sorbent activated, or narrow pore alumina
629 ....Hydroxide
630 ....Utilizing carbon or compound thereof as reactant
631 ....Utilizing nitrogenous compound as reactant
632 ..Iron
633 ...Ferric oxide
634 ....Gamma form
635 ..Alkaline earth metal (Mg, Ca, Sr, or Ba)
636 ...Process of manufacturing
637 ....Utilizing carbonate as reactant
638 ....By reacting a sulfur containing compound
639 ....By reacting a nitrogenous or halogenous compound
640 ....By hydrating lime
641 ..Alkali metal (Li, Na, K, Rb, or Cs)
642 ...By reacting sulfur containing compound
643 ...By reacting a nitrogenous or halogenous compound
644 HYDROGEN OR COMPOUND THEREOF
645 .Binary compound
646 ..Alkali metal containing (Li, Na, K, Rb, or Cs)
647 ..Alkaline earth metal containing (Mg, Ca, Sr, or Ba)
647.7 .Deuterium-containing
648.1 .Elemental hydrogen
649 ..Ortho-para conversion
650 ..By decomposing hydrocarbon
651 ...Catalytic reaction
652 ....Including decomposing water
653 .....Catalyst substance contains nickel
654 ......And another metal
655 ..By reacting water with carbon monoxide
656 ...Utilizing metal oxide catalyst
657 ..By reacting water or aqueous solution with metal or compound thereof
658 ...Iron
658.2 ..By direct decomposition of binary compound, e.g., chemical storage, etc.
658.3 ..By reaction of impurities in a stream containing elemental hydrogen
658.5 EXTRACTING, LEACHING, OR DISSOLVING
659 MISCELLANEOUS PROCESS
****
DIGESTS
****
DIG 1 Waste acid containing iron
DIG 2 .Sulfuric acid
DIG 3 Papermaking liquor
DIG 4 Manganese marine modules
DIG 5 Automatic (including computer) control
DIG 6 Temperature control
DIG 7 Isotope separation
DIG 8 Corrosion or deposition inhibiting
DIG 9 Reaction techniques
DIG 10 .Plasma energized
DIG 11 .High pressure
DIG 12 .Molten media
DIG 13 .Catalyst contact
DIG 14 .Ion exchange; chelation or liquid/liquid ion extraction
DIG 15 .Comminution
DIG 16 .Fluidization

	Reaction techniques
DIG 17	.Microbiological reactions
DIG 18	Treating trash or garbage
DIG 19	Geothermal steam purification
DIG 20	Hazardous or toxic waste destruction or containment

CLASS 424 DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS

DECEMBER 1990

1.1	RADIOACTIVE INGREDIENT CONTAINING
2	TESTING, MEASURING, IDENTIFICATION OR SAFETY FEATURE
3	.Animal histology aid (e.g., for microscopic examination, etc.)
4	.X-ray contrast
5	..Halogenated organic compound containing
6	.Printed or embossed unitary dosage form
7.1	.Color or color change (e.g., Ph indicator, fluorescence, etc.)
9	.In vivo testing or diagnosis (at least part of reaction in living animal body)
10	.With taste indicator, emetic, irritant or detoxicant
11	.Blood typing (e.g., A, O, Rh, etc.)
40	COMBUSTIBLE OR CHEMICALLY REACTIVE TO PRODUCE A SMOKE, MIST OR AEROSOL
41	.Elemental sulfur containing
42	.Nitrate containing
400	PREPARATIONS CHARACTERIZED BY SPECIAL PHYSICAL FORM
401	.Cosmetic, antiperspirant, dentifrice
402	.Apparel, fabric, cloth
403	..Insect repellent or moth proofed
404	..Anti-fugial or bacterial
405	.Biocides; animal or insect repellents or Attractants e.g., disinfectants, pesticides etc.
406	..Ingredients for reducing the noxious effect of the active substances to organisms other than pests, e.g., toxicity reducing coingredients for reducing the noxious effect of te active substances to organisms other than pests, e.g., toxicity reducing compositions, self-destructing compostions
407	..Containing material to enhance the sticking of the active ingredients
408	..Capsule or pelleted or tablet
409	..Solid as carrier or diluent
410	...Impregnated or coated food or edible simulative of food e.g., bait, poison, etc.
411	...Impregnated or coated nominal articles e.g., flea collars, etc.
412	....Packaging, cordage building material or container
413	.....Cellulosic material or building material
414	...Impregnated or coated paper or foil
415	....Wrapping paper
416	....Insecticidal paper or foil
417	...Coated particulate form e.g., liposme, etc.
418	....Protein or derivative or polysaccharide orderivative
419	....Natural or synhetic resin
420	....Waxes, fatty acids, etc. e.g., liposomes, etc.
421	....Inorganic particle
422	.Implant or Insert
423	..Surgical implant or material
424	...Membrane or diffusion barrier
425	....Diffusion barrier is matrix
426	...Errodable, resorbable or dissolving
427	..Ocular
428	...Bioerrodable, resorbable or dissolving
429	...Contact lens
430	..Vaginal, urethral, uterine
431	...Tampon
432	...IUD or ring
433	...Depot, pellet, matrix or suppository
434	..Mucosal e.g., nasal, etc.
435	...Mouth
436	...Anal, rectal e.g., suppositories, etc.
437	..Otic
438	.Specially adapted for ruminant animal
439	.Food or edible as carrier for pharmaceutical
440	..Candy, candy coated or chewing gum
441	..Chewable talet or wafer
442	..Animal food
443	.Web, sheet or filament bases; compositionsof bandages, or dressings with incorporated medicaments
444	..Resorbable by the body
445	..Dressings
446	...Medicated gauze pads
447	..Bandages with incorporated medicaments
448	...Pressure sensitive adhesive means
449	...Transdermal or percutaneous
450	.Liposomes
451	.Capsules, e.g., of gelatin, of chocolate, etc.
452	..With claimed designated perfecting feature in contents, e.g., excipient, lubricant, etc.
453	..Telescoping two piece
454	...With tamperproof, locking, or sealing feature
455	..Containing emulsions, dispersions or solutions
456	..Gelatin
457	..Sustained or differential release
458	...Containing discrete coated particles pellets, granules or beads
459	....Organic coatings
460	.....Containing proteins or derivatives thereof, e.g., gelatin, etc.
461	.....Contaning polysaccharide, e.g., cellulose sugars, etc.
462	.....Containing solid synthetic polymers
463	..Coated capsules
464	.Tablets, lozenges or pills
465	..With claimed perfecting feature in contents, e.g., excipient, lubricant,etc.
466	..Effervescent
467	..Printed, embossed, grooved, or perforated
468	..Sustained or differential release type
469	...Discrete particles in supporting matrix
470	....Where particles are granulated
471	...Plural concentric cores
472	...Layered unitary dosage forms
473	....With porous, perforated, apertured, or sieved layer e.g., dalyzing layer, microporous layer, etc.
474	..Coated pills or talets
475	...Organic coatings
476	....Containing waxes, higher fatty acids, higher fatty alcohols, or derivatives thereof, e.g., chocolate
477	....Containing proteins or derivatives thereof
478	.....Gelatin containing
479	....Containing polysaccharide, e.g., sugar, etc.
480	.....Cellulose or derivative
481	....Containing natural gums or resins
482	....Containing solid synthetic polymers
483	...Ion - exchange resins
484	.Matrices
485	..Natural gums, resin or latex
486	..Synthetic polymer
487	...Acrylic acid and derivatives
488	..Polysaccharides, e.g., cellulose, etc.

	Preparations characterized by special physical form
489	.Particulate form, e.g., powders, granules, beads microcapsules and pellets
490	..Coated e.g., microcapsules
491	...Containing proteins and derivatives
492	....Gelatin
493	...Containing polysaccharides e.g., sugars
494	....Cellulose derivatives
495	.....Ethyl cellulose
496	...Containing nat'l gums/resins
497	...Containing solid synthetic polymers
498	...Containing waxes, higher fatty acids higher fatty alcohols or derivatives thereof
499	..Contains proteins or derivative or polysaccharides or derivative
500	..Contains natural gums and resins
501	..contans solid synthetic resin
502	..contains waxes higher, fatty acids, higher fatty alcohols
43	EFFERVESCENT OR PRESSURIZED FLUID CONTAINING
44	.Gas produced in situ by chemical reaction
45	.Organic pressurized fluid (e.g., Freons, etc.)
46	..Powder or dust containing
47	..Topical live body grooming or adorning aid (e.g., hair spray, antiperspirant, etc.)
48	CHEWING GUM TYPE
49	DENTIFRICES (includes mouth wash)
50	.Ferment containing (e.g., enzymes, bacteria, etc.)
51	.Iodine or iodine compound containing
52	.Fluorine or fluorine compound containing
53	.Oxygen or chlorine releasing compound containing
54	.Ammonia, amine or derivative thereof (e.g., urea, etc.)
55	.Hydroxy carboxylic acid or derivative thereof (e.g., methyl salicylate, etc.)
56	.Organic sulfate or sulfonate containing
57	.Phosphate compound containing
58	.Plant extract of undetermined constitution
59	TOPICAL SUN OR RADIATION SCREENING, OR TANNING PREPARATIONS
60	.Aromatic acid or derivative containing (e.g., aminobenzoic acid or methyl salicylate, etc.)
61	MANICURE OR PEDICURE COMPOSITIONS
62	BLEACH FOR LIVE HAIR OR SKIN (E.G., PEROXIDES, ETC.)
63	LIVE SKIN COLORANT CONTAINING
64	.Lip
65	ANTI-PERSPIRANTS OR PERSPIRATION DEODORANTS
66	.Zirconium compound containing
67	.Zinc compound containing
68	.Aluminum compound containing
69	FACE OR BODY POWDERS FOR GROOMING, ADORNING OR ABSORBING
70	LIVE HAIR OR SCALP TREATING COMPOSITIONS (NON-THERAPEUTIC)
71	.Hair shaping
72	..Sulfur-containing carboxylic acid or derivative thereof (e.g., thiogycollic acid, etc.)
73	.Shaving preparation
74	.Plant extract of undetermined constitution
75	EMBALMING OR UNDERTAKING COMPOSITIONS
76.1	DEODORANTS (NON-BODY)
76.2	.Deodorizing substance is evaporatable, sublimable or gas, e.g., deodorization of air, aerosol spray compositions, etc.
76.21	..For chemical reaction with odor producing material or gas evolving composition
76.3	..From a gel or solid matrix, e.g., retarded vaporization compositions, etc.
76.4	...With odor masking substances, e.g., perfumes, etc.
76.5	.Deodorization of waste, refuse or sewage
76.6	..Waste includes fecal material or urine, e.g., feed lot or cage waste, pet litter, etc.
76.7	...For toilet or urinal, e.g., recirculating toilet fluid, etc.
76.8	.With bio-affecting material, i.e., biocide or biostat
76.9	..Inorganic only or containing plant or animal extract
77	ADHESIVE TRAPPING COMPOSITIONS
78	SOLID SYNTHETIC ORGANIC POLYMER CONTAINING
79	.Ion exchange type
80	.Polyvinyl pyrrolidone per se
81	.From acrylic acid or derivative only
82	.From aldehyde
83	.Hydrocarbon only (e.g., polyethylene, ethylenepropylene copolymer, etc.)
84	BAITS, ATTRACTANTS, OR LURES (NON-FOOD)
85.1	LYMPHOKINE
85.2	.Interleukin
85.4	.Interferon
85.5	..Gamma or immune
85.6	..Beta or fibroblast
85.7	..Alpha or leukocyte
85.8	ANTIBODY
85.9	.Sex selection or contraceptive
85.91	.Conjugates with cytotoxic agent e.g., antibody-ricin conjugate containing compositions, etc.
86	.Virus induced antibody
87	.Bacteria induced antibody
88	ANTIGEN CONTAINING
89	.Virus
90	..Irradiated
91	.Dust or pollen
92	.Bacteria
93	WHOLE LIVE MICROORGANISM OR VIRUS CONTAINING
94.1	ENZYME OR COENZYME CONTAINING
94.2	.Multienzyme complexes or mixtures of enzymes
94.21	..Pancreatin
94.3	.Stabilized enzymes or enzymes complexed with nonenzyme, e.g., liposomes, etc.
94.4	.Oxidoreductases (1.) e.g., catalase, dehydrogenases, reductases, etc.
94.5	.Transferases (2.), Lyase, (4.), Isomerase (5.), Ligase (6.)
94.6	.Hydrolases (3.) e.g., urease, lipase, asparaginase, muramidase, etc.
94.61	..Acting in glycosyl compounds, e.g., glycossidases (3.2) lysozyme, nucleosidases, cellulase, etc.
94.62	...Hyaluronidase or mucinase (3.2.1.35, 3.2.1.36)
94.63	..Acting on peptide bonds (3.4) e.g., urokinease, etc.
94.64	...Serene proteinases (3.4.21) e.g., trypsin, chymotrypsin, plasmin, thrombin, elastase, kallikrein, fibrinolysin, streptokinease, etc.

	ENZYME OR COENZYME CONTAINING
	.Hydrolases (3.) e.g., urease, lipase, asparaginase, muramidase, etc.
	..Acting on peptide bonds (3.4) e.g., urokinease, etc.
94.65	...Sh-proteinases (3.4.22) e.g., papain, chymopapain, bromelains, ficin etc.
94.66	...Acid proteinases (3.4.23) e.g., pepsin, renin, chymosin, etc.
94.67	...Metalloproteinases (3.4.24) e.g., collagenase, snake venom zinc proteinase, etc.
520	EXTRACT, BODY FLUID, OR CELLULAR MATERIAL OF UNDETERMINED CONSTITUTION DERIVED FROM ANIMAL IS ACTIVE INGREDIENT
522	.Separated animal oil or solidified form thereof derived from animal flesh and other than from liver or dairy type
523	..Fish oil or solidified form thereof
524	..Whale or porpoise oil or solidified form thereof
525	..Skunk, musk, or mink oil or solidified form thereof
526	..Lard, rind or tallow
528	.Bile, bile acid, bile salt, amniotic fluid, or ascitic fluid
529	.Blood
530	..Plasma
531	..Serum
532	..Platelet
533	..Erythrocyte
534	..Leucocyte
535	.Milk or colostrum, e.g., butter, whey, etc.
537	.Body fluid, or exudate, or transudate other than snake venom, feces, urine, or semen, e.g., lymph, saliva, honey, royal jelly, digestive juice, etc.
538	.Derived from arthropod, e.g., insect, spider, crustacea, etc.
539	..Bee
541	..Cantharide
542	.Derived from snake, e.g., venom, etc.
543	.Waste or feces, e.g., slaughterhouse offal, chicken feet, horn, hair, hide, urine, etc.
545	..Urine
546	...Sex hormone
547	.Derived from mollusk
548	.Derived from musculoskeletal system, other than cardiac muscle, e.g., cartilage, muscle, etc.
549	..Skeleton, e.g., bone, teeth, etc.
550	.Digestive system, e.g., salivary gland, etc.
551	..Gastrointestinal system, e.g., intestine, stomach, gall bladder, etc.
553	...Liver
554	....Fish liver oil or solidified form thereof
555	.....Cod liver oil or solidified form thereof
556	...Pancreas
557	.Respiratory system, e.g., lung, etc.
558	.Urogenital system, e.g., kidney, etc.
559	..Genitalia, e.g., ovary, uterus, prostate, testis, etc.
561	..Germ cell, e.g., ovum, spermatozoa, etc.
562	.Endocrine system, other than the thymus gland, e.g., parathyroid gland, etc.
563	..Adrenal gland
565	..Pituitary gland
568	..Thyroid gland
569	.Cardiovascular system, other than umbilical artery or vein, e.g., blood vessel, heart, cardiac muscle, etc.
570	.Nervous system, e.g., brain, nerve, etc.
571	.Sense organ, e.g., eye, taste bud, etc.
572	.Tissue, other than lymphoid tissue, e.g., connective, etc.
573	..Neoplastic, tumor, or cancer
574	..Adipose or epithelium
577	.Hemic or immune system, e.g., hematopoietic system, bone marrow cells, etc.
578	..Lymphoid tissue, e.g., adenoid, lymph node, etc.
579	...Spleen
580	...Thymus gland
581	.Egg enclosed in shell or a part thereof, e.g., eggshell, egg yolk, etc.
582	.Embryonic structure, e.g., embryo or fetus, etc.
583	..Placenta or umbilical cord
114	PLURAL FERMENTATES OF DIFFERENT ORIGIN (E.G., MIXTURES OF ANTIBIOTICS, ETC.)
115	FERMENTATE OF UNKNOWN CHEMICAL STRUCTURE
116	.Having a known elemental analysis (e.g., antibiotic, etc.)
117	..Sulfur containing
118	..45-55% carbon
119	..Over 55 to 58% carbon
120	..Over 58 to 60% carbon
121	..Over 60 to 62% carbon
122	..Over 62% carbon
123	.Processes of making, purifying or recovering (non-fermentation)
124	..Ion exchange or chromatography
125	FREE CARBON CONTAINING
126	WITH CORROSION INHIBITOR
600	INORGANIC ACTIVE INGREDIENT CONTAINING
601	.Phosphorus or phosphorus compound
602	..Calcium containing
603	...Pyrophosphate
604	..Heavy metal containing
605	..Phosphorus acid
606	..Sodium containing or fluorine containing
607	.Hydrogen metal cyanide, cyanide, cyanate or thio analog thereof
608	..Heavy metal containing (e.g., nitroprusside, etc.)
609	...Thiocyanates
610	..Potassium or lithium containing
611	..Sodium containing
612	..Hydrocyanic acid
613	.Peroxide or compositions of or releasing gaseous oxygen or ozone
614	..Zinc containing
615	..Sodium containing
616	..Hydrogen peroxide
617	.Heavy metal or compound thereof
618	..Silver
619	...Nitrite
620	..Arsenic
621	...With organo-arsenate (e.g., paris green, etc.)
622	...Copper compound of arsenic
623	...Oxygen compound of arsenic
624	...Sodium compound of arsenic
625	...Manganese containing arsenic compound or with added manganese compound
626	...Chromium containing arsenic compound or with added chromium compound
627	...Lead compound of arsenic
628	...Calcium compound of arsenic
629	...With added organic compound
630	..Copper

	INORGANIC ACTIVE INGREDIENT CONTAINING
	.Heavy metal or compound thereof
	..Copper
631	...With cellulose-sulfur compound or lignin
632	...Halogen containing
633	...Hydroxide
634	...Carbonate
635	...Oxide
637	...Sulfur containing
638	...With added organic compound
639	..Manganese
640	...Potassium permanganate
641	..Zinc
642	...For topical application
643	...Orally assimilable or injectable composition
644	..Mercury
645	...Chlorine containing
646	..Iron, cobalt, nickel, vanadium, molybdenum, or palladium
647	...Ferric
648	...Ferrous
649	..Gold or platinum
650	..Tin, gallium, germanium, indium, or tellurium
651	..Antimony
652	..Lead
653	.Bismuth
654	..Cadmium
655	..Chromium
656	...Potassium dichromate
657	.Boron
658	..Borax
659	..Boric acid
660	..Borates
661	.Elemental chlorine or elemental chlorine releasing inorganic compound (e.g., chlorties, hypochlorites, etc.)
662	..Chlorate
663	..Chloride
664	...Ammonium chloride
665	..Alkali metal or alkaline earth metal
666	.Hydrochloric acid
667	.Elemental iodine or iodine compound
668	..Iodate
669	..Iodide
670	...Potassium iodide
671	...Sodium iodide
672	..Iodophors
673	.Elemental fluorine or fluorine compound
674	..Silicofluoride
675	..Calcium containing
676	..Sodium containing
677	.Alkali or alkaline earth chloride (e.g., barium or lithium chloride, etc.)
678	..Calcium chloride
679	..Potassium chloride
680	..Sodium chloride
681	..Magnesium chloride
682	.Aluminum, calcium or magnesium element or compound containing
683	..Magnesium silicate
684	..Aluminum silicate
685	..Aluminum chloride or bromide
686	..Carbonate or bicarbonate
687	...Calcium carbonate
688	..Oxide or hydroxide
689	...With stabilizer or suspending agent
690	...Aluminum hydroxide
691	...Aluminum oxide
692	...Magnesium hydroxide or oxide
693	...Calcium hydroxide
694	....Characterized as lime or slaked lime
695	...Lime-sulfur
696	..Calcium containing sulfur compound, (e.g., calcium sulfate, etc.)
697	...Magnesium sulfate, (e.g., epson salts, etc.)
698	..Alum or burnt alum
699	.Carbon disulfide, monoixde or dioxide
700	..Carbon dioxide
701	..Carbon disulfide
702	.Selenium or compound thereof
703	.Elemental sulfur, or compound thereof
704	..With inorganic siliceous material
705	..Sulfur, per se
706	..Sulfide
707	...Disulfides
708	...Hydrogen sulfide
709	..Sulfate
710	...Ammonium sulfate
711	..Sulfites or thiosulfates
712	..Sulfur dioxide
713	..With added organic compound
714	...Plant extract of undetermined constitution
715	.Carbonate
716	..Ammonium carbonate
717	..Bicarbonate
718	.Nitrates or nitrites or nitric acid or nitrogen oxides
719	.Ammonia or ammonium compound containing
720	..Ammonium chloride
721	..Aqueous ammonia containing
722	.Alkali metal or alkaline earth containing
723	.Elemental bromine or bromine compound containing
724	.Silicon dioxide containing
195.1	PLANT EXTRACT OR PLANT MATERIAL OF UNDETERMINED CONSTITUTION
196.1	.Pine oil, tar, gum, or resin.
197.1	.Tobacco or tobacco extract

****
CLASS 514 IS AN INTEGRAL....
PART OF CLASS 424 AS SHOWN..
BY THE POSITION OF THIS BOX.
IT PROVIDES FOR.............
PHARMACEUTICAL COMPOSITION..
AND PROCESSES HAVING........
DESIGNATED ORGANIC ACTIVE...
INGREDIENTS CHARACTERIZED...
BY THIS STRUCTURE. ....
****

DIGESTS

****

DIG 1	Aerosol hair preparation
DIG 2	Resin hair settings
DIG 3	Hair bleach
DIG 4	Dandruff
DIG 5	Stick
DIG 6	Chelate
DIG 7	Microporous membranes
DIG 8	Systemic pesticides
DIG 9	Fish posts
DIG 10	Insect repellent
DIG 11	Termite treating
DIG 12	Fertilization attaching inhibition
DIG 13	Burn treatment
DIG 14	Topical contraceptives and spermacides
DIG 15	Suppositories

CLASS 425 PLASTIC ARTICLE OR EARTHENWARE SHAPING OR TREATING: APPARATUS

1 MEANS UTILIZING FORCE FROM EXPLOSIVE OR THERMIC COMPOSITION
2 SHAPING MEANS EMPLOYING ANATOMICAL BODY OR PORTION THEREOF (I.E., ANIMAL OR PLANT)
3 WITH DIRECT APPLICATION OF MAGNETIC FORCE TO MANIPULATE SHAPING MEANS OR WORK
4 R WITH MECHANICAL MEANS FORMING OR EXPANDING PORES (E.G., FOAMING, ETC.)
4 C ..Continuously
5 MEANS ENCAPSULATING NORMALLY LIQUID MATERIAL
6 MEANS MAKING PARTICULATE MATERIAL DIRECTLY FROM LIQUID OR MOLTEN MATERIAL
7 .By means applying fluid jet or blast to unconfined liquid material
8 .By slinger or rotating liquid comminutor
9 ..Cotton candy maker
10 .And distinct means applying congealing fluid to formed particles
11 PRODUCT OR PREFORM REPAIR OR RESTORING MEANS
12 .Hand manipulable tool
13 .Means feeding fluent stock under pressure
14 .Shape conforming sleeve or deformable pressure wrap means
15 .Tire segment engaging channel box coacting with pressure surface or rim
16 ..Adjustable sidewall channel box
17 .Tire recapping, rebeading or sidewall replacing means
18 ..Simultaneously on plural tires
19 ..Including carcass or tread mold aligning means
20 ..Band or channel type recapping mold
21 ...Including axially supported bead spreading means
22 ...Including sidewall pressure platens
23 ...Means applying pressure to carcass interior
24 ....Means applying fluid pressure directly
25 ...Diametrically separable mold sections coacting with tire carcass
26 .Means for supporting only a portion of a tire
27 ..Expansible internal support
28.1 RESHAPING, RESIZING OR VULCANIZING MEANS FOR TIRE, TIRE TUBE, OR DRIVE BELT
29 .Control means responsive to condition sensing means
30 .Control means responsive to independently operated timer
31 .Means shaping drum shaped preform to tire casing shape
32 ..Mold or housing encasing preform
33 ...And means inserting pressurizing diaphragm into mold or housing
34.1 .Plural female molds for plural preforms
34.2 ..Forming belts (e,g., drive, transmission, endless)
34.3 ..Within separate vulcanizing chamber
35 .Toroidal or annular female shaping means and coacting means holding preform thereagainst
36 ..Including distinct means to engage tire-type bead
37 ..Including core pins forming transverse voids in solid tire portion
38 ..Including means placing preform in mold or removing product from mold
39 ..Female mold surface is expansible
40 ..Including heating or cooling means
41 ...Electrical
42 ...Within cavity of hollow preform
43 ..Coating holding means is expansible structure
44 ..Means to directly apply fluid pressure to preform
45 ...Inner tube type including valve stem feature
46 ..Including removable tire tread shaping portion
47 .Sectional female mold including locking or clamping assembly means
48 .Interior holding means or curing bag inserter, releaser, or remover
49 .Internal mold, form or support for toroid
50 ..Including heating or cooling means
51 ..Expansible surface
52 ...Fluid pressure actuated diaphragm type
53 ....Including valve stem
54 ..Sectional
55 ...Removable portion
56 ....Annular assembly clamping ring
57 ....Internal support held in assembly by cam or wedge means
58 ..Bead clamping means, air bag support means or means sealing tire opening
58.1 .Post cure inflator
59 UTILIZING SUBTERRANEAN FEATURE AS SHAPING MEANS
60 BOOM MOUNTED DEPOSITING AND FORMING MEANS OF THE CARROUSEL TYPE
61 WITH SHIP OR BOAT LAUNCHING MEANS OR DRYDOCK
62 WITH TRANSPORTATION DEVICE FOR RELOCATING MOLDING APPARATUS TO DIFFERENT SITE (E.G., LAND VEHICLE, ETC.)
63 BUILDING FORMS OR CONSTRUCTION ENGINEERING TYPE MOLD WITH REPOSITIONING MEANS FOR PROGRESSIVE MOLDING
64 .Including mold charging means
65 .Means penetrating or embedded in previously formed section to support mold
66 CONTINUOUS FILAMENT FORMING OR FILM CASTING MEANS WITH STRETCHING MEANS COMPRISING PRODUCT ADVANCING MEANS
67 IMMERSED SHAPING ORIFICE DISCHARGING DIRECTLY INTO LIQUID BATH OR SHOWER MEANS
68 .Additional downstream means for treating product by fluid
69 .Shaping orifice and bath or shower means mounted for relative movement
70 .Means directing product through tubular conduit within bath or shower means
71 INCLUDING MEANS ADVANCING CONTINUOUS LENGTH WORK THROUGH DOWNSTREAM LIQUID BATH OR SHOWER MEANS
72.1 SHAPING ORIFICE AND DOWNSTREAM WORK CONTACTING GASEOUS TREATING MEANS
72.2 .Orifice for filaments or fibers (e.g., spinneret)
73 INCLUDING VENTILATING TYPE HOOD OR CHAMBER ENCASING A MATERIAL HANDLER
74 .Recovering or recycling gas or vapor
75 .Material handler is endless casting surface
76 MEANS IMPARTING IRREGULAR DENIER TO FILAMENTS
77 ULTRA HIGH PRESSURE GENERATING DEVICE
78 MEANS FOR MOLDING POWDERED METAL
79 .Continuous length product formation
80.1 AIR FELTING TYPE SHAPING MEANS

AIR FELTING TYPE SHAPING MEANS
81.1 .Means forming stratified products
82.1 .With particle liberating means (e.g., cutting, carding, etc.)
83.1 .Means forming running length product
84 WITH FORAMINOUS OR ABSORBENT MEANS FOR REMOVAL OF VEHICLE OR COMPONENT IN LIQUID FORM DURING OR AFTER SHAPING
85 .Vacuum means
86 INCLUDING HANDLING MEANS OR FEATURE FOR TREATING LIQUID OR VEHICLE LIQUID, OR CONDENSATE
87 HAND MOVABLE, SUBSTRATE TRAVERSING, PLURAL DIMENSION SHAPING MEANS INCLUDING MOLDING MATERIAL SUPPLY
88 WITH FACTORY STRUCTURE FEATURE
89 WITH INTERPOSED NON-ADHERING WEB OR SHEET TYPE PARTING MEANS
90 WITH MEANS APPLYING COATING (E.G., PARTING, ETC.) MATERIAL TO WORK OR WORK CONTACT MEANS
91 .Plural diverse type applicators
92 .Plural spaced applying means applying material to work and work contact means
93 .Immersion type
94 .Means contacting work downstream of shaping member
95 .By means attached to or within male shaping member
96 .Separate means applying material directly to shaping means, dough divider trap chamber, or between work and shaping means
97 ..By means injecting material into extrusion head or nozzle
98 ..To female mold or dough divider trap chamber
99 ...Orbital or conveyor mounted mold
100 ....By spray means or pneumatic conveyor type applicator
101 ..To endless surface type shaping means
102 .To work contact means upstream of shaping means
103 ..By spray means or pneumatic conveyor type applicator
104 .To work downstream of shaping means
105 ..By means striping or applying a definite pattern
106 ..With reshaping or cutting means downstream of coating means
107 WITH MEANS LUBRICATING COOPERATING APPARATUS PARTS
108 ROD END TO ROD END SPLICING OR JOINING TYPE
500 PREFORM ASSEMBLY MEANS AND MEANS FOR BONDING OF PLURAL PREFORMS INVOLVING PREFORM RESHAPING OR VULCANIZING
501 .Vulcanizing or curing means including a conforming preform support
502 ..With means to release or remove product from support
503 .Reshaping means utilizing fluid pressure directly contacting work
504 ..Vacuum or suction
505 .Means forming indefinite length product
506 .With treatment means other than assembling, bonding, shaping or reshaping means
507 ..Means to modify temperature of work or product
508 ...Heating
509 ....And cooling
510 ..Severing means
511 ...And means for forming preform from bulk material
512 ...Plural distinct severing means
513 ....Diverse
514 ...Downstream of bonding means
515 .With additional shaping means to form or reshape preform upstream of bonding means
516 ..Extrusion
517 .Means press fitting or forcibly embedding one preform into another preform
518 .Plural reshaping means
519 ..Opposed, registering, coacting mold cavities
520 .Opposed coacting press members
521 ..Male shaping member and female mold
110 DISTINCT MEANS TO FEED, SUPPORT OR MANIPULATE PREFORM STOCK AND MEANS FOR SHAPING FLUENT OR BULK STOCK TO FORM UNITED PRODUCT
111 .And means to apply stress to preform and uniting in stressed condition
112 .And means to form or reshape preform
113 .Extrusion shaping means
114 ..Means to feed or support plural preforms to or at extrusion means
115 .Endless surface means to shape fluent material
116 .Opposed registering coacting female molds
117 .Female mold type means
118 ..Including hand manipulatable support for edible receiver (e.g., ice cream cone, etc.)
119 ..Shoe last type support for preform
120 ..Plural sources feeding the fluent material
121 ..Means to feed or support common preform to or at spaced female molds
122 ..Means to continuously feed indefinite length preform
123 ..Means to support plural preforms in spaced relation in or at common female mold
124 ...Washer type preform
125 ..Female mold or preform support vertically movable
126.1 ..Means to convey preform to female mold
126.2 ...Stick inserter
127 ..Preform stock acting as reaction shaping surface cooperating with recessed fluent stock shaping means
128 ..Coacting pressure means
129.1 ..Means to charge fuent stock under pressure
129.2 ...Shoe or boot
130 MEANS FEEDING FLUENT STOCK FROM PLURAL SOURCES TO COMMON SHAPING MEANS TO FORM COMPOSITE PRODUCT
131.1 .Extrusion shaping means
131.5 ..Comprising spinnerette
132 ..Intermittent feed
133.1 ..Concentric
133.5 ..For extruding film
134 .Traveling female mold type shaping means
135 CONTROL MEANS RESPONSIVE TO OR ACTUATED BY MEANS SENSING OR DETECTING A CONDITION OR MATERIAL TRIGGERED
136 .Means responsive to abnormal condition completely stop operation of machine
137 ..Means responsive to material remaining in mold from previous molding operation
138 ..Means responsive to improper mold position
139 .Article ejector or stripper control
140 .Control means responsive to product weight or dimension

CONTROL MEANS RESPONSIVE TO OR ACTUATED BY MEANS SENSING OR DETECTING A CONDITION OR MATERIAL TRIGGERED
.Control means responsive to product weight or dimension
141 ..Thickness
142 .Cutter control
143 .Temperature control
144 ..Of mold cavity or fluent material to shaping or discharging orifice
145 .Feed control of material en route to shaping area
146 ..By pressure actuated valve
147 ..By stopping or adjusting flow responsive to material level in collector or mold
148 ..By means responsive to weight of feed material
149 .Molding pressure control means responsive to pressure at shaping area (e.g., injection or press mold, etc.)
150 .Mold motion or position control
151 WITH SAFETY FEATURE
152 .Plural starting buttons or mold operating means dependent upon position of a machine element
153 .Secondary means to prevent accidental motion, (e.g., mold closing, etc.) or means to relieve gaseous pressure
154 .Means to alter operation due to presence of foreign matter or overload
155 WITH CONTROL MEANS RESPONSIVE TO INDEPENDENTLY OPERATED TIMER
156 .For timing period mold is closed or period molding pressure is maintained
157 ..In press mold cycle
158 ...With timer for molding material preheat period
159 .For timing mold filling means
160 .For timing heating or cooling means
161 INTERLOCKED DIVERSE FUNCTION ELEMENTS
162 WITH ELECTRICAL CONTROL SYSTEM
163 .Of diverse shaping means or sequential contact of work with different shaping elements
164 .For severing product from shaped mass
165 .Of product removal from molding surface
166 .Of intermittent delivery of fluent charges to shaping surface
167 .Of ram or platen reciprocation in press molding cycle
168 WITH MEANS ADJUSTING SYNCHRONIZATION OR COMPENSATING FOR WEAR
169 WITH INDICATOR, SIGNAL, RECORDER, ILLUMINATOR, OR INSPECTION MEANS
170 .For molding temperature or pressure
171 .For determining, observing, or recording position of adjustable element
172 ..Element is means determining product size
173 .Means permitting visual inspection by operator
174 MEANS APPLYING ELECTRICAL OR WAVE ENERGY DIRECTLY TO WORK
174.2 .Sonic or supersonic wave energy
174.4 .Radiated energy
174.6 .Electrical energy conducted through work
174.8 R .Electro-static or inductive field
174.8 E ...Electro-static
175 MEANS FORMING A MOLD; OR FLASK, PER SE
176 .Including means to separate subsequently molded product from formed mold (e.g., destructible starch type, etc.)
177 .Press means to form mold
178 .Including ram type feed of molding material or means to break bond between flask and contents
179 .Including, structurally integral fastening means
180 .Three part flask
181 CONVERTIBLE
182 WITH APPARATUS ASSEMBLY OR DISMANTLING MEANS OR WITH IDLE PART
183 .Plural wear or shaping surfaces mounted for alternative use
184 .Shaping and severing means mounted for alternative use
185 .Means permitting removal or substitution of elements during apparatus operation
186 .Including support or guide means for disassembled element
187 .Means excavating from bulk with simultaneous shaping (e.g., ice cream scoop or plugger, etc.)
188 .Pivotally joined housings or housing sections enclosing removable element
189 .By handle or handwheel means
190 .For extrusion or injection type shaping means
191 ..Threaded die or die housing
192 R ..Including securing means retaining separable elements
192 S ....Spinnerets
193 .For press shaping surface
194 ..Calender roll or roll face
195 ..Female mold
196 .Blade type harvesting means or severing means
197 WITH UPSTREAM SCREEN OR PERFORATED PLATE FOR STRAINING, HOMOGENIZING, OR MIXING MATERIAL TO BE SHAPED
198 .Upstream of multi-orifice shaping die
199 .Plural screens or plates
200 WITH SEPARATE AND DISTINCT UPSTREAM AGITATING OR KNEADING MEANS
201 .Mixing roll type (e.g., rubber mills, etc.)
202 .With cutting, severing or comminuting means
203 .With separate and distinct gas withdrawal chamber
204 .Plural means being diverse, or parallel and intermeshing or concentric
205 .Serially arranged chambers each housing a kneading or mixing means
206 .Within or at forming means
207 .Within pressurizing chamber
208 ..By modified screw helix
209 .Agitator or kneader comprises means rotating about a horizontal axis
210 WITH MEANS CLEANING AND PURIFYING ATMOSPHERE SURROUNDING MOLDING DEVICE
211 WITH SOUND MUFFLING OR DAMPENING MEANS
212 WITH MEANS TO RESET OPERATION CYCLE
213 WITH PERSONNEL SUPPORT MEANS
214 WITH MEANS TO RETARD OR STOP MOVING ELEMENT (E.G., BRAKE, ETC.)
215 WITH MEANS TO GATHER EXCESS OR REJECTED STOCK MATERIAL
216 .Dynamic gatherer
217 ..Recycling type
218 FEMALE MOLD AND COOPERATING STOCK SMOOTHING MEANS OR EXCESS STOCK REMOVING MEANS
219 .Means carried by or attached to feeder

FEMALE MOLD AND COOPERATING STOCK SMOOTHING MEANS OR EXCESS STOCK REMOVING MEANS
220 .Conveyor or roll mounted mold with stationary smoothing or removing means
221 .For means excavating from bulk source with simultaneous shaping (e.g., ice cream scoop or plugger, etc.)
222 TUMBLING TYPE AGGLOMERATING MEANS FOR PARTICULATE MATERIAL
223 ENDLESS CASTING SURFACE AND COOPERATING HARVESTING MEANS
224 MEANS CASTING FLUENT STOCK OPERABLY ASSOCIATED WITH SHAPING SURFACE TO FORM INDEFINITE LENGTH PRODUCT
225 WITH SEPARATE APPARATUS CLEANING MEANS
226 .Coacting with diverse apparatus elements
227 .Coacting with forming means or dough divider type trap chamber
228 ..Reciprocating cleaner moving across a plunger face
229 ..Cleaner moving into working engagement
230 ..Cleaner coacting with endless surface press forming means or film forming casting surface
231 ..Cleaner coacting with traveling former
232 .Coacting with work contact means (e.g., conveyor or cutter, etc.) downstream of former
233 SETS OF PRESS COUPLES COMPRISING REGISTERING FEMALE MOLD CAVITIES
234 .Stacked
235 .Coacting cutting; edges on female mold sections
236 .Including positive means to eject product
237 .Mounted on rolls
238 DOUGH DIVIDER TYPE INCLUDING TRAP CHAMBER
239 .Including positive discharge assistant in supply hopper
240 .Reciprocating ram feeding to rotating trap chamber
241 .Rotating trap chamber pickup
522 FEMALE MOLD AND MEANS TO SHAPE PARISON DIRECTLY BY INTERNAL FLUID PRESSURE, (E.G., BLOW MOLD, ETC.)
523 .Utilizing laminated parison
524 .With filling means
525 .Forming baffle, bottleneck, or handle
526 .With heating or cooling means
527 .With means to sever product
528 .Including means to prepare parison
529 ..Parison stretching means
530 ...Comprising staged inflation means
531 ..Parison severing means
532 ..Parison forming extruder
533 ..Parison forming injection mold
534 ..Parison transfer means
535 .Including blowing medium supply means
536 ..Needle
537 .Including product ejector
538 .Plural female molds and means to shape parison at each directly by internal fluid pressure
539 ..With means to support molds for movement with continuously moving work
540 ..With rotary support for molds
541 .Including means to close or lock blow mold
542 FEMALE MOLD AND CHARGER TO SUPPLY FLUENT STOCK UNDER PRESSURE THERETO IN FLUID-TIGHT RELATIONSHIP (E.G., INJECTION MOLD, ETC.)
543 .Molding of thermosetting or cross-linking stock
544 ..Means for transfer molding
545 .To make slide fastener element
546 .With means to evacuate mold or provide controlled environment
547 .With means to heat or cool
548 ..Plural distinct means
549 ..Including heated or cooled nozzle
550 ..Including heated or cooled plasticizer
551 ..Including heated or cooled material supply hopper
552 ..Cooling means for female mold
553 .With preform severing means movable relative to mold
554 ..And product ejector
555 .With shrinkage compensation means
556 .With product ejector
557 .With accumulator, trap chamber, or serially arranged valves between charger and mold
558 ..Changeable volume accumulator
559 ..Accumulator with check valve supplying fluent thereto
560 ..Including valve to alternatively direct fluent stock to accumulator or mold
561 ..Accumulator with plunger of charger acting as valve
562 .With means between charger and mold to cut off flow of fluent stock (e.g., needle valve, baffle, etc.)
563 ..Biased, pressure responsive means
564 ..Nozzle valve
565 ...Mold actuated
566 ...Flush with or entering mold cavity
567 .With coupling between charger and mold
568 ..Including sepcific nozzle
569 ...And means to connect nozzle to mold
570 ...Plural nozzles
571 ...Flush with or entering into mold cavity
572 ..Supplying fluent stock to plural mold cavities
573 ..Including plural passages to single mold cavity
574 .With means to cause relative movement between mold and charger
575 ..Means to move mold
576 ...Rotary mold support
577 .Mold having movable core or movable pin
578 .With normally open stock chamber (e.g., hopper, etc.)
579 ..Charger including a shaping surface (e.g., Briquetting means, etc.)
580 ..And feeder to supply granular fluent stock to charger
581 ...Including plural molds
582 ...Rotary feeder
583 ...Reciprocating feeder
584 ...Air or vacuum utilized to feed stock
585 .Including feeder to supply stock to charger
586 ..Means to feed measured charge
587 ..Screw feeder
588 .Plural mold cavities
589 .With means to close mold
590 ..Varying pressure and/or speed closing
591 ..Common fluid pressure closes mold and performs injection
592 ..Including articulated link
593 ...Toggle
594 ..Charger and closing means on same side of mold
595 .With means to lock mold in closed position

253 FEMALE MOLD, PALLET HANDLING MEANS AND MEANS TO CHARGE FEMALE MOLD
254 .Including magazine type pallet supply means
255 .Pallet supported within mold sidewalls by vertically movable stripper
256 FEMALE MOLD AND MEANS TO FEED MEASURED CHARGE OF FLUENT MATERIAL THERETO
257 .Plural separate and distinct feeders
258 .Means to move feed means to female mold
259 ..Traveling female mold
260 ..Drawer type feed coacting with mold having movable bottom
261 .Means to sequentially move female mold
262 MEANS WITHDRAWING TROWEL TYPE SHAPING MEMBER FROM WITHIN OPEN ENDED MOLD TO SHAPE MATERIAL THEREIN
263 POTTERY WHEEL TYPE SUPPORT AND PROFILE
264 .Including separate and distinct male plunger
265 .Plural profile tools of diverse configuration
266 .Plural female molds or preform supports
267 .Rotatable profile tool
268 .Externally engaging profile tool
269 DIPPING TYPE SHAPING MEANS
270 .Mounted on moving support
271 ..Including means to infect or withdraw gas from internal portion of shaping means
272 ..Means causing diverse motion of shaping means (e.g., rotating during dipping, etc.)
273 ..Means moving immersion bath
274 ..Including stripper means
275 .Dipping form per se
276 MEANS EXCAVATING FROM A BULK SOURCE WITH SIMULTANEOUS SHAPING (E.G., ICE CREAM SCOOP OR PLUGGER, ETC.)
277 .Means includes enclosure for fluids of high specific heat
278 .Including means to arrange shaping surface during penetration of bulk
279 .Including means to aid separation of shape product from bulk
280 .Rotating or oscillating means to aid penetration of bulk
281 .Shaping surface having serrated or cutting edge
282 .Including product release means
283 ..Segmented or expansible shaping surface
284 ..Movable blade
285 ...Pivoted to rim
286 ..Ejector
287 FORMER OF THE DIE EXPRESSING TYPE MAKING DOUGHNUT SHAPES
288 .Relatively movable concentric internal and external members coacting with orifice means
289 PREFORM SEVERING MEANS
290 .Severing means is perforator
291 ..With scoring or diverse severing means
292 .Cutter guided by or cooperating with peripheral edge of female mold
293 ..And crimper
294 .Rotating means comprising circumferentially extending cutting and shaping channels coacting with a roll or platen having complementary channels
295 .Cutter guided by a template or a pattern
296 .Means for forming from bulk material, means for severing and means for reshaping
297 ..Severing means preceding reshaping means
298 .Configuration of cutting implement providing shaping cavity
299 ..Including surface deformation means
300 ..Honeycomb type cutters coacting internally of female mold or mold sidewalls
301 .Diverse severing means
302.1 .Serially arranged with preform reshaping means
303 ..Corrugating reshaper
304 ..Separate and distinct surface deformation means
305.1 ..Severing means preceding shaping means
306 .Plural distinct cutters
307 ..Cutters downstream of former
308 .Means forming from bulk and downstream severing means
309 ..Cutter operated by means extending from within shaping orifice
310 ..Utilizing former as cutter reaction surface
311 ...Moving cutter, stationary former
312 ....Cutter mounted on flexible endless conveyor
313 ....Single assembly plural cutting elements
314 ...Stationary cutter, plural forming
315 ..Utilizing product handler downstream of former as cutter aid
316 ...Single assembly plural cutting elements
317 COMBINED
318 HAND MANIPULABLE SHAPING COUPLE
319 MEANS TO FORM PREFORM FROM BULK AND MEANS TO CONVOLUTE OR TWIST THE PREFORM
320 .Convoluting means includes an endless surface
321 ..Convoluting means includes two or more endless surfaces
322 ..Convoluting means includes a roll
323 PRETZEL BENDING TYPE
324.1 DIVERSE DISTINCT TYPE SHAPING MEANS
325 .Shaping orifice and either a downstream preform reshaping means or vulcanizing means including conforming preform support
326.1 ..Utilizing a fluid pressure differential as a reshaping means
327 ..Reshaping or vulcanizing means is a press
328 .Roll means and diverse press means
329 THREE OR MORE ENDLESS SURFACES COOPERATING TO DEFINE A SHAPING APERTURE
330 THREE OR MORE PLATENS MOVABLE ON INTERSECTING PATHS TO DEFINE A SHAPING CAVITY
331 TRAVERSING ROLL PRESSURIZING MEANS OPERABLY ASSOCIATED WITH DOWNSTREAM PERFORATED PLATE
332 MEANS IMPARTING ROLLING ACTION TO DISCRETE CHARGE OF STOCK TO FORM A BALL
333 .Molding means having material shaping guideway providing arcuate path
334 SETS OF CONVOLUTING OR TWISTING MEANS
335 SETS OF SHAPING COUPLES COMPRISING AN ENDLESS SURFACE FOR PRESS FORMING, RESHAPING (PLURAL STAGE OR PASS) OR VULCANIZING
336 .Corrugating means for running length work
337 .Including intermediate chute, conveyor or guide means

338	GANG-PRESS, PLURAL PARALLEL LEAVES OR PLATENS
339	.Reshaping or vulcanizing means including conforming preform support
340	PLURAL RESHAPING MEANS OR PLURAL VULCANIZING MEANS INCLUDING CONFORMING PREFORM SUPPORT
341	.Including plural feeding means for preforms
342.1	.Including means for contacting work by fluid pressure
343	.Spaced reshaping or vulcanizing means acting on a single preform
344	PLURAL SETS EACH COMPRISING A FEMALE MOLD AND OPPOSED COAXIAL DYNAMIC PRESS MEMBERS
345	.Molds or press members traveling transversely to molding motion
346	SETS OF MALE-FEMALE PRESS MOLDS
347	.Traveling female mold
348 R	..Orbiting
348 S	....Split female mold
349	...Reciprocable mold, non-reciprocable plunger
350	...Including positive downstream ejection means
351	.Including positive means to eject product
352	FEMALE MOLD AND OPPOSED COAXIAL DYNAMIC PRESS MEMBERS
353	.Mold or press member traveling transversely to molding motion
354	.Opposed press members simultaneously moving in the same direction
355	.Opposed press members each moving one at a time toward the other
356	PLURAL SHAPING PLUNGERS OR ROLLS COACTING WITH A SINGLE FEMALE MOLD
357	PLURAL FEMALE MOLD CAVITIES COOPERATING WITH SINGLE PRESS MEMBER
358	.Male-type press member
359	..Transversely traveling female mold cavities
360	...Orbiting about horizontal axis
361	...Orbiting about vertical axis
362	.Roll press member coacting with endless surface having product forming shape imparting cavities
363	PRESS FORMING MEANS, PRESS RESHAPING MEANS, OR VULCANIZING MEANS IS ENDLESS SURFACE TYPE
364 R	.Endless belt coacting with stationary platen or with reciprocating shaping means
364 B	...Bagel
365	.Roll mounted within cooperating drum
366	.Cooperating rolls having nonparallel axes
367	.Including means to adjust relative position of a roll
368	.Expansible roll type
369	.Means corrugating a preform
370	..Endless belt
371	.Cooperating endless belts
372	..Including speed differential means
373	.Roll and coacting endless belt press member
374	.Roll and coacting stationary shaping surface
375	PATTERN CONTROL OF TRAVEL FOR A FORMING MEANS (E.G., DEPOSITING, ETC.)
376.1	STOCK PRESSURIZING MEANS OPERABLY ASSOCIATED WITH DOWNSTREAM SHAPING ORIFICE
377	.Including product handling means
378.1	.Including heating or cooling means
378.2	..Spinneret
379.1	..Plural spaced
380	.Including auxiliary shaping means (e.g., mandrel, etc.) associated with molding orifice
381	..Movable orifice or movable mounted inner mandrel within orifice
381.2	.Centripetal elastic melt extruder type
382 R	.Plural orifices
382 N	...Netting
382.2	..Spinneret type
382.3	.Including additional rotating means downstream of the primary pressurizing means
382.4	.Including restriction upstream of shaping orifice and downstream of primary pressurizing means
383	PREFORM RESHAPING OR RESIZING MEANS: OR VULCANIZING MEANS INCLUDING A CONFORMING PREFORM SUPPORT
384	.Including both heating and cooling means
385	.Surface deformation means only
386	..Sealing wax type
387.1	.Including shaping means comprising fluid pressure contacting work directly
388	..Vacuum or suction means
389	.By fluid pressure actuated flexible diaphragm
390	..Opposed, registering, coacting mold cavities
391	.Convoluting or twisting means
392	.Rod or tubular preform
393	..Mandrel to interiorly support work and means urging work against mandrel
394	.Coacting shaping surfaces (e.g., pressure surfaces, etc.)
395	..Opposed, registering, coacting mold cavities
396	..Corrugating platens or dies
397	..Including particular handling means for preform
398	..Relatively reciprocating plunger and female mold
399	...Stationary plunger and reciprocating female mold
400	...Including means positioning or centering work
401	...Including sprue or vent
402	.Utilizing rotary motion of work
403	.Shaping surfaces per se (e.g., mandrel, etc.)
403.1	.Including product handling means
404	SHAPING MEANS AND SUBSEQUENT PRODUCT TREATMENT MEANS
405.1	MEANS TO CREATE A VACUUM OR APPLY FLUID PRESSURE WITHIN A PRESS FORMING MOLD
405.2	.Isostatic type
406	PRESS FORMING APPARATUS HAVING OPPOSED PRESS MEMBERS
407	.Including both heating and cooling means
408	.Opposed, registering, coacting mold cavities
409	.Pressure applying member mounted for arcuate motion
410	.Periphery of female mold limiting the movement of a dynamic press member
411	.Opposed press shaping members insertable between opposed pressure applying means
412	.Male shaping member and female mold
413	..Including pallet handling means
414	..Including means to insert or remove core

	PRESS FORMING APPARATUS HAVING OPPOSED PRESS MEMBERS
	.Male shaping member and female mold
415	..Female mold movably associated with opposed press surfaces position therein
416	..Male shaping member penetrating superposed mold
417	..Expansible male shaping member
418	..Means rotating male shaping members
419	..Including means varying pressure of male shaping member during pressing
420	..Including provision to remove entrained gas
421	..Including vibrator or tamper
422	..With positive means to remove or eject product
423	..Female mold moving into a mating relationship with a male shaping member
424	FEMALE MOLD VIBRATOR OR TAMPER, AND PRODUCT RELEASE MEANS
425	FEMALE MOLD INCLUDING TAMPING MEANS OR MEANS UTILIZING MOLD MOTION TO DISTRIBUTE OR COMPACT STOCK THEREIN
426	.Relatively moving female type shaping member and internal (e.g., trowel, etc.)shaping member
427	..Moving internal shaping member, stationary female-type member
428	..Including tamper
429	.Including means imparting diverse motion
430	..Plural female molds
431	.Including tamper
432	.Means to vibrate shaping surface
433	.Peripherally supported for rotation on endless belt
434	.Plural female molds
435	.Means to rotate female mold about horizontal axis
436 R	SHAPING SURFACE INCLUDING MEANS TO RELEASE OR REMOVE PRODUCT FROM SHAPING SURFACE
436 RM	..Removal-Miscellaneous
437	.By differential gas pressure ejecting means
438	.By means releasing article from interiorly placed shaping surface
439	.By means inverting mold
440	.By means flexing or deforming the mold
441	.By movable mold sections
442	..Hinged mold sections
443	..Sections relatively movable vertically
444	.By movable ejector means entering mold cavity
445	MEANS TREATING SHAPED WORK
446	.In or on work confining surface
447	FORMING SURFACE AND MEANS FEEDING FLUENT STOCK THERETO
448	.Trap measuring compartment (e.g., feed drawer, etc.)
449	.Utilizing positive charging means
450.1	MOLD OPENING AND CLOSING MEANS AND SEGMENTED FEMALE MOLD
451	.Including traveling mold carrier or support
451.2	.Varying pressure and/or speed closing
451.3	.Rack and pinion
451.4	.Rotary cam
451.5	.Articulated link
451.6	..Toggle
451.7	.Wedge or screw
451.9	SEGMENTED FEMALE MOLD AND MOLD CLAMPING MEANS
452	FEMALE MOLD AND PALLET HANDLING MEANS

453	DYNAMIC SUPPORT OR DYNAMIC CARRIER AND FEMALE MOLD
454	.Means to raise or lower mold
456	VIBRATING MEANS (E.G., TAMPING ROD OR JARRING MEANS, ETC.) INCLUDING MECHANICAL MOVEMENT OR POWER MEANS
457	DYNAMIC MALE SHAPING MEANS INCLUDING MECHANICAL MOVEMENT OR POWER MEANS
458	HAND MOVABLE, SUBSTRATE TRAVERSING, PLURAL DIMENSION SHAPING MEANS
459	PROFILE, JIGGER TOOL OR POTTER'S WHEEL PER SE
460	SHAPING MEMBER FOR TRAVERSING THE INTERIOR SURFACE OF HOLLOW WORK
461	MEANS PROVIDING A SHAPING ORIFICE
462	.Plural distinct feed inlets
463	..Plural distinct shaping orifices
464	.Single inlet, plural shaping orifices
465	.Including means forming products with distinct portions of varying cross section
466	.Adjustable shaping orifice or shape imparting insert member (e.g., core, etc.)
467	.Core, pin or insert member
468	CORE AND POSITIONING MEANS THEREFOR
469	TAMP ROD, PLUNGER OR MALE SHAPING MEMBER
470	SHAPING OR CASTING SURFACE (E.G., PLASTERING OR GUNITE TYPE, ETC.)
471	.Endless shaping surface
472	MISCELLANEOUS
	*******************************
	CROSS-REFERENCE ART COLLECTIONS
	*******************************
801	BUTTON
802	CABLE TUBE OR ROD SPLICING
803	CANDLE OR CRAYON
804	CAPSULE MAKING
805	COMB OR BRUSH
806	FLASH REMOVAL
807	LACE TIPPING
808	LENS MOLD
809	SEAL (BOTTLE CAPS ONLY)
810	SOUND RECORD
811	STENCIL
812	VENTING
813	WATER BOTTLE
814	ZIPPER
815	CHEMICALLY INERT OR REACTIVE ATMOSPHERE
816	GAS MASK
817 R	MEANS MOLDING PORE FORMABLE MATERIAL
817 C	..Continuous
818	BELT
	*******************************
	DIGESTS
	*******************************
DIG 1	Accumulator
DIG 2	Air support
DIG 3	Appendage
DIG 4	Back pressure
DIG 5	Cammed
DIG 7	Coil
DIG 9	Cooling and color
DIG 10	Core positioning
DIG 11	Dental injection
DIG 12	Destructible mold and core
DIG 13	Electric heat
DIG 14	Expansible and collapsible
DIG 15	Explosive
DIG 16	Extrude and mold
DIG 17	Filament stretching apparatus
DIG 19	Flexible fluid pressure
DIG 20	Fluidized bed
DIG 21	Frictional drive
DIG 22	Friction heat
DIG 23	Glazing
DIG 24	Gora

DIG 25	Gutter
DIG 26	High pressure
DIG 27	Hot water bottle
DIG 28	Impact
DIG 29	Jigs and dies
DIG 30	Laminated mold
DIG 32	Lipstick
DIG 33	Magnet
DIG 34	Morin
DIG 35	Opposed plunger
DIG 36	Patching
DIG 37	Perforate
DIG 38	Pre-form
DIG 39	Pre-heat
DIG 40	Pulling wheel
DIG 41	Reshape
DIG 42	Ring
DIG 43	Rocket fuel core
DIG 44	Rubber mold
DIG 45	Safety
DIG 46	Scrap
DIG 47	Seal ring
DIG 48	Sheet clamping
DIG 49	Spinnerette mixer
DIG 50	Spray
DIG 51	Sprue removal
DIG 53	Stretch
DIG 54	Through travel mold
DIG 55	Teflon
DIG 56	Telephone
DIG 57	Toy molding
DIG 58	Undercut
DIG 59	United parts
DIG 60	Vacuum
DIG 61	Venetian blind
DIG 101	Aggregate and pellet
DIG 102	Air ejection
DIG 105	Brace
DIG 106	Chamber
DIG 107	Connection
DIG 108	Conveyor
DIG 109	Frangible connections
DIG 110	Heated mold
DIG 111	Hollow block
DIG 112	Inflatable form
DIG 113	Inner roll
DIG 115	Lubricator
DIG 116	Mold cleaning
DIG 117	Pallet
DIG 118	Pallet feeder
DIG 119	Perforated or porous
DIG 120	Pottery appendage
DIG 121	Projection
DIG 122	Reinforcing and aggregate
DIG 123	Repress
DIG 124	Rubber matrix
DIG 125	Sand mold
DIG 126	Silo mold
DIG 127	Spring
DIG 128	Swinging top press
DIG 129	Wedge
DIG 130	Wire reinforce
DIG 131	Yielding plunger
DIG 132	Portable
DIG 200	Molding plant(s)
DIG 201	.Diverse stations
DIG 202	.Earthenwave type
DIG 231	.Control for blow molding apparatus
DIG 217	Spinnerette forming conjugate, composite or hollow filaments
DIG 218	Pipe machine: socket forming apparatus
DIG 219	With stick inserting means for edible product (e.g., popsicles)
DIG 221	Injection mold closing and locking clamp, wedge or retention means
DIG 223	Injection mold closing means utilizing variable closing pressure
DIG 224	Injection mold nozzle valve
DIG 225	.Automatic control
DIG 226	.Actuated by contact with mold
DIG 227	Injection nozzle; positioned flush with mold or cavity
DIG 228	Injection plunger or ram: transfer molding type
DIG 229	Injection mold runner valve
DIG 230	Hay wafering or pelletizing means
DIG 235	Calendar
DIG 236	Attenuating
DIG 237	Varying density foam
DIG 238	Boat hull mold
DIG 239	Modular mold
DIG 240	Pre-fab mold
DIG 241	Wall panel mold
DIG 242	Pipe joint seal mold
DIG 243	Extrusion or injection molding
DIG 244	Die and matrix
DIG 245	Heat
DIG 246	Mold heating
DIG 247	Multipart injection molds
DIG 248	Uniting
DIG 249	Character

CLASS 426 FOOD OR EDIBLE MATERIAL: PROCESSES, COMPOSITIONS AND PRODUCTS

DECEMBER 1990

1 BAIT, ATTRACTANT, OR PROCESS OF PREPARATION
2 TREATMENT OF LIVE ANIMAL
3 NORMALLY NONINGESTIBLE CHEWABLE MATERIAL OR PROCESS OF PREPARATION
4 .Low-adhesive type
5 .Packaged, structurally defined, or coated
6 .Containing addition type polymer
7 FERMENTATION PROCESSES
8 .In package
9 .In presence of biocide or biostat
10 .With glucose oxidase
11 .Alcoholic beverage production or treatment to result in alcoholic beverage
12 ..Addition of enzyme containing material to alcohol containing beverage to stabilize, purify, or prevent turbidity formation
13 ..Multiple different fermentations
14 ..Including removal of alcohol from fermented substrate or fermentation of de-alcoholized substrate
15 ..Of fruit or fruit material
16 ..Of malt wort
17 .Preparation of vinegar
18 .Of farinaceous cereal or cereal material
19 ..Preparing or treating a hydrated wheat flour system containing Saccharomyces cerevesiae involving the combining of diverse material, or using permanent additive
20 ...Including additional enzyme, enzyme producing material, or microorganism
21 ...Including plant tissue other than wheat derived
22 ...Peroxide
23 ...Amino acid, separated peptide linkage or derivative
24 ...Carboxyl containing ester other than triglyceridic
25 ...Carboxylic acid or salt thereof, e.g., vinegar, etc.
26 ...Inorganic compound containing other than NaCl
27 ..Treating a hydrated wheat flour system containing Saccharomyces cerevesiae
28 ..Fermentation of cereal malt, or of cereal by malting, or treating cereal with amylolytic or diastatic enzyme
29 ...Preparation of beverage, beverage mash, or beverage wort
30 ....Movement of fermenting substrate through successive fermenting zones
31 ..Of bran, husk, or by-product, e.g., distillers residue, etc.
32 .Egg white per se, gelatin, collagen or blood
33 .Isolated triglyceride other than milk derived
34 .Of milk or milk product
35 ..With lipase
36 ..Preparation or treatment of cheese curd or cheese
37 ...With fungi or yeast
38 ...Treatment of curd with ferment material
39 ...Including addition of acid or acidic material
40 ...Including addition to, or treatment of milk prior to fermentation
41 ..Treatment of whey
42 ..Including addition of enzyme, enzyme producing material, or microorganism
43 ...Including addition of bacterial culture
44 .Of isolated seed, bean or nut, or material derived therefrom
45 ..Coffee or cocoa, e.g., coffee extract, etc.
46 ..Legume
47 .Of whole egg or yolk
48 .Of isolated carbohydrate
49 .Of plant or plant derived material
50 ..With pectase enzyme
51 ..Preparation of or treament of fruit or vegetable juice or water soluble extract other than tea
52 ..With added enzyme material or microorganism
53 ...Animal feed
54 ..Preparation of animal feed
55 .Material is mammal or fowl derived
56 ..With added enzyme, or added enzyme producing material or microorganism
57 ...Treatment or preparation of casing
58 ...Injection or pressure treatment
59 ...Material is comminuted, ground, or in finely divided form
60 .Of or with yeast or mold
61 DORMANT FERMENT CONTAINING PRODUCT, OR LIVE MICROORGANISM CONTAINING PRODUCT OR ONGOING FERMENTING PRODUCT, PROCESS OF PREPARATION OR TREATMENT THEREOF
62 .Yeast containing
63 .Proteolytic enzyme containing, e.g., papain, ficin, bromelin, trypsin, pepsin, rennin, etc.
64 .Malt, malt extract, or diastatic enzyme
66 POTABLE WATER OR ICE COMPOSITIONS OR PROCESSES OF PREPARING SAME
67 .Having incorporated gas
68 ICE COATING AND COATED PRODUCT
69 CONTAINING NON-PROTEINACEOUS NITROGEN SOURCE CONVERTIBLE TO AVAILABLE NITROGEN OR PROCESS OF PREPARATION
71 PRODUCT FOR PROMOTING THE EFFECT OF AN ALIMENTARY CANAL MICROORGANISM
72 PRODUCT WITH ADDED VITAMIN OR DERIVATIVE THEREOF FOR FORTIFICATION
73 .Vitamin is A or D
74 PRODUCT WITH ADDED PLURAL INORGANIC MINERAL OR ELEMENT FORTIFICATION
75 PRODUCT HAVING SAFETY FEATURE IN USE
76 FRANGIBLE FOOD HAVING DEFINED SCORE LINE OR WEAKENED PORTION
77 FORAMINOUS MATERIAL INFUSION TYPE, OR FORAMINOUS CONTAINER PER SE
78 .Having diverse soluble or dispersible material
79 .Multiple compartment
80 .Having flow compeller means, e.g., compressor, etc.
81 .Tapered gathered closure
82 .Having defined support or handle means
83 ..Nonrigid tethered type
84 .Chemically defined infusor material
85 PRODUCT WITH DRINKING TUBE
86 CUP HAVING SOLUBLE CHARGE THEREIN
87 PRODUCT WITH DEFINED INDICATING MEANS, E.G., INDICIA, ETC.
88 .Temperature responsive
89 SURFACE COATED, FLUID ENCAPSULATED, LAMINATED SOLID COMPOSITE OF SELF-SUSTAINING DISSIMILAR EDIBLE MATERIAL
90 .Having inedible feature
91 ..Stick feature
92 .Animal meat derived component

	SURFACE COATED, FLUID ENCAPSULATED, LAMINATED SOLID COMPOSITE OF SELF-SUSTAINING DISSIMILAR EDIBLE MATERIAL
93	.Isolated whole seed, bean or nut, or material derived therefrom
94	..Dough or batter type
95	...Containing frozen material
96	.Dry flake, dry granular, or dry particulate material
97	..Having mineral or inorganic substrate
98	..Encapsulated, or coated triglyceridic material
99	..Triglyceridic material film former
100	.Frozen material
101	..Ice cream type
102	.Readily identifiable fruit or vegetable derived
103	.Sugar or carbohydrate containing
104	IMITATED, SIMULATED, ORNAMENTAL, THREE-DIMENSIONAL PRODUCT OR CONFECTIONARY PRODUCT HAVING CHILD-ORIENTED UTILITY
105	MEAT FILLED CASING, SAUSAGE TYPE
106	PACKAGED OR WRAPPED PRODUCT
107	.Having specific electrical or wave energy feature
108	.Multiple discrete packages containing same material
109	.Having heat exchange material
110	.Having package attached support means
111	.Having telescoping feature to increase or decrease package dimension or having packaging structure cooperating with food expansion
112	.Having consumer oriented diverse utility
113	..For cooking or heating food
114	...Meal type
115	..For dispensing or serving
116	...Aerosol type
117	...Baby bottle type
118	.Packaging structure cooperating with food generated gas
119	.Having nonedible spacer to segregate all units of multiunit food product
120	..Diverse food
121	.Lapped multiplanar unit, i.e., shingled
122	.Having destructive type opening along scored or perforated line
123	.Having destructive type opening utilizing tearing appendage
124	.Package containing separate noncoated or laminated interior inedible solid material
125	.Food is surface coated with peelable or strippable nonedible film former
126	.Three or more layered diverse packaging materials having at least one metal layer
127	.Three or more layered packaging materials
128	.Packaged product is dough or batter or mix therefor
129	.Packaged product is animal flesh
130	.Packaged product is lacteal derived
131	.Canned
132	PRODUCT WITH ADDED INEDIBLE FEATURE OTHER THAN THAT WHICH CONSTITUTES A PACKAGE
133	.Having food preserving agent
134	.Stick feature
135	.Feature is casing
138	EDIBLE CASING OR CONTAINER
139	.For frozen material
140	.Animal derived
143	PRODUCT HAVING OPEN-ENDED CAVITY
144	PRODUCT IS GROOVED OR CORRUGATED
231	MEASURING, TESTING, OR CONTROLLING BY INANIMATE MEANS
232	.Involving packaged product or preparation thereof
233	.Preparing solid product in final form by heating
234	TREATMENT OF PACKAGED PRODUCT BY ELECTRICAL OR WAVE ENERGY
235	APPLICATION OF A GAS, MIST, SMOKE OR VAPOR TO A FOOD MATERIAL UNDER THE INFLUENCE OF ELECTRICAL OR WAVE ENERGY
236	INVOLVING TREATMENT OF A GAS BY ELECTRICAL OR WAVE ENERGY AND SUBSEQUENT CONTACT OF SAID TREATED GAS WITH A FOOD MATERIAL
237	DIRECT APPLICATION OF ELECTRICAL OR WAVE ENERGY TO FOOD MATERIAL
238	.Involving wave energy of the sonic or pulsating type
239	.Movement of material by an applied electromotive force, e.g., electrodialysis, etc.
240	.Involving ionizing radiation, e.g., beta rays, X-rays, gamma rays, etc.
241	.Heating by electromagnetic wave
242	..Product dry in final form
243	..To cook
244	.Involving dielectric heating or passage of electric current through food material
245	.Including step of shaping in mold to form final desired configuration
246	..Material treated is meat
247	..Material treated is fluent
248	.Treatment with ultraviolet or visible light
249	PREPARATION OF FROZEN OR SHAPED PRODUCT WHEREIN THE PRODUCT IS OF VARIOUS EXTERNAL COLORS, E.G., VARIEGATED, ETC.
250	.ADDITION OF DYE OR PIGMENT, INCLUDING OPTICAL BRIGHTENER
251	.To whole nut or bean
252	.To whole citrus fruit
253	REMOVING NATURAL COLOR BY CHEMICAL REACTION, E.G., BLEACHING, ETC.
254	.With preliminary noncolor removal treatment with acid, base or salt
255	.In plural steps with diverse color removers
256	.Including pressure application or defined movement of material during color removal
257	.By organic color remover
258	..Peroxy organic compound
259	.By sulfur compound
260	.By nitrogen compound
261	.By heavy metal compound or peroxide
262	PRESERVING OR MODIFYING COLOR BY USE OF DIVERSE ADDITIVE
263	.Utilizing gaseous medium
264	.Red heme, i.e., meat pigment
265	..Additive is organic compound
266	...Including inorganic nitrogen compound
267	.Additive containing calcium
268	.Additive is or contains organic compound of known structure
269	..Is or contains sulfur
270	.Plant derived tissue containing other than potato
271	INVOLVING ION EXCHANGE, SEQUESTERING OR CHELATING MATERIAL
272	ADHESION OF FOODS BY A BASE SUPPLIED CONSTITUENT OTHER THAN A DRY PRODUCT
273	COATING OF NONDRY FOOD OTHER THAN ANIMAL FLESH BY A BASE SUPPLIED CONSTITUENT

274 ASSEMBLING PLURAL EDIBLE PREFORMS HAVING EXTRANEOUS BINDER, RELEASE AGENT OR DIVERSE FOOD INTERPOSED BETWEEN PREFORMS
275 .Dough is preform
276 SHAPING BY EXTRUDING INTO CHEMICALLY REACTIVE FLUID
277 .Forming edible packaging material, e.g., casing, etc.
278 NONTRANSITORY CHEMICAL ADDITION TO EDIBLE ANIMAL DERIVED PACKAGING MATERIAL
279 CREATING CAVITY BY DISPLACEMENT OF MOLD-HELD FLUENT OR PLASTIC EDIBLE, AND FILLING FORMED CAVITY WITH DIVERSE EDIBLE
280 .Cavity formed by shape of inedible internal mold member
281 INTERNAL APPLICATION OF NONTRANSITORY FLUENT MATERIAL TO SOLID EDIBLE BY INJECTING, ARTIFICIAL PORE FORMATION OR EXTERNAL PRESSURE
282 FILLING CAVITY IN EDIBLE SOLID PREFORM WITH EDIBLE MATERIAL
283 .Dough type preform
284 .Preform is tubular
285 BUILDING UP UNITS FROM DIVERSE EDIBLE PARTICULATE MATERIAL TO FORM DRY PRODUCT, E.G., AGGLOMERATING, TABLETING, ETC.
286 REMOVAL OF PESTICIDAL RESIDUE
287 INVOLVING REMOVAL OF EXTERIOR PORTION ONLY OF PLANT MATERIAL BY CHEMICAL ADDITION
288 .Material is nut or seed
289 APPLYING DIVERSE EDIBLE PARTICULATE SOLID TO COAT OR IMPREGNATE A SOLID CORE, I.E., SURFACE COATING OR IMPREGNATION
290 .Including subsequent liquefaction of particulate solid
291 .Liquid surface coating subsequent to application of particulate solid
292 .Sequentially applied particulate solid
293 .Including surface coating with liquid or plastic
294 .Suspension of particulate solid in gaseous medium
295 .Embedding, rolling or tumbling of particulate solid in core
296 .Subsequent cooking
297 COATING OR SPREADING PLASTIC ON AN EDIBLE PREFORM AND SUBSEQUENTLY SHAPING THE PREFORM
298 TREATING UNSHELLED EGG
299 .Removal or puncture of shell
300 .By fluent material
301 ..Material is unctuous
302 SURFACE COATING OF A SOLID FOOD WITH A LIQUID
303 .Plural distinct steps of coating
304 ..By same composition
305 .Including subsequent specified treatment of coating
306 .By chocolate or Theobroma cocoa derived
307 .By application of molten material
308 .Of natural shell or rind
309 .Of whole isolated seed or bean
310 .Preserving
311 INCLUDING VITAMIN PROCESSING
312 CONTACTING FOOD IN LIQUID OR SOLID STATE WITH EXTERIORLY PRODUCED GAS
313 .Gas is hydrogen, e.g., hydrogenation, etc.
314 .Applied material formed by combustion or is product of combustion
315 ..Animal flesh material
316 .Including packaging of contacted food or treatment of material in package
317 .Lacteal material
318 .Applied material contains a halogen atom
319 .Applied material contains nitrogen compound or contains sulfur atom
320 .Applied material is biocidal or disinfecting
321 INHIBITING CHEMICAL OR PHYSICAL CHANGE OF FOOD BY CONTACT WITH A CHANGE INHIBITING CHEMICAL AGENT OTHER THAN AN ANTIOXYGEN AGENT
322 .Treatment with heavy metal or compound thereof
323 .Chemical agent is impregnated in or coated on nonedible material
324 .Including step of packaging
325 ..Subsequent heat treatment of package
326 ..With biocidal or disinfecting chemical agent
327 .Including step of lowering temperature to or below 32 degrees F. or treatment at or below 32 degrees F.
329 .Foam stabilization or inhibiting foaming or gushing or inhibiting the decompo sition of a foamed product
330 .Treating liquid material
330.1 ..Egg material is basic ingredient
330.2 ..Lacteal material is basic ingredient
330.3 ..Beverage or beverage concentrate
330.4 ...Alcohol containing
330.5 ...Fruit and vegetable juice
330.6 ..Triglyceridic oil is basic ingredient
331 .Animal flesh, citrus fruit, bean or cereal seed material
332 ..Animal flesh
333 ..Citrus fruit
334 .Lacteal derived containing
335 .Biocidal or disinfecting chemical agent
530 RENOVATING BUTTER
531 PRODUCTS PER SE, OR PROCESSES OF PREPARING OR TREATING COMPOSITIONS INVOLVING CHEMICAL REACTION BY ADDITION, COMBINING DIVERSE FOOD MATERIAL, OR PERMANENT ADDITIVE
532 .With biocide or biostat
533 .Reaction flavor per se, or containing reaction flavor improver of unknown or undefined chemical constitution
534 .Flavor per se, or containing flavor or flavor improver of identifiable organic chemical constitution
535 ..Sulfur containing
536 ..Heterocyclic
537 ...Hetero-N-atom
538 ..Carbocyclic
539 .Bleach per se or composition containing same
540 .Specific dye or pigment per se or compositions containing same
541 .Containing antioxidant or antioxidant per se
542 ..Of plant or animal matter of unknown chemical structure
543 ...Cereal
544 ..Organic active chemical containing
545 ...Heterocyclic atom containing
546 ...Composed solely of carbon, hydrogen, oxygen, and salts thereof
547 ...Phosphorus or sulfur
548 .Noncarbohydrate sweetener or composition containing same
549 .Basic ingredient is starch based batter, dough product, etc.
550 ..Noncereal base
551 ..Having chemical gas producer

	PRODUCTS PER SE, OR PROCESSES OF PREPARING OR TREATING COMPOSITIONS INVOLVING CHEMICAL REACTION BY ADDITION, COMBINING DIVERSE FOOD MATERIAL, OR PERMANENT ADDITIVE
	.Basic ingredient is starch based batter, dough product, etc.
	..Having chemical gas producer
552	...Batter type
553	....Triglyceride material containing
554	.....Dry mix
555	..Dry mix
556	..Pastry type
557	..Alimentary paste
558	..Egg containing
559	..Puffed
560	..Flakes, chips, filaments, sheets, or pellets
561	.Gas or gas generating agent per se
562	..Baking powder
563	...Phosphorus containing
564	.Foam or foamable type
565	..Frozen
566	...Containing carboxylic acid ester other than a triglyceridic ester
567	...Containing carbohydrate other than sugar
568	..Egg derived
569	..Beverage or mix
570	..Dairy cream or topping
571	..Marshmellow or chiffon
572	..Cream filler, fondant, frosting, icing or confection
573	.Gels or gelable composition
574	.Meat, meat extracts, or meat analog
575	..Seaweed type
576	..Gelatin or derivatives
577	..Pectin
578	..Starch or derivatives is gel former
579	...Puddings
580	.Basic ingredient lacteal derived other than butter substitute in emulsion form
581	..Butter is the basic ingredient
582	..Cheese or cheese type product
583	..Buttermilk, yogurt, sour cream, whey
584	..Containing cocoa or flavored beverage
585	..Containing fat or oil other than lacteal derived
586	..Cream or butterfat
587	..Liquid condensed or evaporated milk
588	..Powdered milk
589	.Soup, sauce, gravy or base
590	.Beverage or beverage concentrate
591	..Dry effervescent
592	..Alcohol containing
593	..Chocolate or cocoa
594	..Coffee and substitutes therefor
595	...Whole or ground, including additive other than extractive type
596	...Coffee substitute
597	..Tea and substitutes therefor
598	..Bean, nut or seed type
599	..Fruit and vegetable juice
600	.Hop derived ingredient, including hopping of wort
601	.Fat or oil is basic ingredient other than butter in emulsion form
602	..Aqueous emulsion
603	...Butter substitute, e.g., margarine, etc.
604	....Having emulsifier or antispattering, antiweeping or antileaking agent
605	...Egg containing, e.g., mayonnaise, etc.
606	..Fluid, formulated added hard stock containing type, e.g., fluid shortening, etc.
607	..Mixed formulated triglycerides per se, e.g., margarine oil, hard butter, etc.
608	..Animal derived triglyceride material as sole triglyceride, e.g., lard, etc.
609	..Particulate or antistick compositions, e.g., pan grease, etc.
610	..With defined preservative, e.g., crystallization inhibitor, etc.
611	..Having ester other than triglyceridic carboxylic
612	...Liquid
613	..Having lacteal or egg ingredient or sugar or flavor
614	.Poultry egg is basic ingredient
615	.Plant material is basic ingredient other than extract, starch or protein
616	..Citrus derived
617	..Coconut containing
618	..Cereal material is basic ingredient
619	...Breakfast type
620	....Ready to eat
621	.....Flake or puffed
622	...Flour or meal type
623	...Animal food
624	....Distiller's or brewer's residue
625	...Puffed or flaked
626	...Acid or base treatment
627	...Single source
628	..Cream style vegetable
629	..Bean, seed or nut product
630	...Animal feed
631	...Cocoa
632	...Nut, including peanut
633	....In butter form
634	...Legume
635	..Animal food
636	...Grasses or straw
637	..Potato
638	..Spice, herb, or condiment thereof
639	..With added sugar
640	..Dried
641	.Animal derived material is an ingredient other than extract or protein
642	..Shroud effecting treatment
643	..Seafood
644	..Poultry
645	..Single source
646	..Comminuted
647	..Blood containing
648	.Nutritional or dietetic supplement, including table salt
649	..Sodium chloride or substitute therefor
650	.Flavor or flavor adjunct, acidulant or condiment
651	..Oleoresin or essential oil
652	.For use with meat, poultry or seafood
653	.For use with batter, dough or baked goods
654	.Stabilizing or preserving agent or emulsifier other than organophosphatide
655	.Extract
656	.Protein, amino acid, or yeast containing
657	..From animal
658	.Carbohydrate containing
659	..Fondant, fudge, icing or frosting
660	..Confection
661	..Carbohydrate is starch
662	.Organophosphatide

663	PREPARING OR TREATING LACTEAL BUTTER OR LACTEAL BUTTER SUBSTITUTE
664	.Lacteal butter
665	PROCESSES
383	.Applying indicia or ornamentation, or the treatment of article having indicia or ornamentation
384	.Freeze drying or freeze concentrating
385	..Product is solid in final form
386	.Separating volatile essence and combining the separated volatile essence with a food material
387	..Volatile essence derived from a liquid
388	.Combining material from single source without a previous food separation step of the different materials
389	.Per se removal of food product from mold, container or receptacle
390	.Preparing or treating food having diverse utility
391	..Dough or batter product, e.g., pie crust, etc.
392	.Packaging or treatment of packaged product
393	..Involving temperature 32 degrees F. or less
394	..In container having diverse utility, e.g., dispensing, etc.
395	..In container having structure cooperating with food material generated gas
396	..By covering rigid receptacle or support with flexible wrap or container
397	..In rigid liquid impermeable container, e.g., can, bottle, etc.
398	...Container wall has plural layers or package contains interior nonintegral solid inedible material
399	...Including delivery of pasteurized or sterilized food material to container, e.g., aseptic, etc.
400	....Including prior concentration of food material
401	....And subsequent heat treatment of sealed package
402	...Including water addition to or removal from normally solid food material
403	...Including heating of vented container containing food material
404	...Exteriorly applying reduced pressure to eliminate air or to effect a package having reduced air content
405	...With agitation of sealed container
406	....By rolling container on its horizontal axis
407	...Heat treatment of package, e.g., pasteurization, sterilization, etc.
408	....By heat exchange medium other than water per se, air, carbon dioxide, or other inert gas
409	....Lacteal material
410	..In flexible wrapper or container
411	...And exterior rigid receptacle
412	...Heat treatment of encased food
413	...Utilizing preformed container
414	...With molding or cutting
415	...Utilizing specified wrapping material
416	.Combined
417	.Preparing or treating triglyceridic fat or oil, or processes of separating triglyceridic fat or oil from a starting material, e.g., rendering, etc.
418	.Storing solid material under controlled condition
419	..Natural plant material
420	.Treating or preparing food material having nonedible feature in final product, e.g., interleaving, etc.
421	..Wherein feature is rigid handle member
422	.Treatment of liquid with nongaseous material other than water per se
423	..Inorganic silicon containing material, e.g., clay, etc.
424	..Liquid contact to effect a separation
425	.Extraction utilizing liquid as extracting medium
426	..Removing water from solid using nonglyceridic liquid
427	..Removing caffein or tannin
428	...Utilizing organic liquid
429	..Liquid is organic
430	...Of tissue containing seed or bean material
431	..Liquid is aqueous
432	...Coffee
433	....Preparation of ready to use beverage, i.e., brewing
434	....Extracting at different temperature
435	...Tea, i.e., Camellia senesis
436	...Cereal or treated cereal material
437	...Animal flesh material
438	.Heat treatment of food material by contact with glyceridic fat or oil, e.g., potato chip frying, etc.
439	..Farinaceous cereal dough or batter product, e.g., doughnut, etc.
440	...To puff or form pore
441	..Including water treatment
442	.Treatment of food material by addition of material other than water, air, carbon dioxide, nitrogen or inert gases, or mixtures thereof
443	.Preparation of product which is dry in final form
444	..With temperature reduction 32 degrees F. or less
445	..Size increase by puffing, or pore forming of solid material by heating
446	...Dough product
447	...By sudden pressure release from exteriorly applied pressurized zone
448	....From extrusion zone using mechanical pressure
449	....Of cereal
450	...Of cereal material
451	..Alimentary paste, e.g., macaroni, spaghetti, noodles, etc.
452	..Cereal filament or filament composite
453	..Building up units from initially dry material, e.g., agglomerating, etc.
454	...By compressing, e.g., tabletting, briquetting, pelleting, etc.
455	..Including treatment with aqueous material, e.g., hydration, etc.
456	...And subsequent heat treatment of dehydration
457	....To form flake product
458	....Of cereal dough or cooked cereal dough
459	....Of isolated cereal seed or bean material
460	.....Whole seed or bean material
461	......By steam
462	......Cereal
463	.....Cereal material, e.g., flour, meal, bran, etc.
464	....With size reduction, e.g., mashing, cutting, etc.
465	..Including heating or dehydration
466	...By roasting, toasting, or browning

PROCESSES
.Preparation of product which is dry in final form
..Including heating or dehydration
...By roasting, toasting, or browning
467 ....With fluid current conveying or suspensions of treated material
468 ....With compressing or use of exteriorly applied pressure
469 ....With separation of unwanted solid component
470 ...Of prior foamed or gasified material
471 ...Of liquid or liquefied material, e.g., spray drying, etc.
472 ...With separation of a constituent
473 ...With size reduction, e.g., mashing, cutting, etc.
474 .Including gas-liquid contact
475 ..Separating, including gas contact
476 ...Gas is steam
477 ..Preparing carbonated or effervescent liquid
478 .Separating a starting material into plural different constituents
479 ..Removing of solid part from solid material
480 ...From mammal or fowl material
481 ...From plant material
482 ....Outer covering, e.g., shell, husk, etc.
483 .....By abrading
484 ....Seed, pit, stem, or core
485 .....Pit
486 ..Removal of air, unwanted gas, or unwanted odoriferous material
487 ...From liquid
488 ....To deodorize
489 ..Removal of desired liquid from solid plant material
490 ..Starting material is liquid
491 ...Lacteal liquid, e.g., milk, cream, etc.
492 ...Including vaporization, e.g., distillation, concentration-evaporation, etc.
493 ....Of alcohol containing stock
494 .....Recovery of vaporized fraction, e.g., distillate
495 ...Separating solid from liquid material
496 .Treatment or preparation of farinaceous dough, batter, or pastry product, e.g., pie, etc.
497 ..Treatment of cooked product
498 ..Including incorporation of air or gas into dough material
499 ..Food product having an open-ended cavity, e.g., pretzel, etc.
500 ..Including coiling or twisting
501 ...Coiling sheet material
502 ..Including sheeting, laminating, or folding
503 ..Including dough dividing, slitting or incising
504 ..Including mixing or kneading
505 ..Heating utilizing a foraminous or coated support, or container
506 .Treatment with aqueous material, e.g., hydration, etc.
507 ..Of isolated whole seed or bean material
508 ...Cooking, blanching or gelatinizing
509 ..Cooking or blanching
510 ...By steam
511 ..By steam
512 .Molding, casting, or shaping
513 ..Of animal flesh
514 ..Forming hollow, tubular, or open-ended cavity
515 ..From liquid state, e.g., casting, freezing, etc.
516 ..Extruding through restricted orifice to give desired final shape
517 ..Forming rod, strand, sheet, or filament
518 .With cutting, or mechanically subdividing solid material, e.g., slicing, comminuting, slitting, etc.
519 .With mixing or agitating, e.g., homogenizing, etc.
520 .Heating above ambient temperature
521 ..Pasteurizing or sterilizing
522 ...Of lacteal material
523 ..Cooking, e.g., broiling, baking, etc.
524 .Cooling, freezing, or treating cooled or frozen product, e.g., thawing, etc.

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CROSS-REFERENCE ART COLLECTIONS
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800 GERIATRIC
801 PEDIATRIC
802 SIMULATED ANIMAL FLESH
803 SIMULATED FRUIT OR VEGETABLE
804 LOW CALORIE, LOW SODIUM OR HYPOALLERGIC
805 PET FOOD FOR DOG, CAT, BIRD, OR FISH
806 SALT OR MINERAL SUBSTITUTE
807 POULTRY OR RUMINANT FEED
808 STARCH BASE SNACK PRODUCT
809 INCLUDING HARVESTING OR PLANTING OR OTHER NUMEROUS MISCELLANEOUS PROCESSING STEPS
810 ENERGY RATIONS, E.G., EMERGENCY RATIONS, SURVIVAL RATIONS, ETC.
811 UTILIZING SURFACE PARTING, ANTISTICK OR RELEASE AGENT

CLASS 427 COATING PROCESSES

1	BODY MEMBER PRINTING (E.G., FINGERPRINTING, ETC.)
2	MEDICAL OR DENTAL PRODUCT PRODUCED
3	.Tablets, pills, pellets or capsules coated
4	PLANT MEMBER OR ANIMAL SPECIMEN COATING
5	RADIOACTIVE BASE OR COATING
6	.Particles or nuclear reactor fuel elements coated
7	FRAUD OR TAMPER DETECTING
8	MEASURING, TESTING OR INDICATING
9	.Thickness or uniformity of thickness determined
10	..Electrical or optical
11	FRICTIONAL APPLICATION (I.E., RUBBING SOLID COATING MATERIAL ON BASE)
12	DIRECT APPLICATION OF ELECTRICAL, MAGNETIC OR WAVE ENERGY
13	.Electrostatic charge utilized
14.1	..Nonuniform coating
25	..Solid particles transported from support to base by electrostatic force
26	..Particles aligned by electrostatic force
27	..Coating applied as solid particles or atomized liquid
28	...Coating applied to inside of hollow article
29	...Coating applied to preheated base
30	...Atomizing step includes utilizing electrostatic force
31	....Liquid atomized from external thin edge of rotating member
32	...Running or indefinite-length base
33	...Discrete articles sequentially conveyed past coating station
34	.Spraying involving plasma coating agent
35	.Electron irradiation, electric discharge, gas ionization, gamma rays or X-rays utilized
36	..Gamma rays, X-rays or atomic radiation
37	..Arcing or sparking
38	..Gas ionization or ion bombardment
39	...Corona or glow discharge
40	....Organic base
41	....Organic coating
42	..Coating material supply irradiated
43.1	..Pattern or selected areas irradiated
44	..Resin, resin precursor, rubber or hardenable oil containing coating
45.1	.Dielectric or induction heating or utilizing radio or microwave
46	..Metal base heated
47	.Magnetic field utilized
48	..Magnetic recording device formed
49	.Resistance heating
50	..Vapor deposition
51	...Semiconductor or silicon coating
52	...Wire or filament coated
53.1	.Laser or visible light
54.1	.Ultraviolet light
55	.Infrared energy or radiant heat (excluding vaporizing coating material)
56.1	..Nonuniform coating
57	.Sonic or ultrasonic
58	ELECTRICAL PRODUCT PRODUCED
59	.Welding electrode
60	..Post-treating with solid treating member
61	..Metal coating or Group IIA metalic compound containing coating
62	.Superconductor
63	..Nonuniform coating
64	.Fluorescent or phosphorescent base coating (e.g., cathode ray tube, luminescent screen, etc.)
65	..X-radiation properties
66	..Electroluminescent lamp
67	..Fluorescent lamp
68	..Multicolor or mosaic (e.g., color T.V. tube, etc.)
69	..Vapor deposition
70	...Nonmetallic coating formed by vapor deposition
71	..Particles applied
72	..Rotating the base
73	..Settling out of liquid
74	.Photoelectric
75	..Mosaic or nonuniform coating
76	..Coating is selenium, tellurium or compound thereof
77	.Electron emissive or suppressive (excluding electrode for arc)
78	..Vapor deposition or spraying
79	.Condenser or capacitor
80	..Electrolytic or barrier layer type
81	..Vacuum or pressure utilized
96	.Integrated circuit, printed circuit or circuit board
97	..Coating hole walls
98	..Immersion metal plating from solution (e.g., electroless plating, etc.)
99	..Vapor deposition
100	.Piezoelectric properties
101	.Resistor for current control (excludes heating element)
102	..Nonuniform coating
103	..Applying superposed diverse coatings or coating a coated base
104	.Motor stator or core for winding
105	.Hollow article
106	..Glass (e.g., light bulb, etc.)
107	...Vapor deposition
108	.Transparent base
109	..Vapor deposition
110	..Spraying
111	.Filament for lamp or tube
112	..Carbon filament
113	.Carbon base
114	..Brushes
115	.Fuel cell part
116	.Coil or winding
117	.Wire conductor
118	..Applying superposed coatings or coating a coated base
119	..Foam, cellular or natural rubber coating
120	..Heat utilized
121	.Cellulosic or fibrous base (e.g., wood, paper, etc.)
122	.Carbon coating
123	.Metal coating
124	..Vapor deposition or utilizing vacuum
125	..Silver, gold, platinum or palladium
126.1	.Metallic compound coating
126.2	..Glass or ceramic base or coating
126.3	..Metal oxide, peroxide, or hydroxide coating
126.4	...Metal is Al
126.5	...Metal is Au, Ag, Pt, Pd, Ru, Rh, Os, Ir
126.6	...Metal is Ni, Fe, or Co
127	MAGNETIC BASE OR COATING
128	.Magnetic coating
129	..With pretreatment of base
130	..With post-treatment of coating or coating material
131	..Applying superposed diverse coating or coating a coated base
132	..Metal coating
133	MOLD COATING
134	.Sand mold
135	.Metal mold

136 COATING PAVEMENT OR THE EARCH (E.G., ROADMAKING, ETC.)
137 .Striping, marking or increasing reflectivity
138 .Asphalt, bitumen, oil or tar containing coating
139 ..Rolling
140 RESTORING OR REPAIRING
141 .Carbon paper or inked ribbon
142 .Metal article
143 STENCIL BLANK MAKING
144 HECTROGRAPHIC OR COPYING SURFACE MAKING
145 LATENT IMAGE FORMED OR DEVELOPED
146 TRANSFER OR COPY SHEET MAKING
147 .Decal or embossing foil type (i.e., continuous film transfers)
148 ..Heat sensitive
149 ..Fluid releasable
150 .Reactive components
151 ..Heterocyclic organic compound component
152 .Coating opposite sides or forming plural or nonuniform coats
153 .Carbon paper type
154 REMOVABLE PROTECTIVE COATING APPLIED
155 .Organic base
156 .Metal base
157 FLUORESCENT OR PHOSPHORESCENT COATING
158 .Optical brightening
159 INCANDESCENT MANTLE PRODUCED
160 COATING HAS X-RAY, ULTRAVIOLET OR INFRARED PROPERTIES
161 TRANSPARENCY OR TRANSLUCENCY INCREASED (E.G., MAKING WINDOW ENVELOPES, ETC.)
162 OPTICAL ELEMENT PRODUCED
163 .Polarizer, windshield, optical fiber, projection screen or spherical reflector
164 .Transparent base
165 ..Glass
166 ...Vapor depositing
167 ....Silicon compound coating (e.g., quartz, etc.)
168 ...Spraying
169 ...Immersion
170 DELUSTERING FABRIC OR YARN
171 WITH STRETCHING OR TENSIONING
172 .Running lengths
173 ..Lateral stretching
174 ..Particles or fibers applied
175 ..Cord, thread, yarn or wire
176 ..Textile fabric
177 WITH WINDING, BALLING, ROLLING, OR COILING
178 .Metal or glass base (e.g., wire, etc.)
179 .Paper or felt base
180 SOLID PARTICLES OR FIBERS APPLIED
181 .Interior or hollow article coating
182 ..Fluidized bed utilized
183 ..Rotating the base
184 .Nonuniform speed or nonrectilinear base motion
185 .Fluidized bed utilized
186 .Roofing produced
187 ..With cutting
188 ..Localized different areas produced
189 .Uniting particles to form continuous coating with nondiscernible paticles
190 ..Metallic compound particles
191 ..Metal particles
192 ...Aluminum, copper or zinc particles
193 ..Vitrifiable particles
194 ..Roller utilized
195 ..Synthetic resin particles
196 .Plural direction application of coating materials or simultaneously applying particles and binder from different sources
197 .Localized different areas produced (e.g., printing, etc.)
198 ..Deforming the base or coating or removing part of the coating
199 ..Silicon compound, metal or metallic compound containing particles applied
200 ..Flock or fibers applied
201 .Plural particulate materials applied
202 .Applying superposed diverse coatings or coating a coated base
203 ..Coating over the applied coating of particles
204 ..Silicon compound containing particles (e.g., sand, etc.)
205 ..Metal or metallic compound containing particles
206 ..Flock or fibers applied
207.1 COATING REMAINS ADHESIVE OR IS INTENDED TO BE MADE ADHESIVE
208 .Application to opposite sides of base
208.2 .Heat sensitive adhesive
208.4 .Pressure sensitive adhesive
208.6 ..Nonuniform coating (e.g., perforated, etc.)
208.8 ..Applying superposed diverse coatings or coating a coated base
209 APPLICATION TO OPPOSITE SIDES OF SHEET, WEB OR STRIP (EXCLUDING PROCESSES WHERE ALL COATING IS BY IMMERSION)
210 .Nonuniform coating
211 .Roller applicator utilized
212 PARTICLES, FLAKES OR GRANULES COATED OR ENCAPSULATED
213 .Fluidized bed utilized
213.3 .Solid encapsulation process utilizing an emulsion or dispersion to form a solid-walled microcapsule
213.31 ..With post-treatment of encapsulant or encapsulating material, e.g., further coating, hardening, etc.
213.32 ...Hardening
213.33 ....Using crosslinking agent
213.34 ..Solid-walled microcapsule formed by in situ polymerization
213.35 ..Solid-walled microcapsule formed from gelatin or derivative thereof
213.36 ..Solid-walled microcapsule formed from preformed synthetic polymer
214 .Applying superposed diverse coatings or coating a coated base
215 .Inorganic base
216 ..Metal base
217 ..Metal coating
218 ..Pigment containing coating
219 ...Silicon compound containing coating
220 ..Organic coating
221 ...Resin, rubber or hardenable oil containing coating
222 .Resin base
223 FLAME CONTACT
224 .After coating
225 .Metal coating
226 HEAT DECOMPOSITION OF APPLIED COATING OR BASE MATERIAL
227 .Base material decomposed or carbonized
228 .Coating decomposed to form carbide or coating carbonized
229 .Coating decomposed to form metal
230 INTERIOR OF HOLLOW ARTICLE COATING
231 .Rotating the article
232 ..Removing excess coating material
233 ..Spraying
234 ..Metal base
235 .Removing excess coating material
236 .Spraying
237 .Coating by vapor, gas, mist or smoke
238 .Vacuum or pressure utilized

INTERIOR OF HOLLOW ARTICLE COATING
239 .Metal base
240 CENTRIFUGAL FORCE UTILIZED
241 .Metal coating
242 RUMBLING OR TUMBLING
243 FORAMINOUS PRODUCT PRODUCED
244 .Filter, sponge or foam
245 .Microporous coating (e.g., vapor permeable, etc.)
246 ..Coagulating or jelling the coating
247 .Metal base
248.1 COATING BY VAPOR, GAS, OR SMOKE
249 .Carbon or carbide coating
250 .Metal coating
251 ..Moving the base
252 ..By decomposing metallic compound (e.g., pack process, etc.)
253 ...Halogen containing compound
254 .Wood base
255 .Base includes inorganic silicon or metal containing compound (e.g., glass, ceramic, brick, etc.)
255.1 .Mixture of vapors or gases utilized
255.2 ..The resultant coating is a mixture or a compound formed from the mixture utilized
255.3 ...The mixture utilized contains oxygen
255.4 .Base supplied constituent
255.5 .Moving the base
255.6 .Organic coating applied by vapor, gas, or smoke
255.7 .Plural coatings applied by vapor, gas, or smoke
256 NONUNIFORM COATING
257 .Wrinkled or crackled coating
258 .Applying superposed diverse coatings or coating a coated base
259 ..Including a masking coating
260 ..Hand-held brush or absorbent applicator utilized
261 ..Final coating nonuniform
262 ...Variegated surface produced (e.g., mottled, stippled, wood grained, etc.)
263 ....Marbleized
264 ...Deforming the base or coating or removing a portion of the coating
265 ...Plural nonuniform coatings
266 ....Glass or ceramic base
267 ..Variegated surface produced (e.g., mottled, stippled, wood grained, etc.)
268 ...Marbleized
269 ..Glass or ceramic base
270 ..Deforming the base or coating or removing a portion of the coating
271 .Deforming the base or coating or removing a portion of the coating
272 ..Mask or stencil utilized
273 ..Fluid treating the coating (e.g., vapor treating, etc.)
274 ..Variegated surface produced (e.g., stippled, marbleized, mottled, wood grained, etc.)
275 ..Deforming the base
276 ...Simultaneously deforming the coating
277 ..Solid treating member contacts coating
278 ...Roller treating member
279 .Vitreous coating
280 .Variegated surface produced (e.g., mottled, wood grained, etc.)
281 ..Marbleized
282 .Mask or stencil utilized
283 .Crystalization or precipitation coating
284 .Edge or border coating
285 ..Paper or textile base
286 .Striping (i.e., forming stripes)
287 .Metal, glass or ceramic base)
288 .Paper or textile base
289 WITH CUTTING, HOLDING, SEVERING OR ABRADING THE BASE
290 .Prior to coating
291 ..Wood base (e.g., injecting, etc.)
292 ..Inorganic base
293 .Rectilinear cutting to length
294 VACUUM UTILIZED PRIOR TO OR DURING COATING
295 .Metal base
296 .Organic base
297 ..Wood base
298 ...Creosote, wax, oil, asphalt or bitumen coating
299 WITH PRETREATMENT OF THE BASE
300 .Shielding or spacing
301 .Preapplied reaction promoter or hardener (e.g., catalyst, etc.)
302 ..Resin, rubber or hardenable oil containing coating
303 ...Cellulosic base
304 ..Metal coating (e.g., electroless deposition, etc.)
305 ...Nickel, copper, cobalt or chromium coating
306 ....Organic base
307 .Etching, swelling or dissolving out part of the base
308 ..Cellulosic base
309 ..Inorganic base
310 .Fluxing
311 ..Supernatant flux (floating)
312 ...Lead or tin coating
313 ..Lead or tin coating
314 .Heating or drying pretreatment
315 ..Steam utilized
316 ..Organic base
317 ...Wood base
318 ..Metal base
319 ...Metal coating
320 ....Aluminum coating
321 ....Zinc or spelter coating (e.g., galvanizing, etc.)
322 .Organic base
323 ..Natural protein containing base (e.g., silk, wool, leather, etc.)
324 ..Cellulosic base
325 ...Wood base
326 ...Paper base
327 .Metal base
328 ..Metal coating
329 ...Molten metal bath utilized
330 ..Vitreous coating
331 WITH POST-TREATMENT OF COATING OR COATING MATERIAL
332 .Deodorizing
333 .Plural film forming coatings wherein one coating contains a chemical treating agent for the other
334 .Oil or wax treatment of coating
335 .Solvent vapor treatment of coating
336 .Swelling agent or solvent applied to treat coating
337 .Chemical agent applied to treat coating
338 ..Proteinaceous coating
339 ..Cellulosic coating
340 ..Resin, resin precursor, rubber or hardenable oil containing coating
341 ...Inorganic treating agent
342 ...Textile or cellulosic base
343 ..Inorganic coating
344 ...Silicon compound containing coating
345 .Coating material recirculation or regeneration
346 .Movement of work treats coating (e.g., vibrating, tilting, etc.)
347 ..Metal coating

	WITH POST-TREATMENT OF COATING OR COATING MATERIAL
348	.Gas jet or blast mechanically treats coating
349	..Metal coating
350	.Vacuum or reduced pressure utilized
351	..Wood base
352	.Liquid extraction of coating constituent or cleaning coating
353	..With water
354	...Drying subsequent to washing
355	.Solid treating member or material contacts coating
356	..Die, blade or sharp-edged tool
357	...Metal coating
358	...Organic coating
359	..Roller, drum or cylinder
360	...Metal coating
361	...Paper base (e.g., calendering, etc.)
362	....Cast coating
363	....Wax or oil containing coating
364	....Casein or starch containing coating
365	...Treating between rollers (e.g., calendering, etc.)
366	....With heating (e.g., heated roller, etc.)
367	..Metal coating
368	..Brushing
369	..Pressure treatment of coating (e.g., squeezing, etc.)
370	...With heating (e.g., hot ironing, etc.)
371	..Organic base
372.2	.Heating or drying (e.g., polymerizing, vulcanizing, curing, etc.)
373	..Cells, foam or bubbles formed
374.1	..And cooling
374.2	...Heating after cooling
374.3	....Without intervening coating step
374.4	...Fused or molten coating cooled
374.5	....Liquid or solid cooling medium
374.6	....Vacuum, vapor, or gas other than air utilized
374.7	....Vitreous or glazed coating
375	..Fusion or softening of coating
376.1	...Inorganic coating
376.2	....Metal oxide- or silicon-containing coating (e.g., glazed, vitreous enamel, etc.)
376.3	.....Metal-containing coating (e.g., cermet, etc.)
376.4	.....Metal base
376.5	......Ferrous base
376.6	....Metal-containing coating
376.7	.....Coating consists of metal
376.8	......Metal base
377	..Modified condition of atmosphere (e.g., steam, air movement, etc.)
378	...Movement of atmosphere
379	..Plural heating or drying steps
380	...Metal or metallic compound containing coating
381	...Textile or cellulosic base
382	....Paper or natural cellulose base
383.1	..Metal coating
383.3	...Inorganic base
383.5	....Fused oxide-containing base (e.g., ceramic, glass, etc.)
383.7	....Metal base
383.9	.....Coating material diffuses into base or forms alloy with base
384	..Organic coating
385.5	...Resin, resin precursor, rubber, or hardenable oil-containing coating
386	....Epoxy or polyepoxide containing coating
387	....Silicon compound containing coating
388.1	....Metal base
388.2	.....Cross-linked or infusible coating
388.3	......Aldehyde-containing precursor
388.4	.....Water-containing coating (i.e., aqueous dispersion, emulsion or solution)
388.5	.....Nonaqueous dispersion
389	....Proteinaceous base (e.g., wool, leather, etc.)
389.7	....Glass base
389.8	.....Fiberglass base
389.9	....Textile or cellulosic base
391	.....Paper base
392	.....Natural cellulose base
393	......Wood base
393.1	.....Antistatic properties increased
393.2	.....Wrinkle resistance of crease holding properties increased
393.3	.....Flame resistance increased
393.4	.....Antisoiling or water repellency increased
393.5	....Resin, rubber, or elastomer base
393.6	....Asbestos, ceramic, concrete, or masonry base
394	...Textile or cellulosic base
395	....Paper base
396	....Natural cellulose base
397	.....Wood base
397.7	..Inorganic silicon-containing coating
397.8	...Alkali silicate
398.1	.Cooling
398.2	..Utilizing solid member contacting base or coating (e.g., cooling roller, etc.)
398.3	..Liquid utilized (e.g., quenching, spraying, etc.)
398.4	..Vacuum, vapor, or gas other than air utilized
398.5	..Movement of atmosphere
399	BASE SUPPLIED CONSTITUENT
400	.Resin or rubber base
401	COMBINED
402	APPLYING SUPERPOSED DIVERSE COATING OR COATING A COATED BASE
403	.Settable inorganic coating (e.g., cement, etc.)
404	.Metal coating
405	..Metal base
406	...Zinc coating
407.1	.Synthetic resin coating
407.2	..Glass base
407.3	...Fiberglass base
408	..Wood base
409	..Metal base
410	...Epoxy or polyepoxide containing coating
411	..Paper base
412	..Textile or leather base
412.1	..Nonfibrous organic base
412.2	...Cellulose derivative base
412.3	...Polyolefin base
412.4	...Halogen-containing resin base
412.5	...Polyester or alkyd resin base
413	.Natural rubber or derivative containing coating
414	.Protein or derivative containing coating (e.g., casein, glue, gelatin, etc.)
415	.Cellulosic coating
416	.Wax containing coating
417	.Natural resin, oil or fat containing coating
418	..Metallic compound containing coating
419.1	.Metallic compound-containing coating
419.2	..Oxide-containing coating
419.3	...Superposed diverse oxide coatings
419.4	....Vitreous coating
419.5	...Organic coating
419.6	...Vitreous coating

	APPLYING SUPERPOSED DIVERSE COATING OR COATING A COATED BASE
	.Metallic compound-containing coating
419.7	..Boride, carbide, nitride, phosphide, silicide, or sulfide-containing coating
419.8	..Organometallic or metal salt of organic compound-containing coating
420	FALLING CURTAIN OF COATING MATERIAL UTILIZED (I.E., CURTAIN COATING)
421	SPRAYING
422	.Heated coating material
423	..Flame spraying
424	.Moving the base
425	..Rotating or inverting
426	.Ingredients supplied separately
427	.Inorganic coating material
428	ROLLER APPLICATOR UTILIZED (E.G., PADDING, ETC.)
429	BRUSH OR ABSORBENT APPLICATOR UTILIZED
430.1	IMMERSION OR PARTIAL IMMERSION
431	.Molten metal or fused salt bath
432	..Inert gas or nonoxidizing atmosphere utilized
433	..Lead, zinc or tin coating (e.g., galvanizing, etc.)
434.2	.Running lengths
434.3	..Coating applied at surface of bath only
434.4	..Base treated by solid member in bath (e.g., scraped, squeezed, etc.)
434.5	..Coating material moved (e.g., agitated, circulated, etc.)
434.6	..Cord, thread, yarn, wire, or rod
434.7	...Extending through bath-containing wall
435	.Metal base
436	..Metal coating
437	...Chemical compound reducing agent utilized (i.e., electroless deposition)
438	....Nickel coating
439	.Cellulosic base
440	..Wood base
441	...Creosote, wax, oil, asphalt or bitumen containing coating
442	..Wax, oil, asphalt or bitumen containing coating
443	.Wax, oil, asphalt or bitumen containing coating
443.1	.Chemical compound reducing agent utilized (i.e., electroless deposition)
443.2	.Inorganic base
444	PRETREATMENT PER SE, OR POST-TREATMENT PER SE (WITHOUT CLAIMED COATING)
445	MISCELLANEOUS

CLASS 428 STOCK MATERIAL OR MISCELLANEOUS ARTICLES

1 LIQUID CRYSTAL
3 RELIGIOUS ARTIFACT (E.G., CRUCIFORM, ETC.)
4 BOW, POMPOM OR ROSETTE
5 .Looped type
6 PLUME
7 SPECIAL OCCASION ORNAMENT
8 .Knockdown
9 .Collapsible
10 .Wreath type
11 .Ball, bell, or star-shaped
12 COLLAPSIBLE ARTICLE (E.G., JOINTED, ELASTIC, ETC.)
13 DISPLAY IN FRAME OR TRANSPARENT CASING; OR DIORAMA INCLUDING OR IMITATIVE OF A REAL OBJECT
14 .Peripheral enclosure or frame
15 THREE DIMENSION IMITATION OR "TREATED" NATURAL PRODUCT
16 .Fauna
17 .Flora
18 ..Tree
19 ...With article holder or ornament
20 ...Knockdown
21 ..Artificial fruit or garnishing leaf display strip
22 ..Including naturally occurring article
23 ..Cluster or with holder
24 ..Flower or flower petal
25 ...Of filamentary or filamentary-openwork type
26 ...Of cloth, paper, or chemically plastic matter
27 ..Framework with or therefor
28 FINIAL OR PENDANT TYPE ARTICLE
29 ARTICLE HAVING LATENT IMAGE OR TRANSFORMATION
30 .Striated for iridescence
31 VEHICLE BODY ORNAMENT
544 ALL METAL OR WITH ADJACENT METALS
545 .Component of composite having metal continuous phase interengaged with nonmetal continuous phase
546 .Having metal particles
547 ..Having composition or density gradient or differential porosity
548 ..Composite, i.e., plural, adjacent, spatially distinct metal components, e.g., layers, etc.
549 ...Fiber, asbestos, or cellulose in or next to particulate component
550 ...Porous component
551 ...Nonmetal component
552 ....Entirely inorganic
553 ...Nonparticulate metal component
554 ....Plural nonparticulate metal components
555 .....Next to each other
556 ......Nonmetal in particulate component
557 ....Plural particulate metal components
558 ....Nonparticulate component encloses particles
559 ....Particles discontinuous
560 .....Separated by nonmetal matrix or binder, e.g., welding electrode, etc.
561 ......Nonparticulate component has Ni-, Cu-, or Zn-base
562 ......Nonparticulate component has Fe-base
563 ....Next to Fe-containing particles
564 ....Nonmetal particles in particulate component
565 ...Nonmetal particles in a component
566 ..Interconnected void structure, e.g., permeable, etc.
567 ..Continuous interengaged phases of plural metals, or oriented fiber containing
568 ...Nonmetal containing
569 ...Mo or W containing
570 .Composite powder, e.g., coated, etc.
571 .Having marginal feature for indexing or weakened portion for severing
572 ..For severing perpendicular to longitudinal dimension
573 .Width or thickness variation or marginal cuts repeating longitudinally
574 ..Variation in both width and thickness
575 ..Marginal slots, i.e., deeper than wide
576 .Shaped configuration for melting, e.g., package, etc.
577 .Intermediate article, e.g., blank, etc.
578 ..Panel having nonrectangular perimeter
579 ...Disk
580 ...Symmetrical
581 ....Only one plane of symmetry
582 ..Having outward flange, gripping means or interlocking feature
583 ..Having discrete fastener, marginal fastening, taper, or end structure
584 ...Same structure at both ends of plural taper
585 ...Single taper, e.g., ingot, etc.
586 .Workpiece with longitudinal passageway or stopweld material, e.g., for tubular stock, etc.
587 .Workpiece mimicking finished stock having nonrectangular or noncircular cross section
588 .Workpiece of parallel, nonfastened components, e.g., fagot, pile, etc.
589 ..Arranged to avoid lateral displacement
590 ..Composite
591 .With provision for limited relative movement between components
592 .Helical or with helical component
593 .Honeycomb, or with grain orientation or elongated elements in defined angular relationship in respective components, e.g., parallel, intersecting, etc.
594 .Plural layers discontinuously bonded, e.g., spot-weld, mechanical fastener, etc.
595 .Nonplanar, uniform-thickness material having symmetrical channel shape or reverse fold, e.g., making acute angle, etc.
596 .Having aperture or cut
597 ..Struck-out portion type
598 .Having member which crosses the plane of another member, e.g., T or X cross section, etc.
599 .Defined configuration of both thickness and nonthickness surface or angle therebetween, e.g., rounded corners, etc.
600 .Having variation in thickness
601 ..Discontinuous surface component, e.g., printed circuit
602 ..Longitudinally smooth and symmetrical
603 .Nonplanar uniform thickness or nonlinear uniform diameter, e.g., L-shape
604 ..Intersecting corrugations or dimples not in a single line, e.g., waffle form, etc.
605 .Mass of only fibers
606 .Foil or filament smaller than 6 mils
607 ..Composite
608 .Embodying fibers, interengaged or between layers, e.g., paper, etc.

ALL METAL OR WITH ADJACENT METALS
609 .Macroscopically anomalous interface between layers
610 .Having composition, density, or hardness gradient
611 .Having magnetic properties, or preformed fiber orientation coordinate with shape
612 .Microscopic interfacial wave or roughness
613 .Porous, e.g., foamed, spongy, cracked, etc.
614 .Laterally noncoextensive components, e.g., embedded, etc.
615 .Composite, i.e., plural, adjacent, spatially distinct metal components, e.g., layers, joint, etc.
616 ..Deflectable by temperture change, e.g., thermostat element
617 ...More than two components
618 ...One component Cu-based
619 ...Both components Fe-based with more than 10% Ni
620 ..Semiconductor component
621 ..With additional, spatially distinct nonmetal component
622 ...More than one such component
623 ....Adjacent to each other
624 ...Organic component
625 ....Elastomer
626 ....Synthetic resin
627 ...Boride, carbide or nitride component
628 ...Component contains compound of adjacent metal
629 ....Oxide
630 ...Noncrystalline silica or noncrystalline plural-oxide component, e.g., glass, etc.
631 ....Film, e.g., glaze, etc.
632 ...Oxide-containing component
633 ....Plural oxides
634 ...Free carbon containing component
635 ..Four or more distinct components with alternate recurrence of each type component
636 ..Adjacent, identical composition, components
637 ...Group VIII or IB metal-base
638 ....Fe, containing 0.01-1.7% carbon, i.e., steel
639 ..O, S, or organic compound in metal component
640 ...Oxide of transition metal or Al
641 ..Ge- or Si-base component
642 ..Ga-, In-, Tl- or Group VA metal-base component
643 ..Pb- and Sn-base components: alternative to or next to each other*
644 ...And next to Cu- or Fe-base component
645 ..Pb-base component
646 ..Sn-base component
647 ...Next to Group IB metal-base component
648 ...Next to Group VIII metal-base component
649 ..Group IIA metal-base component
650 ..Al-base component
651 ...Next to refractory (Group IVB, VB, or VIB) metal-base component
652 ...Next to Group VIII or IB metal-base component
653 ....Fe
654 ...Next to Al-base component
655 ..Transition metal-base component
656 ...Alternative base metals from diverse categories*
657 ...Group IIB metal-base component
658 ....Zn-base component
659 .....Next to Fe-base component, e.g., galvanized
660 ...Refractory (Group IVB, VB, or VIB) metal-base component
661 ....Diverse refractory group metal-base components: alternative to or next to each other*
662 ....Group VB metal-base component
663 ....Group VIB metal-base component
664 .....Alternative to or next to each other*
665 .....W-base component
666 .....Cr-base component
667 ......Next to Co-, Fe-, or Ni-base component
668 ...Group VIII or IB metal-base component
669 ....Group IB metal-base component alternative to platinum group metal-base component, e.g., precious metal, etc.*
670 ....Platinum group metal-base component
671 ....Cu-base component alternative to Ag-, Au-, or Ni-base component*
672 ....Au-base component
673 ....Ag-base component
674 ....Cu-base component
675 .....Next to Co-, Cu-, or Ni-base component
676 .....Next to Fe-base component
677 ......Fe-base has 0.01-1.7% carbon, i.e., steel
678 ....Co-, Fe-, or Ni-base components, alternative to each other*
679 ....Co- or Ni-base component next to Fe-base component
680 ....Ni-base component
681 ....Fe-base component
682 .....Next to Fe-base component
683 ......Both containing 0.01-1.7% carbon, i.e., steel
684 .....Containing 0.01-1.7% carbon, i.e., steel
685 ......Containing more than 10% nonferrous elements, e.g., high alloy, stainless
686 ..Adjacent functionally defined components
687 .Surface feature, e.g., rough, mirror
2 COMPACTED TRASH OR REFUSE BUNDLE
32 ARTICLE HAVING ORNAMENTAL WOUND OR WOVEN STRANDS
33 PLURAL PARTS WITH EDGES OR TEMPORARY JOINING MEANS EACH COMPLEMENTARY TO OTHER
34 LIGHT TRANSMISSIVE SHEETS, WITH GAS SPACE THEREBETWEEN AND EDGE SEALED (E.G., DOUBLE GLAZED STORM WINDOW, ETC.)
34.1 HOLLOW OR CONTAINER TYPE ARTICLE (E.G., TUBE, VASE, ETC.)
34.2 .Paper containing (e.g., paperboard, cardboard, fiberboard, etc.)
34.3 ..Bag or tubular film (e.g., pouch, flexible food casing, envelope, etc.)
34.4 .Glass, ceramic, or sintered, fused, fired, or calcined metal oxide or metal carbide containing (e.g., porcelain, brick, cement, etc.)
34.5 ..Contains fabric, fiber, particle, or filament made of glass, ceramic, or sintered, fused, fired, or calcined metal oxide or metal carbide or other inorganic compound (e.g., fiber glass, mineral fiber, sand, etc.)
34.6 ..Multilayer (continous layer)

HOLLOW OR CONTAINER TYPE ARTICLE (E.G., TUBE, VASE, ETC.)
.Glass, ceramic, or sintered, fused, fired, or calcined metal oxide or metal carbide containing (e.g., porcelain, brick, cement, etc.)
..Multilayer (continous layer)
34.7 ...Polymer or resin containing (i.e., natural or synthetic)
34.8 .Flexible food casing (e.g., sausage type, etc.)
34.9 .Shrinkable or shrunk (e.g., due to heat, solvent, volatile agent, restraint removal, etc.)
35.1 ..Single layer (continuous layer)
35.2 .Nonself-supporting tubular film or bag (e.g., pouch, envelope, packet, etc.)
35.3 ..Elemental metal containing
35.4 ..Contains vapor or gas barrier, polymer derived from vinyl chloride or vinylidene chloride, or polymer containing a vinyl alcohol unit
35.5 ..Single layer (continuous layer)
35.6 .Cellular material derived from plant or animal source (e.g., wood, cotton, wool, leather, etc.)
35.7 .Polymer or resin containing (i.e., natural or synthetic)
35.8 ..Elemental metal containing (e.g., substrate, foil, film, coating, etc.)
35.9 ...Three or more layers (continuous layer)
36.1 ..Textile, fabric, cloth, or pile containing (e.g., web, net, woven, knitted, mesh, nonwoven, matted, etc.)
36.2 ...Textile, fabric, cloth, or pile is sandwiched between two distinct layers of material unlike the textile, fabric, cloth, or pile player
36.3 ..Fiber or fibers wound around each other or into a self-sustaining shape (e.g., yarn, braid, fibers shaped around a core, etc.)
36.4 ..Randomly noninterengaged or randomly contacting fibers, filaments, particles, or flakes
36.5 ..Foam or porous material containing
36.6 ..Contains vapor or gas barrier, polymer derived from vinyl chloride or vinylidene chloride, or polymer containing a vinyl alcohol unit
36.7 ...Vapor or gas barrier, polymer derived from vinyl chloride or vinylidene chloride, or polymer containing a vinyl alcohol unit is sandwiched between layers (continuous layer)
36.8 ..Natural or synthetic rubber or rubber-like compound containing
36.9 ..Open-ended, self-supporting conduit, cylinder, or tube-type article
36.91 ...Multilayer (continuous layer)
36.92 ..Single layer (continuous layer)
37 SPIRALLY FLAT-WOUND STRAND OR STRIP (E.G., BRAIDED RUG, ETC.)
38 MASS TRANSMISSIVE OF LIGHT THROUGH ALL LAYERS AND HAVING OPAQUE BORDER (E.G., STAINED GLASS, WIRED GLASS, ETC.)
39 COLLAGE REPRESENTATIVE OF REAL OBJECT
40 LAYER OR COMPONENT REMOVABLE TO EXPOSE ADHESIVE
41 .Sectional layer removable
42 ..Adhesive is on removable layer
43 SHEET, WEB, OR LAYER WEAKENED TO PERMIT SEPARATION THROUGH THICKNESS
44 TWO DIMENSIONALLY SECTIONAL LAYER
45 .With frame, casing, or perimeter structure
46 .Transparent or translucent layer or section
47 .Next to unitary web or sheet of equal or greater extent
48 ..Continuous two dimensionally sectional layer
49 ...Glass, ceramic, or metal sections (e.g., floor or wall tile, etc.)
50 ...Cellulosic sections (e.g., parquet floor, etc.)
51 ..Nonrectangular
52 .Sections connected flexibly with external fastener
53 THREE OR MORE COPLANAR INTERFITTED SECTIONS WITH SECURING MEANS
54 LONGITUDINALLY SECTIONAL LAYER OF THREE OR MORE SECTIONS
55 .Next to unitary sheet of equal or greater extent
56 ..Continuous sectional layer
57 SHEETS OR WEBS EDGE SPLICED OR JOINED
58 .Sheets or webs coplanar
59 ..Double faced corrugated sheets or webs connected
60 ..Beveled, stepped, or skived in thickness
61 ..With noncoplanar reinforcement
62 ...Pile or nap surface sheets connected
63 PATCHED HOLE OR DEPRESSION
64 CIRCULAR SHEET
65 .With axial aperture
66 .Edge structure
67 NONPARTICULATE ELEMENT EMBEDDED OR INLAID IN SUBSTRATE AND VISIBLE
68 SHEET INCLUDING COVER OR CASING
69 .Filled with gas other than air; or under vacuum
70 .Encased layer derived from inorganic settable ingredient
71 .Foamed or expanded material encased
72 .Including elements cooperating to form cells
73 ..Honeycomb type cells extend perpendicularly to nonthickness layer
74 .Noninterengaged fibered material encased (e.g., mat, batt, etc.)
75 ..Metal cover or casing
76 .Complete cover or casing
77 SHEET FACING AND LONGITUDINALLY NONCOEXTENSIVE WITH WEB OR OTHER SHEET
78 .Sheet smaller in both length and width
79 ..Smaller sheet has decorative outline
80 NONRECTANGULAR SHEET
81 PERIMETER OR CORNER STRUCTURE OF SHEET (EXCLUDING MERE RECTANGULAR)
82 .Pile or nap type surface
83 .Channel or U-shaped perimeter
84 .Paper sheet
85 PILE OR NAP TYPE SURFACE OR COMPONENT
86 .Interlaminar
87 .With particles
88 .Edge feature or configured or discontinuous surface
89 ..Differential pile length or surface
90 .Flock surface
91 .Nap type surface
92 .Particular shape or structure of pile
93 ..U-, V-, or W-shaped or continuous strand, filamentary material
94 ...Continuous strand with adhesive bond to backing
95 .Particular backing structure or composition
96 .With coating, impregnation, or bond
97 .Composition of pile or adhesive

98 STRUCTURALLY DEFINED WEB OR SHEET (E.G., OVERALL DIMENSION, ETC.)
99 .Including fastener for attaching to external surface
100 ..Hook or barb
101 .Superposed movable attached layers or components
102 .Including stitching and discrete fastener(s), coating or bond
103 ..Discontinuous or differential coating, impregnation, or bond
104 ...Coating, impregnation, or bond in stitching zone only
105 .Including grain, strips, or filamentary elements in respective layers or components in angular relation
106 ..Wood grain
107 ..Strand or strand-portions
108 ...Nonlinear strands or strand-portions
109 ...With additional layer(s)
110 ....On each side of strands or strand-portions
111 .....Including mechanically interengaged strands, strand-portions or strand-like strips
112 ...Oblique to direction of web
113 ..Fibers
114 .Including grain, strips, or filamentary elements in different layers or components parallel
115 .Including fringe
116 .Honeycomb-like
117 ..Filled honeycomb cells (e.g., solid substance in cavities, etc.)
118 ..Hexagonally shaped cavities
119 .Including sheet or component perpendicular to plane of web or sheet
120 ..Inward from edge of web or sheet
121 .Fold at edge
122 ..Channel-shaped edge component (e.g., binding, etc.)
123 ..With strand(s) or strand-portion(s) between layers (e.g., upholstery trim, etc.)
124 ..Acute or reverse fold of exterior component
125 ...Embedded in body of web
126 ...At opposed marginal edges
127 ....Annular cover
128 .....One piece
129 ......Abutted or lapped seam
130 ..Particular fold structure (e.g., beveled, etc.)
131 .Including aperture
132 ..Struck out portion type
133 ...Embedded or interlocked
134 ..Noncircular aperture (e.g., slit, diamond, rectangular, etc.)
135 ...Diamond or hexagonal
136 ...Slit or elongated
137 ..Composite web or sheet
138 ...Including nonapertured component
139 ....Keyed
140 .....From both sides
141 .Continuous and nonuniform or irregular surface on layer or component (e.g., roofing, etc.)
142 ..With transparent or protective coating
143 ..Particulate matter
144 ...Coated
145 ....Silicon containing coating
146 ...Carbohydrate
147 ...Polymer or resin (e.g., natural or synthetic rubber, etc.)
148 ...Metal or metal compound
149 ...Silicon containing
150 ....Sand, clay, or crushed rock or slate
151 ..Artificial wood or leather grain surface
152 ..Wrinkled, creased, crinkled or creped
153 ...Paper
154 ....Plural paper components
155 ..Crackled, crazed or slit
156 .Including variation in thickness
157 ..Differential nonuniformity at margin
158 ..Foamed or cellular component
159 ...Component comprises a polymer (e.g., rubber, etc.)
160 ....Polyurethane
161 ..With component conforming to contour of nonplanar surface
162 ...And conforming component on an opposite nonplanar surface
163 ...Parallel ribs and/or grooves
164 ...Containing metal or metal compound
165 ...Including cellulosic or natural rubber component
166 ..Interlaminar spaces
167 ..Parallel ribs and/or grooves
168 ...With particulate matter
169 ...Oblique to longitudinal axis of web or sheet
170 ..And varying density
171 ...Fiber containing component
172 ..Composite web or sheet
173 ...With partial filling of valleys on outer surface
174 .Nonplanar uniform thickness material
175 ..Embodying mechanically interengaged strand(s), strand-portion(s) or strand-like strip(s), (e.g., weave, knit, etc.)
176 ...With folds in parallel planes
177 ..Differential nonplanarity at margin
178 ..Forming, or cooperating to form cells
179 ..Aligned or parallel nonplanarities
180 ...Waffle-form
181 ...Pleats or otherwise parallel adjacent folds
182 ...Parallel corrugations
183 ....With locally deformed crests or intersecting series of corrugations
184 ....Plural corrugated components
185 .....With corrugations of respective components intersecting in plane projection
186 .....With planar component
187 ..Ornamental design or indicia
188 .Longitudinal or transverse tubular cavity or cell
189 .Laterally noncoextensive components
190 ..Fabric, cloth or textile component
191 ..Cellulosic
192 .Edge feature
193 ..Including layer embodying mechanically interengaged strands, strand-portions or strand-like strips (e.g., weave, knit, etc.)
194 ..Comprising discontinuous or differential impregnation or bond
195 .Discontinuous or differential coating, impregnation or bond, e.g., artwork, printing, retouched photograph, etc.
196 ..Including layer of mechanically interengaged strands, strand-portions or strand-like strips
197 ...Knitted, with particular or differential bond sites or intersections
198 ..Spot bonds connect components
199 ..Including developable image or soluble portion in coating or impregnation (e.g., safety paper, etc.)

	STRUCTURALLY DEFINED WEB OR SHEET (E.G., OVERALL DIMENSION, ETC.)
	.Discontinuous or differential coating, impregnation or bond, e.g., artwork, printing, retouched photograph, etc.
200	..With heat sealable or heat releasable adhesive layer
201	..Intermediate layer is discontinuous or differential
202	...With outer strippable or release layer
203	...Translucent outer layer
204	....Intermediate layer contains particulate material (e.g., pigment, etc.)
205	....Translucent layer comprises natural oil, wax, resin, gum, glue, gelatin
206	..Including particulate material
207	...Including coloring matter
208	...Free metal or mineral containing
209	..Including metal layer
210	..Including ceramic, glass, porcelain or quartz layer
211	..Including paper layer
212	.Including components having same physical characteristic in differing degree
213	..Thickness (relative or absolute)
214	...Of adhesive layers
215	...Absolute thicknesses specified
216	....No layer or component greater than 5 mils thick
217	..Hardness
218	..Density or compression of components
219	.Weight per unit area specified
220	.Physical dimension specified
221	WEB OR SHEET CONTAINING STRUCTURALLY DEFINED ELEMENT OR COMPONENT
222	.Embodying intertwined or helical component(s)
223	.Including interlaminar mechanical fastener
224	.Textile, cloth or fabric (woven, knitted, etc., or nonwoven, but not paper)
225	..Embodying mechanically interengaged strands, strand-portions or strand-like strips (e.g., weave, knit, etc.)
226	...Including strand-like strips
227	...Intertangled strands or strand-portions
228	....Glass strands or strand-portions
229	...Including structurally modified or defined strand
230	...Elastic
231	....Including elastic strands
232	...With parallel strips or strands not interengaged with other strands
233	...With paper or other fiber-containing layer or component
234	....Needled
235	.....And coated, impregnated or adhered
236	....Coated, impregnated or adhered
237	.....Including particulate material
238	.....Strand-type component within layer or between layers
239	......With or between fiber-containing layer(s)
240	...With particulate material
241	....Silicon containing particles (e.g., glass, talc, quartz, ceramic, etc.)
242	....Metal or metal compound particles
243	....Cellulosic particles (e.g., cork, etc.)
244	....Free carbon particles (e.g., graphite, etc.)
245	...With coating, impregnation or bond
246	....Three or more layers
247	.....Including netted or open mesh strand, filament or strip
248	.....Cellulosic layer
249	......Plural such layers
250	.....Natural rubber layer
251	.....Interengaged strand component includes silicic or free metal material (e.g., asbestos, glass, etc.)
252	.....Interengaged strand component includes synthetic fiber or filament
253	....Knitted strand, filament, portion or strip
254	.....Impregnation on single layer only
255	....Netted or open mesh strand, filament, portion or strip
256	.....Metal
257	....Particular or differential weave
258	.....Warp differs from weft
259	......Materials differ
260	....Coated or impregnated base
261	.....Adhesive coating or impregnation
262	.....Coating on surface of base
263	......Metal or compound thereof or natural rubber in coating
264	......Base is cellulosic material
265	......Base comprises synthetic strands, fibers or filaments
266	.......Silicone, silane or siloxane in coating
267	.......Polyamide or polyimide (e.g., nylon, etc.) strands
268	.......Glass fibers, filaments or strands
269	......Keyed by penetration of interstices
270	.....Wool substrate impregnated
271	.....Asbestos fiber base impregnated
272	.....Synthetic filament base impregnated
273	......Glass
274	.....Cellulosic monolayer impregnated
275	......Impregnation contains metallic compound or free element
276	......Phosphorous containing impregnant
277	.......With halogen
278	.....Aldehyde or ketone condensation product
279	.....Quaternary ammonium compound in impregnant
280	..Felt fabric
281	...With particulate matter
282	...At least three layers
283	..With particulate matter
284	..Fabric with plural layers
285	...At least one metal or glass
286	...At least one synthetic resin or polymer
287	....Polyester, polyamide or polyimide
288	..Bonded or coated fibers
289	..Fabric has impregnation and/or single coating
290	...Synthetic resin or polymer in impregnation or coating
291	...Comprising bitumen, tar, natural gum, natural oil, resin or wax in coating or impregnant
292	.Including noninterengaged strand(s) or strand-portion(s)
293	..With or in fiber layer
294	..Parallel
295	...With coating, impregnation or bond of rubber or elastomeric material
296	.Autogeneously bonded fibers

	WEB OR SHEET CONTAINING STRUCTURALLY DEFINED ELEMENT OR COMPONENT
297	.Including a second component containing structurally defined fibers
298	..Plural fiber layers
299	...Intertangled and/or interfitted
300	....Needled
301	....With coating, impregnation or bond
302	...With coating, impregnation or bond
303	..Physical dimension specified
304.4	.Composite having voids in a component, e.g., porous, cellular, etc.
305.5	..With chemically effective material, or specified gas other than air, N or carbon dioxide in void-containing component
306.6	..Void-containing component partially impregnated with adjacent component
307.3	...Void-containing component is inorganic
307.7	....Inorganic impregnant
308.4	...Void-containing component is synthetic resin
308.8	...Void-containing component is wood or paper
309.9	..With internal element bridging layers, nonplanar interface between layers, or intermediate layer of commingled adjacent foam layers
310.5	..With gradual property change within a component
311.1	..Void-containing component has a continuous matrix of fibers only, e.g., porous paper, etc.
311.3	...And a force disintegratable component, e.g., stencil sheet, etc.
311.5	...Fibers of defined composition
311.7	....Cellulosic
311.9	.....Plural cellulosic components
312.2	..Inorganic matrix in void-containing component
312.4	...Of hydraulic-setting material
312.6	...Of silicon-containing material, e.g., glass, etc.
312.8	...Of metal-containing material
313.3	..Preformed hollow element-containing
313.5	...Resin or rubber element
313.7	...Mineral element
313.9	...Metal- or silicon-containing element
314.2	..Void shape specified, e.g., crushed, flat, round, etc.
314.4	..Voids specified as closed
314.8	...Specified thickness of void-containing component (absolute or relative), numerical cell dimension or density
315.5	..Voids specified as micro
315.7	...Specified thickness of void-containing component (absolute or relative) or numerical cell dimension
315.9	...Composite has more than two layers
316.6	..Plural void-containing components
317.1	..With component specified as adhesive or bonding agent
317.3	...As outermost component
317.5	...Adhesive or bonding component contains voids
317.7	...Composition of adhesive or bonding component specified
317.9	..Void-containing component contains also a solid fiber or solid particle
318.4	..With nonvoid component of specified composition
318.6	...Of about the same composition as, and adjacent to, the void-containing component
318.8	....Integrally formed skin
319.1	...Inorganic
319.3	...Synthetic resin
319.7	....Linear or thermoplastic
319.9	.....Hydrocarbon polymer
320.2	.Composite having a component wherein a constituent is liquid or is contained within preformed walls, e.g., impregnant-filled, previously void-containing component, etc.
321.1	..Constituent is in liquid form
321.3	...Ink in pores
321.5	...Encapsulated liquid
322.2	..Indefinite plurality of similar impregnated thin sheets, e.g., "decorative laminate" type, etc.
322.7	..Differentially filled foam, filled plural layers, or filled layer with coat of filling material
323	.Including a second component containing structurally defined particles
324	..Mica
325	..Glass or ceramic (i.e., fired or glazed clay, cement, etc.), (porcelain, quartz, etc.)
326	..Cellulosic (e.g., wood, paper, cork, rayon, etc.)
327	..Polymeric or resinous material
328	..Heavy metal or aluminum or compound thereof
329	...Iron oxide or aluminum oxide
330	..Alkali metal or alkaline earth metal or compound thereof
331	..Silicic material
332	.Physical dimension specified
333	..In terms of molecular thickness or light wave length
334	..Coating layer not in excess of 5 mils thick or equivalent
335	...Up to 3 mils
336	....1 mil or less
337	..Of base or substrate
338	..Monolayer with structurally defined element
339	..Including synthetic resin or polymer layer or component
340	.Weight per unit area specified (e.g., gms/sq cm, lbs/sq ft, etc.)
341	..Of coating
342	...Cellulosic substrate
343	.Adhesive outermost layer
344	..Next to metal
345	..Including irradiated or wave energy treated component
346	..Heat or solvent activated or sealable
347	...Heat sealable
348	....Wax containing
349	....Synthetic resin or polymer
350	...Water activated
351	..Including moisture or waterproof component
352	..With release or antistick coating
353	..Including a primer layer
354	..Three or more layers
355	..Adhesive composition
356	...Including metal or compound thereof or natural rubber
357	COATED OR STRUCTUALLY DEFINED FLAKE, PARTICLE, CELL, STRAND, STRAND-PORTION, ROD, FILAMENT, MACROSCOPIC FIBER OR MASS THEREOF
358	.Channel shape
359	.Staple length fiber
360	..Plural and with bonded intersections only
361	..With coating or impregnation
362	..Nonlinear (e.g., crimped, coiled, etc.)

COATED OR STRUCTUALLY DEFINED FLAKE, PARTICLE, CELL, STRAND, STRAND-PORTION, ROD, FILAMENT, MACROSCOPIC FIBER OR MASS THEREOF
363 .Mica flake
364 .Rod, strand, filament or fiber
365 ..Including textile, cloth or fabric
366 ..Including boron or compound thereof (not as steel)
367 ..Including free carbon or carbide or therewith (not as steel)
368 ...In coating or impregnation
369 ..Nonlinear (e.g., crimped, coiled, etc.)
370 ...Composite
371 ...Helical or coiled
372 ..Including structurally defined particulate matter
373 ..Bicomponent, conjugate, composite or collateral fibers or filaments (i.e., coextruded sheath-core or side-by-side type)
374 ...Fibers or filaments nonconcentric (e.g., side-by-side or eccentric, etc.)
375 ..Coated or with bond, impregnation or core
376 ...Discontinuous or tubular or cellular core
377 ...Wound or wrapped core or coating (i.e., spiral or helical)
378 ...Coating on discrete and individual rods, strands or filaments
379 ...Including metal or compound thereof (excluding glass, ceramic and asbestos)
380 ....Plural coatings
381 .....Free metal in coating
382 .....Natural rubber in coating
383 .....Synthetic resin or polymer in plural coatings, each of different type
384 .....Glass, ceramic or metal oxide in coating
385 ....Metal with weld modifying or stabilizing coating (e.g., flux, slag, producer, etc.)
386 .....Titanium compound in coating
387 .....Silicic material in coating
388 ....Glass or silicic fiber or filament with metal coating
389 ....Metal or metal compound in coating
390 ....Rubber, cellulosic or silicic material in coating
391 ...Silane, silicone or siloxane in coating
392 ...Artificial fiber or filament
393 ....Cellulosic
394 ....Synthetic resin or polymer
395 .....Polyamide, polyimide or polyester
396 ...Impregnation
397 ..Particular cross section
398 ...Tubular or cellular
399 ...Longitudinally varying
400 ...Surface characteristic
401 ..Physical dimension
402 .Particulate matter (e.g., sphere, flake, etc.)
402.2 ..Microcapsule with liquid core
402.21 ...Solid-walled microcapsule from synthetic polymer
402.22 ....Addition polymer from unsaturated monomers only
402.24 ..Microcapsule with solid core
403 ..Coated
404 ...Silicic or refractory material containing (e.g., tungsten oxide, glass, cement, etc.)
405 ....Silane, siloxane or silicone coating
406 ....Glass particles or spheres
407 ...Including synthetic resin or polymer
408 SELF-SUSTAINING CARBON MASS OR LAYER WITH IMPREGNANT OR OTHER LAYER
409 SURFACE PROPERTY OR CHARACTERISTIC OF WEB, SHEET OR BLOCK
410 .Surface modified glass (e.g., tempered, strengthened, etc.)
411.1 COMPOSITE (NONSTRUCTURAL LAMINATE)
412 .Of polycarbonate
413 .Of epoxy ether
414 ..As intermediate layer
415 ...Next to glass or quartz
416 ...Next to metal
417 ..Next to glass or quartz
418 ..Next to metal
419 .Of polythioether
420 .Including interfacial reaction product of adjacent layers
421 .Of fluorinated addition polymer from unsaturated monomers
422 ..Addition polymer is perhalogenated
422.8 .Of polyisocyanurate
423.1 .Of polyamidoester (polyurethane, polyisocyanate, polycarbamate, etc.)
423.3 ..Next to second layer of polyamidoester
423.4 ..Next to animal skin or membrane
423.5 ..Next to polyamide (nylon, etc.)
423.7 ..Next to polyester (polyethylene terephthalate, etc.)
423.9 ..Next to natural rubber
424.2 ..Next to addition polymer of ethylenically unsaturated monomer
424.4 ...Ester monomer type (polyvinylacetate, etc.)
424.6 ...Halide monomer type (polyvinyl chloride, etc.)
424.7 ...Nitrile monomer type (polyacrylonitrile, etc.)
424.8 ...Hydrocarbon polymer (polyethylene, polybutadiene, etc.)
425.1 ..Next to cellulosic
425.3 ..Next to aldehyde or ketone condensation product (phenol-aldehyde, etc.)
425.5 ..Next to silicon-containing (silicone, cement, etc.) layer
425.6 ...Quartz or glass
425.8 ..Next to free metal
425.9 ..Particulate metal or metal compound-containing
426 .Of quartz or glass
427 ..Next to a boron containing layer
428 ..Next to another silicon containing layer
429 ...As silicone, silane or siloxane
430 ...Next to polyester (e.g., alkyd)
431 ...Cross-linked polyester (e.g., glycerol maleate-styrene, etc.)
432 ..Next to metal or compound thereof
433 ...Alloy or free metal
434 ....Noble metal containing
435 ..Next to polyamide or polyimide
436 ..Next to aldehyde or ketone condensation product
437 ...Next to acetal of polymerized unsaturated alcohol (e.g., formal butyral, etc.)
438 ..Next to cellulosic
439 ...Cellulosic ester
440 ..Next to natural rubber, gum, oil, rosin, wax, bituminous or tarry residue
441 ..Next to addition polymer from unsaturated monomers
442 ...Ester, halide or nitrile of addition polymer

COMPOSITE (NONSTRUCTURAL LAMINATE)

443	.Of asbestos
444	..With metal layer
445	..With cellulosic layer
446	.Of silicon containing (not as silicon alloy)
447	..As siloxane, silicone or silane
448	..As intermediate layer
449	...Paper as both adjacent layers
450	..Next to metal
451	..Next to addition polymer from unsaturated monomers, or aldehyde or ketone condensation product
452	..Next to cellulosic
453	...Sodium silicate
454	..Sand, clay or mica (silica excluded)
455	.Of cork
456	..Including natural oil or gum or rosin (e.g., linoleum, etc.)
457	.Of metal
458	..Next to polyester, polyamide or polyimide (e.g., alkyd, glue, or nylon, etc.)
459	...Natural source polyamide (e.g., casein, gelatin, etc.)
460	..Next to aldehyde or ketone condensation product
461	..Next to addition polymer from unsaturated monomers
462	...Including polyene monomers (e.g., butadiene, etc.)
463	...Ester, halide or nitrile of addition polymer
464	..Next to cellulosic
465	..Next to natural rubber
466	...With natural rubber next to second layer of natural rubber
467	..Next to natural gum, natural oil, rosin, lac or wax
468	..Next to bituminous or tarry residue
469	..Next to metal salt or oxide
470	...Organo-metallic salt
471	...Alkali or alkaline earth metal oxide
472	...Refractory metal salt or oxide
472.1	....Formed in situ
472.2	...Aluminium or iron salt or oxide formed in situ
472.3	...Phosphorus containing metal salt formed in situ
473	.Of animal membrane or skin
473.5	.Of polyimide
474.4	.Of polyamide
474.7	..Next to second layer of polyamide
474.9	...At least one layer is nylon type
475.2	..Next to polyester
475.5	..Nylon type
475.8	...Next to addition polymer from unsaturated monomer(s)
476.1	....Polymer of monoethylenically unsaturated hydrocarbon
476.3	..Next to addition polymer from unsaturated monomer(s)
476.6	...Natural source-type polyamide
476.9	...Polymer of monoethylenically unsaturated hydrocarbon
477.4	..Next to aldehyde or ketone condensation product
477.7	..Inorganic-containing or next to inorganic-containing
478.2	..Natural source-type polyamide, e.g., casein, gelatin, etc.
478.4	...Next to cellulosic
478.8	....Paper
479.3	..Next to cellulosic
479.6	...Paper or wood
480	.Of polyester (e.g., alkyd, etc.)
481	..Next to cellulosic
482	..Of cross-linked polyester
483	..Next to addition polymer from unsaturated monomers
484	.Of wax or waxy material
485	..Next to cellulosic
486	...Cellulosic is paper
487	....Glassine paper
488.1	....With pigment or dye (e.g., carbon paper, hectograph paper, etc.)
488.4	.....Having layer over transferable material or on carrier opposite transferable material layer
489	.Of bituminous or tarry residue
490	..Next to cellulosic
491	...Paper
492	.Of natural rubber
493	..Next to second layer of natural rubber
494	..Next to aldehyde or ketone condesation product or addition polymer from unsaturated monomers
495	...Including polyene monomers
496	..Next to cellulosic
497	.Of natural gum, rosin, natural oil or lac
498	..Next to cellulosic
499	...Natural oil
500	.Of addition polymer from unsaturated monomers
501	..Next to an aldehyde or ketone condensation product
502	...Melamine-aldehyde
503	....Impregnated or coated cellulosic material
504	...Amide-aldehyde
505	....Urea or modified urea-aldehyde
506	...Phenol-aldehyde
507	..Next to cellulosic
508	...Regenerated or modified cellulose
509	....Addition polymer of hydrocarbon(s) only
510	....Where addition polymer is an ester or halide
511	...Paper or wood
512	....Addition polymer of hydrocarbon(s) only
513	.....Monoethylenically unsaturated
514	....Ester, halide or nitrile of addition polymer
515	..Next to second addition polymer from unsaturated monomers
516	...Monoolefin polymer
517	....Next to polyene polymer
518	....Next to vinyl or vinylidene chloride polymer
519	...Including polyene monomers
520	...Ester, halide or nitrile of addition polymer
521	..Polyene monomer-containing
522	..Ester, halide or nitrile of addition polymer
523	..Polymer of monoethylenically unsaturated hydrocarbon
524	.Of aldehyde or ketone condensation product
525	..Next to second aldehyde or ketone condensation product
526	..Next to cellulosic
527	...Modified or regenerated cellulose
528	...Wood
529	....Phenoplast
530	...Paper
531	....Phenoplast
532	.Of carbohydrate
533	..Of cellulosic next to another carbohydrate
534	...Cellulosic next to another cellulosic
535	....Wood or paper
536	....Regenerated or modified
537.1	..Of wood

	COMPOSITE (NONSTRUCTURAL LAMINATE)
	.Of carbohydrate
537.5	..Of paper
537.7	...Next to layer of metal salt, e.g., plasterboard, etc.
688	.Of inorganic material
689	..Metal-compound-containing layer
690	...Fluorescent, phosphorescent or luminescent layer
691	....Halogen-containing
692	...Defined magnetic layer
693	....Next to second metal-compound-containing layer
694	....Dynamic recording medium
695	.....With lubricant in or on layer
696	...Halogen-containing
697	...Layer contains compound(s) of plural metals
698	...Carbide-, nitride-, or sulfide-containing layer
699	...Next to second metal-compound-containing layer
700	....Single crystal
701	....O-containing metal compound
702	...O-containing
703	....Water-settable material, e.g., gypsum, etc.
704	.Of B, N, P, S or metal-containing material
539.5	METAL CONTINUOUS PHASE INTERENGAGED WITH NONMETAL CONTINUOUS PHASE
540	IMPREGNATED NATURALLY SOLID PRODUCT (E.G., LEATHER, STONE, ETC.)
541	.Wood timber product (e.g., piling, post, veneer, etc.)
542.2	DECORATIVE ARTICLE
542.4	.Trophy or memento, e.g., preserved artifact, etc.
542.6	.Constructed from filamentary or flat sheet material
542.8	ARTICLE OF INTERMEDIATE SHAPE, E.G., BLANK, PARISON, PREFORM, ETC.
543	MISCELLANEOUS (E.G., TREATED SURFACES, ETC.)
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	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	MAGNETIC FEATURE
901	PRINTED CIRCUIT
902	HIGH MODULUS FILAMENT OR FIBER
903	MICROFIBER (LESS THAN 100 MICRON DIAMETER)
903.3	RECYCLED MATERIALS
904	ARTIFICIAL LEATHER
904.4	WALL AND SHELF COVERINGS
905	ODOR RELEASING MATERIAL
906	ROLL OR COIL
906.6	EMBROIDERY
907	RESISTANT AGAINST PLANT OR ANIMAL ATTACK
907.7	LAYER OR ARTICLE RENDERED LIGHT-TRANSMISSIVE BY PRESSURE, E.G., BLUSHED, ETC.
908	IMPRESSION RETENTION LAYER (E.G., PRINT MATRIX, SOUND RECORD, ETC.)
908.8	WEAR-RESISTANT LAYER
909	RESILIENT LAYER (E.G., PRINTER'S BLANKET, ETC.)
910	PRODUCT WITH MOLECULAR ORIENTATION
911	PENETRATION RESISTANT LAYER
912	PUNCTURE HEALING LAYER
912.2	MIRROR
913	MATERIAL DESIGNED TO BE RESPONSIVE TO TEMPERATURE, LIGHT, MOISTURE, ETC.
913.3	DECORATIVE ARTICLE FOR VIEWING FROM ONE SIDE ONLY, E.G., PLAQUE, ETC.
914	TRANSFER OR DECALCOMANIA
915	.Fraud or tamper detecting
916	FRAUD OR TAMPER DETECTING
917	ELECTROLUMINESCENT
918	MATERIAL ABNORMALLY TRANSPARENT
919	CAMOUFLAGED ARTICLE
920	FIRE OR HEAT PROTECTION FEATURE
921	.Fire or flameproofing
922	STATIC ELECTRICITY METAL BLEED-OFF METALLIC STOCK*
923	.Physical dimension
924	..Composite
925	...Relative dimension specified
926	...Thickness of individual layer specified
	.Special properties
927	..Decorative informative
928	..Magnetic
929	..Electrical contact feature
930	..Electric superconducting
931	..Components of differing electric conductivity
932	..Abrasive or cutting feature
933	..Sacrificial component
	.Product by special process
934	..Electrical process
935	...Electroplating
936	..Chemical deposition, e.g., electroless plating, etc.
937	..Sprayed metal
938	..Vapor deposition or gas diffusion
939	..Molten or fused coating
940	..Pressure bonding, e.g., explosive, etc.
941	..Solid state alloying, e.g., diffusion, to disappearance of an original layer

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1 HAVING POLARITY SAFETY FEATURE
2 HAVING LIVING MATTER, E.G., MICROORGANISM, ETC.
3 HAVING PULSE FEATURE
4 WITH SONIC OR ULTRASONIC FEATURE
5 RADIO ACTIVE MATERIAL CONTAINING
6 WITH PRESSURE EQUALIZING MEANS FOR LIQUID IMMERSION OPERATION
7 WITH NONBATTERY ELECTRICAL COMPONENT ELECTRICALLY CONNECTED WITHIN CELL CASING OTHER THAN TESTING OR INDICATING COMPONENTS
8 HAVING DISPARATE NONELECTRICAL FUNCTION
9 HAVING DIVERSE CELLS OR DIVERSE REMOVABLE CELLS IN A SUPPORT MEANS
10 HAVING MAGNETIC FIELD FEATURE
11 CURRENT PRODUCTION DEPENDENT UPON TEMPERATURE DIFFERENTIAL BETWEEN A PAIR OF ELECTRODES
12 FUEL CELL, SUBCOMBINATION THEREOF OR METHODS OF OPERATING
13 .Process of operating
14 ..Circulating or feeding electrolyte
15 ...Active material in electrolyte
16 ..Fused or molten electrolyte
17 ..Generating, regenerating or recycling reactant
18 .Plural cells having means to reduce ionic short circuit
19 .Having means for active material generation or regeneration
20 ..By heating or cooling
21 ..By electrical current
22 .Automatic control means
23 ..Electrical output dependent
24 ..Temperature dependent
25 ..Pressure dependent
26 .Having heat exchange means
27 .Active material electrode-type cell or subcombination thereof
28 ..Envelope cathode-type or subcombination thereof
29 ..And chemically specified electrolyte material
30 .Solid electrolyte
31 ..Tubular
32 ..Plural disc or modules
33 ..Electrolyte composition chemically specified
34 .Housing member, seal, spacer or fluid distributing or directing means
35 ..Having sealing feature
36 ...Having bonded seal, e.g., welded, adhesive, molded in situ, etc.
37 ....Having clamping means
38 ...Having support or spacers with fluid distribution means
39 ....And fluid directing means
40 .Catalytic electrode structure or composition
41 ..Having electrolyte matrix or barrier layer
42 ..Having organic constituent as part of the electrode
43 ...Organic catalyst
44 ..Having an inorganic matrix, substrate or support
45 ...Of sintered particles
46 .Chemically specified electrolyte
47 HAVING EARTH FEATURE
48 PRESERVING CELL IN STORAGE FEATURE
49 REGENERATING, SALVAGE OR REPAIR FEATURE OTHER THAN ONLY ADDITION OF ELECTROLYTE TO CELL OR ELECTRICALLY CHARGING PER SE
50 PROCESS OF CELL OPERATION
51 .Electrolyte circulation
52 .Activation of inactive cell
53 MEANS EXTERNALLY RELEASING INTERNAL GAS PRESSURE FROM CLOSED CELL, I.E., VALVE ETC.
54 .Elastic, resilient or spring biasing valve means
55 ..Elastic band or O-ring valve member
56 .Blowout type
57 SEALED CELL HAVING GAS PREVENTION OR ELIMATION MEANS
58 .Prevention means controlling an auxiliary device
59 .Prevention or elimination means is one of the cell electrodes or is electrically connected to an electrode
60 ..Electrodes having different total capacity or one electrode with charge or discharge reserve
61 WITH CONTROL MEANS RESPONSIVE TO BATTERY CONDITION SENSING MEANS
62 .Temperature control
63 .Electrolyte feeding control from reserve supply
64 ..Having valve in control
65 TERMINAL PROTECTOR OTHER THAN SEAL THROUGH CASING
66 HAVING MEANS TO ACCOMMODATE ELECTRODE EXPANSION
67 HAVING MOVABLE MECHANICAL MEANS TO PROVIDE RELATIVE MOTION BETWEEN ELECTRODE AND ELECTROLYTE
68 .Means moves electrode
69 ..Rotary motion
70 .Means moves electrolyte externally of electrode chamber
71 WITH SYSTEM HAVING MEANS TO MOVE VENTILATING FLUID
72 HAVING SPECIFIED VENTING, FEEDING OR CIRCULATION STRUCTURE (OTHER THAN FEEDING OR FILLING FOR ACTIVATING DEFERRED ACTION-TYPE BATTERY)
73 .Single filling opening and means to equalize fluid level in plural cells
74 .Having means to control electrolyte level when liquid is added, other than a visual reference point
75 ..For different levels
76 ..Float valve
77 ..By establishing an air lock
78 ...Liquid seal only
79 ...Movable valve structure supported within the filler opening
80 .Having (manual) electrolyte storage feeding a device
81 .Having nonmovable means providing motion between electrolyte and electrodes, i.e., circulation
82 .Venting structure
83 ..Separate ventilating inlet and exhaust openings
84 ..Nonspill fluent electrolyte type other than gas diffusive type
85 ...Weight actuated valve type
86 ..Reactive, absorbable or diffusive type
87 ..Gang type
88 ...Having manifold
89 ..Other stopper, cap or plug type
90 WITH MEASURING, TESTING, OR INDICATING MEANS
91 .For charge or liquid level
92 ..Having electrical circuitry
93 ...External type
94 PLURAL CONCENTRIC OR SINGLE COILED ELECTRODE

95 HAVING MEANS FOR DRAINING OR REMOVING ELECTROLYTE FROM A CELL OTHER THAN FILLER OPENING
96 CELL SUPPORT FOR REMOVABLE CELL
97 .Having switch or interlock means
98 .Having disparate support structure, e.g., eyeglass temple, etc.
99 .For plural cells
100 .Support or holder per se
101 FLUID ACTIVE MATERIAL OR TWO-FLUID ELECTROLYTE COMBINATION HAVING AREAS OF NONMIXTURE
102 .Active material in molten state
103 ..With fused electrolyte, i.e., molten
104 ..With solid-state electrolyte
105 .Active material in solution
106 ..Copper sulfate solution
107 ..Iron containing material
108 ..Nitrogen containing material
109 ..Chromium containing material
110 DEFERRED ACTION TYPE
111 .Responsive to light
112 .Responsive to heat
113 .Responsive to movement of electrode on contained electrolyte
114 ..Activated by spin or set back
115 ..Activated by explosive charge
116 ..Frangible separation means
117 ..By orientation of the cell
118 .Responsive to addition of liquid
119 ..Activated by immersion, e.g., sea water type
120 WITH HEAT EXCHANGE FEATURE
121 ADJUNCTS IN COMBINATION WITH OR FOR CONNECTION TO AN EXTERNAL ELECTRICAL ELECTRIC CURRENT CARRYING MEMBER OF A BATTERY OTHER THAN TERMINAL PROTECTORS, E.G., TERMINAL ADAPTER, CAPS, LIFTERS, ETC. AND CONNECTORS PER SE
122 CURRENT PRODUCING CELL, ELEMENTS, SUBCOMBINATIONS AND COMPOSITIONS FOR USE THEREWITH AND ADJUNCTS
123 .Having means to interchangeably connect plural individual cells or means to conectively support cell to current seeking apparatus
124 .Printed cell type
125 .Standard cell or counter emf type
126 .Cell with protective layer on electrolyte
127 .Tape or flexible-type cell including tape fuel cells or subcombination thereof
128 .Electrode or plural tablets, pellets or discs
129 .Separator, retainer or spacer insulating structure (other than a single porous flat sheet, or either an impregnated or coated sheet not having distinct layers)
130 ..Insulator structure is only spacer of the rod, button, strip, or frame type
131 ..Having electrode enclosing feature
132 ...Separating material in bulk form about electrode
133 ...Cylindrical unit cell type, flat unit cell type or porous cup type
134 ....Paste or gel
135 .....With layer of material or spacing means
136 ...Envelope type
137 ....Coating on electrode
138 ....Having support frame or cover
139 ....Having edge bond or seal
140 ...Tubular type
141 ....Having plural layers of diverse material
142 ..Having plural distinct components
143 ...Ribs or projections attached to sheet material
144 ...Plural layers
145 ....Having defined porosity either functional or by size (i.e., semipermeable, permselective, ionpermeable, microporous, etc.)
146 ..Having electrode spacing projections
147 ...Projections are deformed portions, of a sheet material, i.e., corrugations, etc.
148 .Plural housing having spacing means or channels for air circulation and short prevention
149 .Plural cells
150 ..With integral switch means
151 ..Casing having interlocking structure
152 ..Individual cells connected in repeating contiguous layered units
153 ...Having unit enclosing housing
154 ....Having sectional component
155 .....Of tray, cup or dish shape in nested or telescopic relationship
156 ..Complete cells
157 ...In end-to-end contact, e.g., stacked button-type cell, etc.
158 ...Having intercell connector
159 ....And common external casing, tray or clamp means
160 ..Having intercell connector
161 .Intracell assembly having cell electrode connector
162 .Flat-type unit cell and specific unit cell components
163 .Cell enclosure structure, e.g., housing, casing, container, cover, etc.
164 ..Cylindrical unit cell type, e.g., cup container electrode, tubular electrode, casing, etc.
165 ...Having centrally located anode, i.e., "inside-out" type cell
166 ...Reactive metallic can, cup or tubular electrode
167 ....Having outer nonreactive housing, casing, or jacket
168 .....Having metallic or conductive outer casing
169 ......Outer casing electrically connected to reactive electrode
170 .....Electrical contact terminal plate or cap clamped to or embedded in a portion of the housing
171 ....Having seal
172 .....Mechanical clamping pressure seal
173 ......And sealing mass or compound
174 ...Having seal material
175 ..Cover only
176 ..Container only
177 ..Housing or casing with plural covers
178 ..Having terminal
179 ...On or through a side of housing
180 ...Sealing sleeve embedded or molded in cover
181 ...And terminal seal
182 ....Means to stop rotational movement between cover and terminal
183 ....Having threaded compression means
184 ....Sealing mass or compound
185 ..Having seal feature
186 ..Having cell assembly support feature
187 ..Having handle or lifting device
188 .Include electrolyte composition chemically specified and method

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	CURRENT PRODUCING CELL, ELEMENTS, SUBCOMBINATIONS AND COMPOSITIONS FOR USE THEREWITH AND ADJUNCTS
	.Include electrolyte composition chemically specified and method
189	..Precursor compostion
190	..Gelled
191	..Solid
192	...Organic
193	...Metal oxide component
194	..Nonaqueous solvent
195	...With water
196	...Inorganic solvent
197	...Plural nonaqueous system
198	..Having organic solute component
199	..Halogen containing
200	...Hydrogen containing
201	....Ammonium
202	..Chromium containing
203	..With acid containing N or P constituent
204	..Sulphuric acid
205	...Sulphate containing
206	..Alkaline
207	...With salt or acid component
208	.Electrode support for suspending or holding an electrode in a battery
209	.Electrode
210	..Bipolar type
211	..Having connector tab
212	..Having active material with organic component
213	...Organic component is active material
214	...Organic component is an antioxidant
215	...Organic component is an expander or addition agent for improving electrode capacity or plating characteristics
216	....Dendrite or "tree" forming inhibitor
217	...Organic component is a binder
218	..Having inorganic active material chemically specified
219	...Silver component is active material
220	...Copper component is active material
221	...Iron component is active material
222	...Cadmium component is active material
223	...Nickel component is active material
224	...Manganese component is active material
225	...Lead component is active material
226	....Alloy
227	....Metal sulphate or carbonate
228	....Lead oxide
229	...Zinc component
230	....With mercury
231	....Zinc oxide
232	..Having inorganic binder or conductive filler
233	..Grid or holder for active material
234	...Grid or holder has nonconducting component portion thereof
235	...Having particulate or fibrous porous mass including a sintered mass
236	....Having coating in the pores
237	....Having support or reinforcing member
238	...Having longitudinal electrically conducting tubes or cores
239	...Having conductive receptacle or mechanical locking means for the active material
240	....Locking means being bendable tabs
241	...Open mesh or perforated plate
242	....Expanded metal
243	....Having members in a face plane of the grid being offset from members in the plane of the opposite face
244	.....Distinct elements or members intermediate the face members
245	...Materials chemically specified
246	..With insulating separator, spacer or retainer means
247	.Separator, retainer, spacer or materials for use therewith
248	..Having additive for effecting the charge capacity, life, etc., of a cell
249	..Organic material
250	...And wetting agent or surface acting agent
251	...And inorganic material
252	....Silicon containing
253	...Phenolic or thermosetting resin
254	...Rubber or thermoplastic resin
255	...Natural or treated plant materials

CLASS 430 RADIATION IMAGERY CHEMISTRY - PROCESS, COMPOSITION OR PRODUCT

1 HOLOGRAPHIC PROCESS, COMPOSITION, OR PRODUCT
2 .Composition or product or process of making the same
3 USE OF SOUND OR NONDIGITAL COMPRESSIVE FORCE
4 RADIATION MODIFYING PRODUCT OR PROCESS OF MAKING
5 .Radiation mask
6 .Screen other than for cathode-ray tube
7 ..Color
8 MICROGRAPHY, PROCESS, COMPOSITION, OR PRODUCT OTHER THAN MICROELECTRONIC DEVICE MANUFACTURE
9 IMAGED PRODUCT
10 .Antifraud or antitampering
11 .Structurally defined
12 ..Nonuniform or non-coextensive layer added to finished imaged product
13 .Image contained within transparent base
14 .Multilayer
15 ..Plural image layers
16 .Deposited metal coating on image
17 .Nonsilver image
18 .Including resin or synthetic polymer
19 ERASABLE IMAGING
20 LIQUID CRYSTAL PROCESS, COMPOSITION, OR PRODUCT
21 RETRIEVING IMAGE MADE USING RADIATION IMAGERY
22 REGISTRATION OR LAYOUT PROCESS OTHER THAN COLOR PROOFING
23 PRODUCING CATHODE-RAY TUBE OR ELEMENT THEREOF
24 .Using specific control or specific modification of exposure, i.e., by manipulation of radiation source or exposure through elements other than shadow mask
25 .With light-absorbing matrix on faceplate
26 .With faceplate of phosphoric stripes
27 .With filter material on finished faceplate
28 .Using specified radiation-sensitive composition other than a nominal sensitized polyvinyl alcohol
29 .Using specified post-imaging process composition
30 INCLUDING CONTROL FEATURE RESPONSIVE TO A TEST OR MEASUREMENT
31 ELECTRIC OR MAGNETIC IMAGERY, E.G., XEROGRAPHY, ELECTROGRAPHY, MAGNETOGRAPHY, ETC., PROCESS, COMPOSITION, OR PRODUCT
32 .Electrophoretic imaging, process, composition, or product
33 ..Post treatment process to fix or transfer image, or collect or remove electric radiation sensitive pigment
34 ..Pretreatment process to change the physical properties of electrophoretic suspension or specified imaging feature exposure
35 ..Specified electric field applied or electric charging step
36 ..Manipulation of electrode
37 ..Electric radiation sensitive pigment
38 ..Material used to modify electrophoretic suspension response
39 .Magnetic imaging
40 .Manifold imaging, process, composition, or product
41 .Migration imaging, process, composition, or product, e.g., electrosolography, etc.
42 .To produce a color reproduction, i.e., color named, or more than one color specified
43 ..Color correction
44 ..Manipulation of color separation image to obtain a multicolor image in registration
45 ..Identified developing composition or identified developing feature
46 ..Identified radiation-conductive element or composition
47 ..Identified receptor or named image transfer feature
48 .Electrostatic image transfer
49 .To produce printing surface
50 .Deformation imaging, e.g., frost imaging, etc.
51 .Persistent internal polarization imaging
52 .Electrolysis imaging
53 .Using ion or particle flow modulation
54 .To produce multiple image on medium or plural radiant energy exposures of medium, e.g., image intensification using two images, or two exposures of same image, etc.
55 .Charging simultaneous with imaging
56 .Radiation-sensitive composition or product
57 ..Multiple radiation conductive layers
58 ...Charge transport layer
59 ....Amino or substituted amino group containing
60 ..Product having layer between radiation-conductive layer and base or support
61 ...Sensitizing layer
62 ...Conductive layer
63 ....Inorganic containing
64 ...Blocking or barrier layer
65 ....Inorganic containing
66 ..Product having overlayer on radiation-conductive layer
67 ...Electrically insulating overlayer
68 ..Including radiation-conductive screen
69 ..Including conductive base or support
70 ..Radiation-conductive composition contains carbocyclic ring only
71 ...Polycyclo ring system
72 ....Substituted
73 ...Containing amino or substituted amino group
74 ....Alkyl amino group
75 ..Radiation-conductive composition contains hetero ring
76 ...The hetero ring has at least nitrogen as a ring hetero atom
77 ....Additional diverse ring hetero atom in the hetero ring
78 ....Polycyclo ring system having the hetero ring as one of the cyclo systems
79 .....Carbazole
80 ......Polymer or synthetic resin only
81 ......Sensitized or doped
82 ....Dye or pigment
83 ..Sensitized or doped organic radiation conductor
84 ..Inorganic radiation conductive composition
85 ...Alloy
86 ....Having more than two consituents
87 ...Zinc containing
88 ....And other radiation-conductive material
89 ....And nonsensitizing additive other than binder

	ELECTRIC OR MAGNETIC IMAGERY, E.G., XEROGRAPHY, ELECTROGRAPHY, MAGNETOGRAPHY, ETC., PROCESS, COMPOSITION, OR PRODUCT
	.Radiation-sensitive composition or product
	..Inorganic radiation conductive composition
	...Zinc containing
90	....Sensitized or doped
91	.....Dye or pigment
92	......Intercyclic-acyclic -CH= or intercyclic-acyclic chain which contains -CH=
93	.......Cyanine dye
94	...Cadmium containing
95	...Sensitized or doped
96	..Binder for radiation-conductive composition
97	.Post imaging process, finishing, or perfecting composition or product
98	..Fixing image by pressure only
99	..Fixing image by heated metal roller
100	..Reversal development
101	..Impression development
102	..Selective toner release
103	..Using developer electrode
104	..Finishing or perfecting composition or product
105	...Developing composition or product
106	....Identified colorant, i.e., dye, dye former, pigment, etc.
106.6	....Magnetic or iron-containing component
107	....Dry powder
108	.....Identified carrier
109	.....Identified toner
110	.....Identified adjuvant, i.e., charge control agent, etc.
111	.....Identified structure, i.e., size, shape of carrier or toner particle, etc.
112	....Liquid
113	.....Multiple phase liquid carrier medium, i.e., emulsion
114	.....Identified toner, i.e., identified resin coated pigment, etc.
115	.....Identified adjuvant, i.e., surfactant, etc.
116	.....Identified liquid carrier
117	..Liquid development
118	...Wetting development
119	...Charged solid particles deposited out of insulating liquid carrier
120	..Dry powder developing
121	...Cascade
122	...Using magnetic brush
123	...Using fur brush
124	..Fixing image
125	..Cleaning radiation conductive surface
126	..Transfer of image to different surface
127	.Process of making radiation-sensitive product
128	..Coating by vacuum deposition
129	..Extrusion coating
130	..Thermal or energy treatment of radiation-sensitive layer, e.g., by fusing or annealing, or solvent aftertreatment of radiation-sensitive layer, etc.
131	..Applying subbing layer
132	..Applying overlayer
133	..Applying radiation-sensitive layer
134	...Heterogeneous
135	.Process of making radiation-sensitive composition
136	..Utilizing high temperature, e.g., by fusing, etc.
137	.Process of making developing composition
138	MICROCAPSULE, PROCESS, COMPOSITION, OR PRODUCT
139	LUMINESCENT IMAGING
140	PRODUCT HAVING SOUND RECORD OR PROCESS OF MAKING
141	DIAZO REPRODUCTION, PROCESS, COMPOSITION, OR PRODUCT
142	.Process producing multiple image
143	..Color proofing, colloid transfer, or pigment development
144	.Powder development of tacky surface
145	.Photomechanical dye image prepared
146	.Diazo-type process, i.e., producing dye image by reacting the diazo or the imaged reaction product of the diazo
147	..Negative image prepared
148	..To make diazo-type intermediate, black-line image, or continuous-tone image
149	..Liquid development, e.g., aqueous solution with coupler, etc.
150	..Gaseous development, e.g., ammonia vapor, etc.
151	..Heat development
152	.Vesicular process
153	.Physical development
154	.Composition or product which contains radiation sensitive compound having moiety of nitrogen double or triple bonded directly to nitrogen other than chromophore moiety, e.g., triazene containing product, etc., process of making, and composition or product used to finish or develop a diazo reproduction
155	..Product with at least two named layers
156	...At least two radiation-sensitive layers
157	...Diazonium compound containing layer
158	....Including subbing layer
159	.....Silicon, nitrogen or sulfur compound containing subbing layer
160	.....Polymer containing subbing layer
161	.....Acid, salt, or ester moiety ingredient containing subbing layer
162	....Including overlayer or backing layer
163	....Diazonium salt with anion specified
164	...Diazo-N-sulfonate containing layer
165	...Quinone diazide containing layer
166	....Including additional layer
167	...Azide containing layer
168	..Process of making diazo product
169	...Using specific adjuvant other than radiation-sensitive diazo compound
170	..Radiation-sensitive composition
171	...Diazonium compound containing
172	....At least two diverse diazonium compounds
173	....At least two couplers
174	.....Includes additional adjuvant other than acidic stabilizer
175	....Polymeric diazonium compound
176	....Polymeric mixture
177	....Processing ingredient other than coupler or carboxylic acid compound
178	.....Metal salt ingredient
179	.....Nitrogen atom containing organic ingredient
180	....Naphthol coupler included
181	....Phenol coupler included

DIAZO REPRODUCTION, PROCESS, COMPOSITION, OR PRODUCT
.Composition or product which contains radiation sensitive compound having moiety of nitrogen double or triple bonded directly to nitrogen other than chromophore moiety, e.g., triazene containing product, etc., process of making, and composition or product used to finish or develop a diazo reproduction
..Radiation-sensitive composition
...Diazonium compound containing
182 ....Aceto-aceto or heterocyclic coupler included
183 ....P-amino or p-thio benzene diazonium compound
184 .....2,3 substitution of benzene nucleus
185 .....Additional substituent on benzene nucleus
186 .....P-substituent is p-heterocyclic amine
187 .....2,5 substitution of benzene nucleus
188 ...Diazo-N-sulfonate containing
189 ...Quinone diazide containing
190 ....Polymeric quinone diazide
191 ....And monomeric processing ingredient
192 ....Polymeric mixture
193 ....O-quinone diazide
194 ...Azide containing
195 ....Polymeric azide
196 ....And monomeric processing ingredient
197 ....Polymeric mixture
198 VISIBLE IMAGING INCLUDING STEP OF FIRING OR SINTERING
199 TRANSFER PROCEDURE BETWEEN IMAGE AND IMAGE LAYER, IMAGE RECEIVING LAYERS, OR ELEMENT CONTAINING AN IMAGE RECEIVING LAYER OR AN INGREDIENT FOR FORMING AN IMAGE RECEIVING LAYER
200 .Imagewise heating, element or image receiving layers therefor or imagewise vapor and gas transfer process, element or image receiving layer therefor
201 ..Imagewise vapor or gas transfer process, element or image receiving layer therefor
202 .Diffusion transfer process, element, or identified image receiving layers therefor
203 ..By uniform application of heat, element, or image receiving layer therefor
204 ..Making printing plate
205 ...Including imagewise removal of image receiving layer or portion thereof
206 ..Web processing of radiation-sensitive layer or imbibition of image receiving layer or image receiving element with processing composition prior to contact with the radiation sensitive element or layer
207 ..Element structurally defined other than containing nominal processing composition container or trap, or containing processing composition container or trap made of identified material
208 ...Having specified processing composition retaining means
209 ...Having specified trap
210 ...Having separable carrier sheet with processing composition container or trap permanently attached thereto
211 ..Element or identified image receiving layers for dye image formation
212 ...Element containing silver salt sensitizer or either element or image receiving layer for use therewith
213 ....Having either an identified dye mordant or image receiving layer binder other than nominal gelatin
214 ....Having either a nonradiation sensitive scavenger layer, or an ingredient for forming scavenger or barrier layer, or an identified developing agent scavenger
215 ....Identified synthetic polymeric binder contained in nonradiation sensitive processing composition permeable layer other than an image receiving or neutralization layer
216 ....Identified neutralizing layer or ingredient containing or dye stabilizer containing
217 ....Silver halide identified-grain, identified emulsion binder other than nominal gelatin, or identified sensitizer or identified desensitizer containing
218 ....Identified nondye image forming developing agent, silver halide development accelerator or retarder, or dye image forming accelerator or retarder containing
219 .....Silver halide developing retarder or antifoggant
220 ....Identified light absorbing, whitening, brightening, or reflecting agent other than nominal TiO2
221 .....pH sensitive
222 ....Identified dye image forming compound other than colorless color developer or dye mordant containing or identified organic solvent for an incorporated ingredient
223 .....Redox cleavable dye or dye precursor releaser
224 .....Dye developer or leuco dye developer
225 ......Azo
226 .....Coupler with coupling-off ballast, dye or dye precursor moiety
227 ..Element or image receiving layers for silver salt or silver complex transfer
228 ...Having lenticular or color screen
229 ...Permanent laminate
230 ...Identified silver halide grain, silver halide emulsion, binder other than nominal gelatin, or silver halide sensitizer or desensitizer containing
231 ...Identified precipitation nuclei or image receiving layer binder containing other than nominal gelatin
232 ....Identified organic polymeric image receiving layer binder other than nominal gelatin
233 ...Identified toning or silver transfer image stabilizing ingredient containing
234 ...Identified developing agent or silver salt complexing agent containing
235 ..Dye image formation process
236 ...Using silver salt sensitizer

TRANSFER PROCEDURE BETWEEN IMAGE AND IMAGE LAYER, IMAGE RECEIVING LAYERS, OR ELEMENT CONTAINING AN IMAGE RECEIVING LAYER OR AN INGREDIENT FOR FORMING AN IMAGE RECEIVING LAYER
.Diffusion transfer process, element, or identified image receiving layers therefor
..Dye image formation process
...Using silver salt sensitizer
237 ....Using identified neutralization layer or ingredient or separate post transfer treatment of dye image
238 ....Using identified dye mordant or binder other than nominal gelatin
239 ....Using identified nondye image forming developing agent, silver development accelerator or retarder, or dye image formation accelerator or retarder
240 .....Development retarder or antifoggant
241 ....Using identified dye forming compound other than colorless color developer or dye mordant or using identified organic solvent
242 .....Redox cleavable dye or dye precursor releaser
243 .....Dye developer or leuco dye developer
244 ..Silver salt transfer process
245 ...Exposing through color filter element
246 ...Processing permanent laminate
247 ...Having identified precipitation nuclei or identified image receiving binder other than nominal gelatin
248 ...Including silver transfer image toning or stabilizing or separate post transfer treatment of element or layer containing silver image
249 ...Developing with an identified silver halide developing agent
250 ....Hydroxylamine
251 ...Processing with identified silver or silver salt complexing agent
252 .Image layer portion transfer and element therefor
253 ..Separating exposed areas from unexposed or underexposed areas of image layer by transfer, or element or image receiving layers therefor
254 ...Transfer process with uniform heat application and element therefor
255 ...Using silver salt sensitizer and element therefor
256 STRIPPING PROCESS OR ELEMENT
257 .Forming composite image, e.g., multiple stripped image layers, etc.
258 .Forming nonplanar image
259 .Element
260 ..Stripping layer having radiation polymerizable or cross-linkable composition
261 ..Strippable between two radiation sensitive layers
262 ..Stripping layer containing specified synthetic nonradiation sensitive polymer
263 ...From ethylenically unsaturated monomer
264 SILVER HALIDE COLLOID TANNING PROCESS, COMPOSITION, OR PRODUCT
265 .Process using lithographic infectious developer
266 ..And polymer or nonpolymer condensation reaction product
267 ..And heterocyclic additive
268 .Infectious developer composition
269 IMAGING AFFECTING PHYSICAL PROPERTY OF RADIATION SENSITIVE MATERIAL, OR PRODUCING NONPLANAR OR PRINTING SURFACE - PROCESS, COMPOSITION, OR PRODUCT
270 .Radiation sensitive composition or product or process of making
271 ..Identified backing or protective layer containing
272 ...Silicon containing backing or protective layer
273 ...Identified overlayer on radiation-sensitive layer
274 ...And radiation-sensitive chromium compound
275 ...Metal as backing or protective layer
276 ....And another backing or protective layer other than aluminum oxide
277 ....Copper
278 ....Aluminum
279 ....Zinc or magnesium
280 ..Radiation sensitive composition comprising oxirane ring containing component
281 ..Radiation sensitive composition comprising ethylenically unsaturated compound
282 ...N-vinylidene
283 ...Amide
284 ....Urethane
285 ...Polyester
286 ...Resin or prepolymer containing ethylenical unsaturation
287 ....Ethylenic unsaturation within the side chain component
288 ...Plural, terminal unsaturation
289 ..Radiation sensitive chromium compound
290 .Light scattering or refractive index image formation
291 .Post imaging treatment with particles
292 .Readily visible image formation
293 ..Color proofing or multicolor image formation
294 ..By solvent removal
295 ..Making ornamental design
296 .Electron beam imaging
297 .Simultaneous radiation imaging and etching of substrate
298 .Simultaneous radiation imaging and deposition of material on substrate
299 .Simultaneous developing a resist image and etching a subtrate
300 .Making printing plate
301 ..Multicolor
302 ..Lithographic
303 ...Driography
304 ...Coating over colloid image and removal of colloid image to leave reversed image in coating, i.e., deep etch
305 ...Continuous tone or collotype
306 ..Relief
307 ..Intaglio or gravure
308 ..Stencil
309 ..Post imaging process
310 ...Including etching of substrate
311 .Making electrical device
312 ..Including multiple resist image formation
313 ..With formation of resist image, and etching of substrate or material deposition
314 ...Etching of substrate and material deposition
315 ...Material deposition only

IMAGING AFFECTING PHYSICAL PROPERTY OF RADIATION SENSITIVE MATERIAL, OR PRODUCING NONPLANAR OR PRINTING SURFACE - PROCESS, COMPOSITION, OR PRODUCT
.Making electrical device
..With formation of resist image, and etching of substrate or material deposition
316 ...Multiple etching of substrate
317 ...Insulative or nonmetallic dielectric etched
318 ...Metal etched
319 ..Named electrical device
320 .Making named article
321 ..Optical device
322 .Forming nonplanar surface
323 ..Including etching substrate
324 ..Including material deposition
325 ..Post image treatment to produce elevated pattern
326 ...Pattern elevated in radiation unexposed areas
327 .Processing feature prior to imaging
328 .Post imaging radiant energy exposure
329 .Removal of imaged layer
330 .Including heating
331 .Finishing or perfecting composition or product
332 DYE IMAGE FROM RADIATION SENSITIVE DYE OR DYE FORMER BY DRY PROCESSING, COMPOSITION, OR PRODUCT
333 .Multiple image formation, multiple image exposure, or simultaneous radiant energy exposure
334 .Positive image formation from radiation sensitive dye former
335 .Pretreatment processing before imaging, e.g., overall radiant energy exposure, etc.
336 .Developing latent image using radiant energy or heat
337 .Fixing or stabilizing image
338 .Composition or product
339 ..Radiation sensitive bleachable dyestuff
340 ..Identified sensitizer containing
341 ...Metal salt or complex
342 ...Sulfur compound
343 ...Heterocyclic
344 ...Halogen compound
345 ..Spiropyran dye or dye former
346 VISIBLE IMAGING USING RADIATION ONLY OTHER THAN HEATING BY SURFACE CONTACT OR CONVECTION
347 COMBINED
348 THERMOGRAPHIC PROCESS
349 .Heat applied before imaging
350 .Heat applied after imaging
351 ..Color development
352 ..During stabilization
353 ..During dry development
354 ...Including generation of vapor, moisture, etc.
355 ..During solvent development
356 ACHROMATIC IMAGE PRODUCED FROM CHROMATIC REPRODUCTION IMAGE
357 COLOR IMAGING PROCESS
358 .Color proofing
359 .Color correcting
360 ..Correcting by silver image
361 ..Correcting by color image produced by oxidizing bath treatment
362 ..Correcting by interimage effect
363 .Laser or radiation exposure other than visible light
364 .Forming combined chromatic and achromatic images
365 .Forming multicolor image in single layer
366 .Resensitizing
367 .Chromatic image produced from achromatic reproduction image
368 ..Blue or brown print forming
369 ..Viewing through either a colored filter or a colored light
370 ..Toning
371 .Mordanting
372 .Stabilizing
373 .Intensifying
374 .Using identified radiation sensitive composition in the formation of color image
375 ..Silver compound sensitizer
376 ...And coupler
377 ....And binder, coating aid, solvent, emulsifier, hardener, chemical sensitizer, or optical sensitizer
378 ....Direct positive process
379 .....Reversal process
380 ....And developer other than or in addition to p-phenylenediamine or derivative thereof
381 ....Polymeric or bis coupler
382 ....And either developing or dye inhibition
383 ....Forming multicolor image
384 ....Identified cyan dye color
385 .....Substituted at coupling position with other than hydrogen
386 ....Identified magenta dye color
387 .....Substituted at coupling position with other than hydrogen
388 ....Identified yellow dye color
389 .....Substituted at coupling position with other than hydrogen
390 ...And dye
391 ....Forming multicolor image
392 ....And dye catalyst
393 ...Silver bleach or bleach-fix
394 PLURAL EXPOSURE STEPS
395 USING REFLECTED RADIATION, E.G., REFLEX COPYING, ETC.
396 EFFECTING FRONTAL RADIATION MODIFICATION DURING EXPOSURE, E,G., SCREENING, MASKING, STENCILING, ETC.
397 .Involving motion during exposure, e.g., dodging, etc.
398 REGENERATING IMAGE PROCESSING COMPOSITION
399 .Developer
400 .Bleach-fix
401 POST IMAGING PROCESSING
402 .Achromatic image from organic compound
403 .With structural limitation
404 .Using web or gel
405 .Containing developer in element
406 .Positive
407 ..Reversal
408 ..Photosolubilization
409 ..Emulsions fogged during processing
410 ...Identified nucleating or fogging agent
411 ..Using fogged emulsion
412 ...Identified electron acceptor or desensitizer containing
413 .Physical developing
414 ..Amplifying
415 ..With processing ingredient in element
416 ..Silver halide as radiation sensitive medium

POST IMAGING PROCESSING
.Physical developing
417 ..Radiation reducible metal compound directly produces catalytic metal nuclei in image area
418 .Disparate function simultaneous process step
419 ..Develop-fix
420 ..Develop-harden
421 .Using plural sequential baths of same type
422 .Treating with processing composition prior to imaging and then developing
423 .Treating with processing composition after imaging prior to developing
424 ..Desensitizing
425 ..Sensitizing
426 ..Prehardening
427 .Treating with process composition between standard develop and fix-wash
428 .Stabilizing
429 ..Containing additive
430 .Bleaching
431 ..Using silver and dye bleach
432 .Including post developing step
433 .Developing in acid medium
434 .Developing
435 ..Using identified developer
436 ...Plural identified developers
437 ....Three or more identified developers
438 ....Containing hydroquinone
439 .....And amino substituted carbocyclic compound
440 ...Heterocyclic
441 ...Carbocyclic
442 ....Amino substituent on carbocyclic ring
443 ...Having developer releasing compound
444 ..Using polymer or condensation reaction product
445 ..Using mercapto or thione compound
446 ..Using heterocyclic compound
447 ..Using inorganic or organometallic complex
448 ..Using processing ingredient in element
449 NONRADIATION SENSITIVE IMAGE PROCESSING COMPOSITIONS OR PROCESS OF MAKING
450 .Process of preparing composition from plural preformed concentrates
451 .Hardener
452 ..Develop-harden
453 ..Fix-harden
454 .Shortstop
455 .Fixer
456 ..And developer
457 ...Forming dye image
458 ..Dry or concentrated
459 ..Plural fixers
460 ..And bleach
461 .Bleach or intensification
462 ..Dye bleach for color image
463 .Wash or aftertreat
464 .Developer
465 ..Solid or dry
466 ..Concentrated or viscosity increasing agent containing
467 ..Color developer
468 ...Additional developer containing
469 ...Including developing accelerator
470 ..Coupler containing
471 ...And additional reactive compound containing
472 ...Substituted at coupling position with other than hydrogen
473 ...Phenol or naphthol coupler
474 ...Pyrazolone coupler
475 ...Open-chain keto methylene coupler
476 ...Heterocyclic coupler
477 ..Reducible metal compound including reducing agent i.e., physical developer
478 ..Plural developer agents containing
479 ...Heavy metal organic or inorganic
480 ...Heterocyclic developer
481 ....And hydroquinone
482 ...Methyl-p-aminophenol and dihydroxy benzene
483 ..Heterocyclic developer
484 ..Amine developer
485 ..Hydroxy developer
486 ..Processing additive containing
487 ...Accelerator
488 ...Antisludgant
489 ...Antifoggant
490 ...Stabilizer-preservative
491 ...Sequestrant
492 ...Buffer
493 ...Surfactant, emulsifier, or solvent
494 INCLUDING EXPOSURE STEP OR SPECIFIED PRE-EXPOSURE STEP PERFECTING EXPOSURE
495 RADIATION SENSITIVE PRODUCT
496 .Structurally defined
497 ..With processing ingredient container or trap
498 ...Container or trap intended to remain in finished product
499 ...With feature to control spreading of processing ingredient
500 ...Roll film
501 ..Roll film
502 .Two or more radiation-sensitive layers containing other than that characterized by the composition of a single sensitive layer
503 ..Layers sensitive to different spectral regions
504 ...Ingredient for color compensation or correction containing
505 ...Developing inhibitor or processing ingredient containing
506 ...And containing plural layers sensitive to the same spectral region
507 ...Filter layer containing
508 ..Sensitive to portion only of visible spectrum or of widened spectral response
509 ..Sensitive layers differ in speed
510 .Antihalation or filter layer containing
511 ..Filters differing spectral regions in different areas of the filter, e.g., color screen
512 ..Filters ultraviolet radiation
513 ..Dissolvable or removable
514 ...Synthetic resin containing
515 ...Carbohydrate or derivative containing
516 ....Contains carboxyl groups
517 ..Organic dye or pigment containing
518 ...And mordant
519 ...Azo
520 ...Triarylmethane
521 ...Anthraquinone or quinhydrone
522 ...Intercyclic methine or azomethine and cyclic ring containing
523 .Identified backing or protective layer containing
524 ..Metal
525 ...And another backing layer other than aluminum oxide
526 ...Aluminum
527 ...Antistatic agent containing
528 ...Ammonium salt
529 ...Organic carboxylic, sulfur or phosphorus acid or salt

RADIATION SENSITIVE PRODUCT
.Identified backing or protective layer containing
..Antistatic agent containing
530 ...Elemental metal or metal salt
531 ..Synthetic resin or cellulose derivative containing
532 ...Subjected to radiation, flame, or corona discharge
533 ...Polyester or polycarbonate
534 ....Next to polymer of unsaturated monomer
535 .....Polymer of unsaturated ester or halide
536 ...Polymer of unsaturated monomer
537 ....In nonradiation-sensitive layer including gelatin
538 ..Fibrous, e.g., paper, textile, etc.
539 ..Gelatin other than radiation sensitive type
540 .Iron compound sensitizer containing
541 .Identified radiation sensitive composition with color producing substance
542 ..Silver compound sensitizer
543 ...Coupler containing
544 ....And development inhibitor or development inhibitor releasing agent
545 ....And identified binder
546 ....And solvent or emulsifier or coating aid
547 ....Direct positive
548 ....Polymeric or bis coupler
549 ....Mixture of couplers
550 ....And chemical or optical sensitizer
551 ....And antifoggant or color stabilizer
552 ....Phenol or naphthol coupler
553 .....Substituted at coupling position with other than hydrogen
554 ....2-pyrazolin-5-one coupler
555 .....Substituted at coupling position with other than hydrogen
556 ....Open chain keto- methylene coupler
557 .....Substituted at coupling position with other than hydrogen
558 ....Heterocyclic coupler
559 ...Dye containing
560 ....And optical sensitizer
561 ....Azo dye
562 .....Monoazo
563 .....Diazo
564 .Silver compound sensitizer containing
565 ..Achromatic image forming organic compound
566 ..Developing or fixing agent containing for liquid processing
567 ..Silver compound having specified crystal form, habit, particle size or particle size distribution
568 ...Having particle size of 100 millimicrons or less, e.g., Lippmann type, etc.
569 ..Including manipulative emulsification step
570 ..Spectral sensitizing
571 ...Mixed grain
572 ...Multiple sensitizers or supersensitizing
573 ....Polyheteronuclear sensitizer
574 ....Two or more cyanine sensitizers
575 ....Inorganic material containing
576 ....Cyanine sensitizer
577 .....Merocyanine compound
578 ...Polyhetero nuclear containing at least three hetero nuclei
579 ....Four or more distinct hetero nuclei
580 ...Styryl sensitizer
581 ...Cyanine sensitizer
582 ....Methine linked six-membered heterocyclic rings
583 ....Containing odd number of methine groups
584 .....Five or more methine groups
585 .....Three methine groups, i.e., carbocyanines
586 ......Linking six-membered hetero to five-membered hetero
587 ......Hetero ring bridged or fused to hetero ring
588 ......Hetero rings bridged or fused to carbocyclic rings
589 ....Direct positive
590 ......Only one hetero ring fused or bridged to carbocyclic ring
591 ...Two or more separate ring structures
592 ....Intercyclic methine chain sensitizer
593 .....Methine linked hetero ring with hetero group bridged or fused thereto
594 .....One or both methine linked rings carbocyclic
595 .....Odd number of carbons in acyclic methine chain
596 ..Fogged direct positive
597 ...Identified desensitizer or electron acceptor containing
598 ..Fogging or nucleating agent containing
599 ..Hypersensitizing or latensifying ingredient containing
600 ...Heterocyclic N, O, S, Se, or Te compound containing
601 ...Phosphorus compound
602 ...Polyoxyalkylene compound
603 ...S, Se, or Te or compound thereof
604 ...Heavy metal or compound thereof
605 ....Noble metal or compound thereof
606 ..Desensitizing ingredient containing
607 ..Stabilizing or fog inhibiting ingredient containing
608 ...Inorganic material
609 ...Synthetic organic polymer
610 ...Phosphorus compound
611 ...Mercaptan, thioether, thione, disulfide or organic bisulfite
612 ...Organic metal compound
613 ...Heterocyclic compound
614 ....Polyhetero atom ring
615 .....Polyhetero atom ring fused to another ring having polyhetero atoms
616 ..Composition for visible imaging by radiation only
617 ..Silver compound other than halide per se or composition for thermographic process
618 ...Organic silver compound containing
619 ....And inorganic silver compound
620 ....Silver salt of organic acid
621 ..Hardening ingredient containing
622 ...Vinylidene compound
623 ...Heterocyclic compound
624 ....Epoxide, i.e., oxirane
625 ....Aziridine
626 ....Triazine including hydrogenated triazine
627 ..Resin or synthetic polymer containing
628 ...Protein or other natural colloid or derivative containing
629 ...Sulfur or sulfur compound containing
630 ...Heterocyclic compound containing, e.g., heterocyclic monomer, etc.

RADIATION SENSITIVE PRODUCT
.Silver compound sensitizer containing
631 ..Film or film coating improvement ingredient containing, e.g., wetting agent, coating aid, plasticizer, antistatic agent, etc.
632 ...Rosin acid or derivative
633 ...Higher fatty acid or derivative
634 ...Polycarboxylic or polysulfoxy acid or derivative
635 ...Carboxylic acid or derivative
636 ...Sulfoxy compound or derivative
637 ...Polyglycidol, polyglycol, polyoxyalkylene oxide, or ether or ester thereof
638 ...Alkyl or cycloalkyl alcohol or ether or ester thereof
639 ..Carbohydrate or derivative containing
640 ...Gelatin or derivative containing
641 ...Cellulose or derivative, e.g., regenerated cellulose, etc.
642 ..Gelatin or derivative containing
643 ..Casein or derivative containing
644 MISCELLANEOUS
****
CROSS-REFERENCE ART COLLECTIONS
****
ELECTRIC OR MAGNETIC IMAGERY, E.G., XEROGRAPHY, ELECTROGRAPHY, MAGNETOGRAPHY, ETC., PROCESS, COMPOSITION, OR PRODUCT
900 .Donor-acceptor complex photoconductor
901 .Photoconductor powder
902 .Electrically charging radiation-conductive surface
903 .One component toner
904 .Polymer in developer
IMAGING AFFECTING PHYSICAL PROPERTY OR RADIATION SENSITIVE MATERIAL, OR PRODUCING NONPLANAR OR PRINTING SURFACE - PROCESS, COMPOSITION, OR PRODUCT
.Radiation sensitive composition or product or process of making
905 ..Binder containing
906 ...Polyamide or polyurethane
907 ...Polyolefin or halogen containing
908 ...Polyester
909 ...Vinyl alcohol polymer or derivative
910 ...Polymer of unsaturated acid or ester
911 ...Cellulosic
912 ...With plasticizer
913 ..Initiator containing
914 ...Cationic or anionic
915 ...Redox or dye sensitizer
916 ...Free radical
917 ...With inhibitor or stabilizer
918 ....Hydroxyl or carbonyl group containing as sole functional groups
919 ...Nitrogen compound containing
920 ....Nitrogen in heterocyclic ring
921 ...Sulfur compound containing
922 ....Sulfur in heterocyclic ring
923 ...Carbonyl compound containing
924 ....Carbonyl in heterocyclic compound
925 ...Halogen compound containing
926 ..Spectral sensitizer containing
927 ..Radiation-activated cross-linking agent containing
928 AERIAL FILMS OR PROCESSES SPECIFICALLY ADAPTED FOR AERIAL RADIAION IMAGERY
929 ANTIBRONZE AGENT OR PROCESS
930 ANTICURL LAYER
931 ANTI-ULTRAVIOLET FADING
932 BINDER-FREE EMULSION
933 BRIGHTENER CONTAINING
934 CINE FILM
935 COATING PROCESS MAKING RADIATION SENSITIVE ELEMENT
936 COBALT COMPLEX CONTAINING
937 CORONA DISCHARGE PROCESS
938 DEFECT COATING
939 DIMENSIONALLY STABLE MATERIAL
940 DIRECT POSITIVE MATERIAL
941 DYE MORDANT
942 ELECTRON BEAM
943 HYDROGEN PEROXIDE TREATMENT
944 INFRARED
945 LASER BEAM
946 LENTICULAR
947 LIGHT SENSITIVE TITANIUM COMPOUND CONTAINING
948 LIPPMANN
949 LITHOGRAPHIC EMULSION
950 MATTING OR OTHER SURFACE REFLECTIVITY ALTERING PROCESS OR MATERIAL
951 MAKING CAMERA COPY, E.G., MECHANICAL NEGATIVE, ETC.
952 MULTIPLE IMAGE PRODUCING ON SINGLE RECEIVER
953 NEUTRON BEAM
954 NONRESINOUS ADDITIVE TO PROMOTE INTERLAYER ADHESION IN ELEMENT
955 PRECURSOR COMPOUND
956 .Interlayer correction coupler (ICC)
957 .Development inhibitor releaser (DIR)
958 .Development dye releaser (DDR)
959 .Blocked developers
960 .Blocked restrainers
961 PROTECTIVE OR ANTIABRASION LAYER
962 RADIATION-CHROMIC COMPOUND
963 RAPID ACCESS PROCESSING
964 THERMAL IMAGING COMPOSITION
965 TONER CONTAINING
966 X-RAY
967 .X-ray exposure process

1 COMBUSTION BURSTS OR FLARE-UPS IN PULSES OR SERIAL PATTERN
2 PROCESS OF COMBUSTION OR BURNER OPERATION
3 .Decarbonizing, cleaning or purging
4 .Feeding flame modifying additive
5 .Burning waste gas, e.g., furnace gas, etc.
6 .Starting or shutdown procedure
7 .In a porous body or bed, e.g., surface combustion, etc.
8 .Flame shaping, or distributing components in combustion zone
9 ..Whirling, recycling material, or reversing flow in an enclosed flame zone
10 ..Oxidizer added to region of incomplete combustion
11 .Heating feed
12 .Controlling or proportioning feed
13 WITH INDICATOR OR INSPECTION MEANS
14 .Correlated with action of condition responsive burner control
15 ..Shutdown or aborted start attempt indicated
16 ...Responsive to gas leakage, overflow, abnormal pressure or electrical component malfunction
17 .Burner component position indicator
18 TIMER, PROGRAMMER, RETARDER OR CONDITION RESPONSIVE CONTROL
19 .Responsive to combustion chamber pressure
20 .Of or by exhaust damper or exhaust pump
21 .By combustion destructible element, e.g., fusible plug, etc.
22 .By sensing of gas leakage, flashback or escaped flame
23 .Of means protecting burner component from combustion heat
24 .With test circuit checking or analyzing flame sensing circuit for malfunction
25 ..Utilizing unidirectional electrical conducting effect of flame
26 ..Test circuit activated, then inactivated in starting
27 .Providing repeated start attempts prior to shutdown upon failure to establish combustion
28 .Actuation sequence of electric feed heater and feed flow controller or igniter
29 .Control of purger, of scavenger or of combustion start-up delay period
30 ..Of scavenging or purging pump
31 ...Scavenging or purging period started by combustion demand
32 .Of cleaning means
33 .Of extinguishing means
34 ..Wick cover actuated in response to tilting of burner
35 ..By candle length or fuel quantity
36 .Of or by burner feed supply heating structure
37 ..By controlling admittance of feed to structure
38 ...By pressure of feed in structure
39 ...By level of liquid feed in structure
40 ...By linear expansion of feed holder
41 ..Supply of heat to heating structure controlled
42 .Sensor of first burner controls second burner, e.g., pilot and main, etc.
43 ..With electrical igniter
44 ...Igniter deenergized by fuel pressure variation in start effort
45 ...Igniter deenergized by timer, programmer or retarder
46 ...Igniter deenergization responsive to first burner ignition
47 ...With manual igniter actuation
48 ..Sensor of second burner controls third burner
49 ..And an igniting burner for first burner
50 ..Sensing of flame at both burners required for continued operation of second burner
51 ..Both burners cut off upon sensed extinguishment of first burner
52 ...First burner manual reset valve cut off
53 ....Single valve cuts off branched flow
54 .....Reset includes structure preventing feed to second burner prior to sensed combustion at first burner
55 ....Burners independently controlled by reset valves
56 ...Having cut-off valve by-pass or additional supply to first burner
57 ..Manual reset of second burner required upon first burner extinguishment
58 ..Sensor controls diaphragm motor of second burner valve
59 ..Electrical or magnetic sensor controls second burner
60 .Of sequential operation of plural burners, e.g., pilot and main, etc.
61 ..By fuel feed pressure variation
62 .Of diverse feed or feed rate in starting, e.g., enriching fuel mixture in starting, etc.
63 ..Combustion sensor establishes "run" feed
64 .Level responsive means controls fuel level in wick pot or pot type burner
65 .Fuel feed cut off by collected fuel over-flow
66 .Sensor of electrical condition or temperature of electrical igniter controls fuel feed
67 .Igniter heat up and fuel feed sequence controlled by timer or retarder
68 .Sensing of hot combustion zone condition blocks restart attempt
69 .Shutdown by sensed absence of flame in proving period
70 ..Recycle through proving period on sensing of failure of established flame
71 ..Igniter cut off when flame establishment proved
72 .Of igniter and feed controlled sequence
73 ..By timer or retarder
74 ..Combustion zone sensor controls igniter
75 .By combustion or combustion zone sensor
76 ..Combustion product composition sensor
77 ..Of shutdown by response to sensed combustion failure or overheat
78 ...By electrical control circuit
79 ....Photoelectric sensor
80 ....Thermoelectric generator sensor
81 ...Manual setting means for biased valve released upon sensed combustion
82 ...With fuel feed means downstream of shutdown valve
83 ...Sensor movement losses means holding shutdown valve open against bias
84 ....Held by latch, latch released by sensor
85 .....Expanding fluid sensor
86 .By manually started timer or retarder, or by time of day device
87 ..Of combustion initiating means, e.g., match striker, etc.

TIMER, PROGRAMMER, RETARDER OR CONDITION RESPONSIVE CONTROL
88 .By tilting, jarring, or mechanical damage
89 .By condition of burner feed or feed means
90 ..Sensor of one feed controls another feed
91 PROJECTOR AND IGNITER FOR LIQUID OR GELLED FUEL SLUG OR ROD, E.G., FLAME THROWER, ETC.
357 ILLUMINATING FLASH DEVICE, E.G., PHOTOGRAPHIC BULB, ETC.
358 .Fuel charge within sealed transparent casing, e.g., bulb
359 ..Plurality of bulbs associated for sequential ignition
360 ..Coated casing
361 ..Percussive ignition means ignites charge
362 ..Electrically ignited primer ignites charge
363 .Having fuel charge feeding means
364 .Having protective shield
365 .Electrical means ignites charge
99 MAGNESIUM STRIP
100 INCANDESCENT MANTLE
101 .Resiliently supported
102 .Wick feeds vapor to mantle
103 .Heated feed line section
104 ..Discrete flame holder heats section, e.g., auxiliary jet, etc.
105 ..Within mantle
106 ..Above upwardly fed mantle
107 ..Heated by downwardly fed mantle
108 .Distinct means increases pressure at mantle
109 .Depends below downwardly facing fuel discharger
110 .Supported above upwardly facing fuel discharger
111 .Supporting or protecting means external of mantle
112 ..Extending within mantle
113 ..On upwardly opening mantle
114 WITH MEANS ATTENUATING SOUND OR PULSATION
115 COMBUSTION PRODUCTS RETURN STRUCTURE
116 .Recirculation about mixing or combustion chamber wall or baffle
117 WITH EXTERNAL DRAIN FOR SURPLUS LIQUID FUEL DISCHARGED INTO VAPORIZATION OR COMBUSTION ZONE
118 .Drained collecting basin spaced from zone
119 WITH DRIP OR LEAKAGE COLLECTOR
120 WITH WICK TRIMMING, TREATING, INSERTING, OR REMOVING MEANS
121 WITH APPARATUS CLEANING, PURGING OR SCAVENGING MEANS
122 .Scraping or clearing member
123 ..Feed orifice penetrating
124 WITH RESERVE FLINT HOLDER
125 WITH SIMULATION FEATURE
126 WITH ORNAMENTATION OR FLAME COLORING ADDITIVE
127 BURNER ASSEMBLY INCLUDES IGNITER ELEMENT AND REMOVABLE HAND MANIPULATABLE TORCH
128 .Electrical igniter
129 BURNER HEAD COVER OPERATIVELY INTERRELATED WITH IGNITER
130 .Interconnected with valve in fuel feed passage
131 ..By movably mounted burner nozzle
132 .Electrical igniter
133 .Solid ignition charge dispenser and striker
134 .Actuation of ignition member releases biased open cover
135 .Cover, latched closed, biased open; igniter actuated on release
136 ..Abrasive wheel moves with cover about a common axis
137 .Cover actuator cocks and releases abrasive member drive
138 .Common axis for cover and abrasive wheel
139 ..Actuator (e.g., finger piece) engaged with cover for relative movement
140 ...Gear drive between cover and actuator
141 .One way drive means between cover and abrasive wheel
142 BURNER HEAD OR IGNITER REMOVABLY SECURED TO FUEL TANK BY ENCIRCLING FRAME OR CASING
143 .Burner head on tank and igniter on frame or casing
144 BURNER CAP, COVER OR EXTINGUISHER
145 .Fluid
146 .Movably or removably mounted cover for flame holder
147 ..Cover bars oxidizer from catalyst
148 ..Connected to lamp chimney or its support
149 ..And distinct snuffer within cover
150 ..Cover operatively interconnected with feed controller or feed pump
151 ..And windshield within covered zone
152 ..Pivotally mounted
153 CORRELATION OF FUEL OR POWER SUPPLY WITH COMPONENT MOVEMENTS IN A DISABLING AND ENABLING SEQUENCE
154 WITH REPAIR, ASSEMBLY OR DISASSEMBLY ADJUNCT
155 .Slide or roller
156 CONVERTIBLE
157 MEANS AT CHAMBER OUTLET ESTABLISHING COMBUSTION PRESSURE DISTINCT FROM AMBIENT
158 .Chamber outlet forms jet nozzle
159 FUEL DISPERSER INSTALLED IN FURNACE
160 .Disperser cooled by fluid additional to furnace feed
161 .Furnace heated feed line section
162 ..Distinct sections feeding disparate fluids to furnace
163 ..Section feeds steam to disperser
164 ..Section feeds oxidizer through furnace wall opening spaced from that for disperser
165 ...Oxidizer fed at spaced points along combustion path
166 ..Section feeds oxidizer to disperser or through disperser furnace wall opening
167 ...Section is furnace wall cavity leading to disperser
168 .Rotary disperser projects at surrounding flange surface
169 ..Mixing ring or group of deflectors overhangs flange surface
170 .Disperser feeds into permeable mass, e.g., checkerwork, etc.
171 .With discrete flame directing baffle
172 ..Baffle means forms flame ring around combustion chamber
173 .Feed projected tangential to wall of circular combustion chamber
174 .Spaced fuel dispersing orifices within furnace
175 ..Intersecting fuel streams
176 ...Opposed rows of streams of radially directed streams in a common plane

	FUEL DISPERSER INSTALLED IN FURNACE
	.Spaced fuel dispersing orifices within furnace
177	..Annular arrangement with fuel directed on surrounding combustion chamber wall
178	..Row with parallel discharge through combustion chamber wall
179	...Longitudinally adjacent rows
180	..Row across combustion chamber
181	.Plural feed means extending to common wall opening of furnace
182	..Duct with air whirling means surrounds disperser
183	...Row of stationary blades coaxial with disperser whirls air
184	....Pivotally adjustable blades
185	..Feed whirling means at wall
186	..Shiftably mounted disperser; or flame shaper
187	..Feeds discharged coaxially
188	...Air chamber with inlet control surrounds disperser at wall
189	.Disperser adjustably mounted for movement relative to furnace wall opening
190	.Water, air or steam feeder spaced from disperser
191	BURNER IGNITED BY FLASH FLAME THROUGH CONDUIT
192	.Conduit feed means spaced from ignited burner
193	.Unique burner manifold orifice feeds conduit
194	..Nipple forms orifice and anchors conduit
195	FUEL DISTRIBUTOR UNDERLYING COMBUSTION ANNULUS HAVING AIR FEEDING PERFORATIONS
196	.With pilot burner, primer, or electric combustion starter
197	.Annulus movably mounted for access to distributor
198	.Distributor annulus feeds combustion annulus through coaxial throat or row of orifices
199	.Distributor receives heated fuel from annulus heated line section
200	.Coaxial combustion chambers with intermediate air space
201	.Structure surrounding annulus guides combustion air to perforations
202	STRUCTURAL INSTALLATION
203	FLAME HOLDER MOUNTED ON HEATED SINGLE CHARGE FUEL TANK
204	.Fuel jet from heated tank traverses wick burner
205	.Priming cup heats tank
206	.Having heat conductor between spaced flame holder and tank
207	HEATED LINE SECTION FEEDS FLAME HOLDER
208	.Electrically heated section
209	.Section and its heat source mounted for relative movement, e.g., to vary thermal effect, etc.
210	.Heated section supplied by separate diverse feeds, e.g., water and fuel, etc.
211	..One feed heated before being fed to section
212	...Another feed heated before being fed to section
213	.Air from section discharged downwardly toward fuel surface
214	..Fuel surface is film descending from elevated structure
215	.Distinct exhaust products line heats feed line
216	.Lines for diverse feeds heated
217	..With mixing upstream of combustion zone
218	.Basin for burning liquid fuel heats feed line section
219	..Heated line feeds steam to fuel basin area
220	..Separate basin and flame holder fuel lines
221	...Valved branch of flame holder feed line feeds basin
222	..Basin receives fuel from terminus of heated fuel line
223	...With selective deflector directing fuel to basin
224	...Horizontally extending cavity of basin forms heated section
225	...Basin mounted on valve housing
226	...Heated fuel drum above basin
227	...Basin encompasses vertical heated line section
228	....Line passes through basin to surrounding, descending discharge structure
229	....Elongated basin parallel to fuel line
230	.Auxiliary burner heats wick within heated section
231	.Fuel container having means feeding gas to a separate line heating burner and liquid to heated section
232	.Section heated by distinct flame holders, one fed by heated section
233	.Heated line supplies its heater and an external structure, e.g., flame holder
234	..One of a group of similar burners heats section
235	..Heated line supplies generated gas to main of distributing system
236	.Section heated by auxiliary burner
237	..Main fuel line branch feeds auxiliary burner
238	.Unheated fuel supply to flame holder
239	..Heated feed aspirates or atomizes fuel
240	.Insert in heated fuel line, e.g., packing, etc.
241	..Lifts fuel from tank to heated section by capillary action
242	.Housing encloses heated section and flame area
243	.Flame enclosure comprises, or conducts heat to heated section
244	.Discrete jet section of flame holder heats its fuel line
245	.Unheated oxidizer supply to line between heated section and feed discharger
246	..Feed discharger wall cavity forms heated section
247	.Fuel conduit within flame or combustion products zone
248	..Distinct baffle directs flame at or around conduit
249	WITH FEATURE FOR ACCESS TO OR EXPOSURE OF FLAME HOLDER
250	.With match scratching surface within enclosure
251	.Enclosure movably mounted for access
252	WITH ADJUNCTIVE MEANS TO EXTEND OR DEFLECT FLAME BY AIR BLAST OR ASPIRATION
253	COMBINED
254	ELECTRICAL OR MECHANICAL IGNITER CORRELATED WITH BURNER FEED
255	.Having electric current producer
256	.Switch or electrode of igniter moved by valve element or operator

ELECTRICAL OR MECHANICAL IGNITER CORRELATED WITH BURNER FEED
.Switch or electrode of igniter moved by valve element or operator
257 ..Make and break electrode moved
258 BURNER HAVING ELECTRICAL HEATER OR IGNITER
259 .Igniter and separate heater
260 .Adjacent exposed liquid fuel surface on fuel support
261 ..Capillary fuel holder
262 ...Resistance type heater or igniter
263 .Igniter in shelter chamber
264 .Spark electrode in front of or adjacent fuel discharger
265 ..Gun type burner with electrode supported in air blast conduit
266 ..Spark circuit includes feed terminus
267 FRICTIONAL, CHEMICAL OR PERCUSSIVE TYPE IGNITER
268 .Catalytic
269 .Cap, match or pellet igniting charge holding and firing means
270 ..Externally accessible operator fires charge within flame enclosure
271 ..Plural charge holder with presenting structure
272 ...Serially connected charges
273 .Spark projecter, e.g., flint and abrasive striker, etc.
274 ..Mechanical movement operated abrasive member
275 ...Stored energy actuated; detent, latch or overcenter release
276 ..Advancing type flint holder
277 ..Mounted on fuel tank adjacent flame holder
278 SEPARATELY SUPPLIED OR CONTROLLED, PHYSICALLY RELATED FLAME HOLDERS, E.G., DIVERSE FUELS, PILOT AND MAIN, ETC.
279 .Relatively movable
280 .By multiway valve
281 .Correlated controls
282 .Adjustable wick
283 .Three mounted in cross igniting relationship
284 .Coaxial
285 .Having common flame chamber or shield means
286 DISCRETE MEANS TRANSMITTING FLAME BETWEEN SEPARATE FLAME HOLDING SECTIONS
287 HAVING COMBUSTION STARTING ASSISTANT
288 CANDLE, E.G., TAPER, ETC.
289 .Having structure additional to wax and wick
290 ..Height adjuster or maintained flame level
291 ..Fuel body totally within casing, e.g., vigil light, etc.
292 ..Melt handler or receiver
293 ...Follower cap
294 ...Drained or openwork candle grip mounted on melt receiver
295 ..Holder for plural candles
296 ..Hook, clamp or spike supported candle holder
297 ..Candle mounting attachment for socket type support
298 FIBROUS WICK TYPE FLAME HOLDER
299 .Having feeder or holder for disparate fluid
300 .Means forcing air into flame area
301 .Wick movement limiting structure
302 .Tubular wick having central supporting and air supplying structure
303 ..Having lateral air inlet passage through wick
304 ..Having wick raiser
305 ...Screw thread on wick carrier
306 ...Rotatable threaded rod and follower
307 ...Rack and pinion
308 ...Reciprocated bar
309 ..Having air guide or distributor
310 .Having air or flame director, air distributor, or windguard
311 ..Transparent director surrounding wick support or guide
312 ..Director passageways, each surrounding wick or flame zone
313 ..Director passageways leading to flame zone
314 ..Air annulus leads to flame zone
315 .Having adjustable wick exposure, position, or porosity setting structure
316 ..Rotatable projection means engages wick
317 ...Transmission mechanism rotates means
318 ...Opposed rotatable wick engaging means
319 .Having distinct fuel line between reservoir and wick guide or support means
320 .Liquid fuel container carries wick guide or support
321 ..Having distinct container filling or venting structure
322 ..Means supporting displaced wick guide or support on fuel container
323 ..Having absorbing, baffling or additional wick supporting structure in container
324 ..Detachable closure securing guide to container
325 .Coated, impregnated, layered, coupled or reinforced wick
326 POROUS, CAPILLARY, PARTICULATE OR SIEVELIKE FLAME HOLDER, E.G., RADIANT SURFACE BURNER, ETC.
327 .Capillary mass having handle
328 .Means supplying fuel for passage through the flame holding structure, e.g., radiant surface burner
329 ..Woven screen holds flame
330 DRIP, TRICKLER, OR SHELF-TO-SHELF TYPE BURNER
331 POT TYPE BURNER
332 .Having feeder or holder for disparate fluid
333 .Having means for continuously feeding fuel
334 ..With pot or fuel reservoir elevating means
335 ..Air feed passage through bottom of pot
336 ..Ring structure at pot outlet forms central vertical discharge throat
337 ...Structure includes radial air feed passages discharging at throat
338 ..Having baffling means within pot confines
339 ...Forms separate zones of combustion at fuel surface
340 ...Horizontally extending partition having central passage
341 .Including exhaust flue having air feed passages
342 ..And baffling means within pot
343 WITH SUPPORTING BRACKET, LEG, HOOK, STRAP OR CLIP
344 FLAME HOLDER AND FUEL TANK ASSEMBLY
345 FLAME HOLDER HAVING ATTACHED HANDLE
346 FLASH-BACK CONTROLLING OR PREVENTING STRUCTURE

347 INCANDESCING OR REFLECTING COMPONENT, E.G., REIGNITING HOT SPOT, ETC.
348 .Flame sweeps dished incandescing surface
349 ADJUNCTIVE, RELATIVELY LOW VELOCITY, FLAME MAINTAINING FUEL PASSAGE
350 FLAME HOLDER HAVING PROTECTIVE FLAME ENCLOSING OR FLAME STABILIZING STRUCTURE
351 .Including means feeding air axially spaced points of the flame
352 ..Axial perforations along combustion tube
353 .Tubular member delineates flame
354 MIXER AND FLAME HOLDER
355 .Bunsen burner type
356 MISCELLANEOUS

1 PROCESSES OF HEATING OR HEATER OPERATION
2 .Including apparatus purging, cleaning or accretion preventing
3 .Including repairing, converting or assembling apparatus
4 .Including apparatus heat-up, cool-down or protection
5 .Including preparing or arranging work for heating
6 ..Stacking or aligning objects
7 ..Forming a permeable layer or sheet
8 .Continous strip, strand or web passed longitudinally through heating zone
9 .Treating an article, container, batch or body as a unit
10 ..Localized treating or shielding of work area
11 ..Moving unit through or within treating zone during treating
12 ..Modulating, varying or augmenting heat supply during heat-up period
13 .Including melting, vaporizing, sintering, expanding comminuting, or classifying work material
14 .Including passing, treating or conveying gas into or through particulate work
15 ..Including maintenance of fluidized bed
16 ..Including a dust control or particle separation step
17 ..Including modulation of flow rate of gas or treated material
18 .Subjecting work to diverse treatments or graduated temperatures
19 .Controlling flame position or work atmosphere
20 ..Providing flame or high luminosity
21 ..Including recycling work atmosphere
22 ..Establishing strata, layer or curtain
23 ..Establishing or maintaining composition of atmosphere bathing work
24 ..Modulating or stabilizing pressure or temperature
25 ..Providing pulsed or periodically reversed atmosphere
26 ..By mode of admission of treating or protecting fluid
27 .Including the flowing or circulating of particulate heat carrier
28 .Of operating a furnace utilizing a heat storage mass
29 .Of heating a fluid
30 ..Utilizing a heat storage mass
31 .Heating of or by wall or radiant surface
32 WITH INDICATOR, ILLUMINATOR OR INSPECTION MEANS
33 ARTICLE OR TEMPLATE FOLLOWER POSITIONS HEATING ELEMENT RELATIVE TO ARTICLE
34 HAVING OPERATING OR CONTROLLING DEVICE RESPONDING TO PRESENCE OF DISCRETE WORK UNIT OR REMOVABLE UNIT HOLDER
35 FRANGIBLE OR FUSIBLE SAFETY RELIEF OR SHUTDOWN MEANS
36 HAVING CONDITION RESPONSIVE CONTROL
37 .Analyzer or composition sensor of work, work atmosphere or exhaust gas
38 .Control of or response to apparatus protecting fluid or means
39 .Of selection or load balancing of furnace exhaust heated regenerators
40 .Of hot blast stove (i.e., of Cowper stove)
41 .Of purger, purge period, scavenger or cleaner
42 .Of protective work shield, cooler or atmosphere; or of heat applicator position
43 .Of discharging, or stopping the heating of a unit or batch on sensed completion of heating
44 ..With cool-down timer or means
45 .Of or by means sensing or controlling work movement, quantity or position
46 .Condition responsive shutdown requiring reset
47 .Of or by pressure of fluid work or work chamber atmosphere
48 .Of cooling, dilution, withdrawal, bypass or circulation of work chamber atmosphere
49 .Of or by heat generation or transmission
50 WITH PROTECTOR, CLEANER OR SUPPORT FOR CONDITION SENSOR
51 HAVING TIMING, PROGRAMMING OR CYCLING CONTROL MEANS
52 .Of handling or treatment of discrete work batch or unit
53 ..And of furnace closure or heating element operator
54 WITH INTERLOCKED, INTERCONNECTED OR MULTIWAY CONTROLLER ALTERNATING FLOW OF HEATED AND HEATING FLUID
55 WITH CONCURRENT CONTROL OR INTER-CONTROL OF DIVERSE OPERABLE ELEMENTS
56 .Door or baffle movement correlated with work movement or placement
57 .Heating gas supply, removal or recirculation correlated with work or door movement or placement
58 WITH HEATING GAS CONVEYING, AGITATING, SCATTERING OR DISINTEGRATION OF WORK (E.G., FLUIDIZED BED, ETC.)
59 ADVANCING STRUCTURE FLEXING, LOOPING OR COILING SHEET, WEB OR STRAND
60 .Internally heated roll
61 WITH LUMP BREAKER OR CLASSIFIER FOR PARTICULATE WORK MATERIAL
62 GEOGRAPHIC OR STRUCTURAL INSTALLATION
63 .Installed on internal combustion engine element
64 HAVING FLUID CURTAIN AT CHAMBER PORT OR WORK PATH
65 WITH HEAT SHIELD, OR ESCAPING GAS COLLECTOR AT FURNACE CHAMBER ACCESS AREA
66 WITH CONDENSER OR ABSORBER FOR WORK CHAMBER VAPOR
67 WITH MEANS SEPARATING SOLID PARTICLES OR SLAG FROM WORK CHAMBER GAS
68 .Separator discharges gas to work zone
69 .With means passing separated solid to heating zone
70 .At regenerator or recuperator (e.g., slag pocket, etc.)
71 ..With separated solid discharge structure
72 WITH MEANS DILUTING, PURIFYING OR BURNING EXHAUST GASES
73 COMBUSTION PRODUCTS, FLUE OR GENERATOR AND WORK CHAMBER MOUNTED FOR RELATIVE MOVEMENT FOR ACCESS
74 WITH DRIP, LEAKAGE, BREAKAGE OR SOIL COLLECTING STRUCTURE
75 WITH CLEANING MEANS FOR APPARATUS
76 WITH APPARATUS REPAIR OR ASSEMBLY MEANS
77 WITH WORK COOLING STRUCTURE
78 .Combustion feed air cools exiting work by contact
79 ..Contact at discharge end section of shaft furnace
80 ..Work manipulated in cooling zone

	WITH WORK COOLING STRUCTURE
81	.Work holder having selectively usable heating and cooling structure
82	.Entering and leaving work exchange heat
83	.Work heat removed through heat transmitting wall
84	..Combustion feed material cools wall
85	.Cooling liquid contacts work
86	WITH MEANS RECEIVING WORK FROM WORK HEATING ZONE DISCHARGE MEANS
87	WITH MEANS SUPPLYING WORK TO WORK FEEDER
88	WITH WHEEL, HANDLE, OR SKID-TYPE SUPPORT FOR HEATER ASSEMBLY
89	CONVERTIBLE
90	BOILER AND WORK HEATING FURNACE, POT OR OVEN
91	.Having means utilizing generated steam in heating work
92	COMBINED
93	HAVING WORK HEATING CHAMBER AND OPEN ACCESS WORK SUPPORTING AND HEATING AND HEATING STRUCTURE OUTSIDE OF CHAMBER
94	DISPARATE HEAT SOURCES OR FUELS
95	SHAFT TYPE
96	.Having combustion products generated in or fed to shaft
97	..Having flow controller restraining solid and passing melt
98	..Having agitator or movably mounted baffle for shaft or shaft outlet
99	..Having vertically spaced gas supply ports
100	..Having distinct fume outlet and work inlet
101	..Having distinct combustion products generator chamber
102	.Having heat emitting tube or flue within or traversing shaft chamber
103	TUMBLER-TYPE ROTARY - DRUM FURNACE
104	.Having support for engaging heated surface of domestic stove
105	.Having combustion products generated in or fed to drum
106	..Including plural, distinct serially connected work chambers
107	..And having externally heated drum surface or indirect heating flue
108	..Work advancing type (e.g., steady flow of work)
109	...Axially spaced feed to drum of combustion or reaction material
110	...Structure providing different rates of heating or work movement along axis
111	...Counterflow of work and combustion products
112	.Externally heated drum or associated heating element heats work by conduction or radiation
113	..And having distinct atmosphere supply or removal structure
114	..Heat emitter is tube within the drum chamber or the drum wall
115	.Having flexible, cooled, or air curtain seal between rotary and stationary parts
116	.Having protective cooling structure
117	.Having work or work atmosphere feed or discharge structure
118	.Having structure agitating or controlling the motion of the charge
119	.Having brick-type lining
120	WORK CHAMBER HAVING HEATING MEANS
121	.Having means by which work is progressed or moved mechanically
122	..Having manipulating means arranging, orienting, segregating or topically heating individual unit
123	...Handler outside of chamber supports unit partially within and partially outside of furnace chamber
124	...Having structure rotating, reorienting, or inverting unit during heating
125	...Vertical stack or mutually supporting units having thrust means
126	...Thrust means advances row or stack of units
127	....Having structure for removing skid marks
128	..Plural distinct chambers
129	...Work moved to drop between shelf or trough-type chambers
130	....Combustion products generated in or fed to chamber
131	.....Annular shelves and rotary pusher on central vertical axis
132	....Heated shelf or trough
133	...Having combustion products generated in or fed to work chamber
134	..Vibrating or jarring-type work advancer
135	..Traveling heat emitter carries or stirs work
136	..Combustion products generated in or fed to chamber
137	...Movable chamber floor section carried by external guide or axle
138	....Rotary section
139	...Plough, rake, screw, or stirrer means
140	....Moved by endless carrier
141	...Rotatably mounted work carrier (e.g., Ferris wheel type, etc.)
142	....Horizontal shelf on vertical axis
143	...Having means forming work path from inlet to outlet
144	....Having structure circulating work atmosphere along or across path
145	.....Distinct blowers or blower discharge ports along path
146	....Plural burners longitudinal spaced in path
147	.....Radiant type
148	....Baffle, heat radiator, or heating flue in chamber along path
149	....Combustion material supply ports spaced along path
150	....Spaced combustion products exhaust ports
151	..Stirrer in externally heated tank
152	..Having distinct atmosphere supply, removal or recirculation structure
153	..Work or work carrier slides on heated chamber wall or floor
154	...Screw-type pusher
155	..Chamber heated by multiple combustion products flues
156	.Crucible or pot heating furnace
157	..Having tilting arrangement
158	..Pot stand forms annular combustion material admission zone
159	.Combustion products heat work by contact
160	..Furnace or work holder of furnace mounted for tilting discharge
161	..Having separator of flow director for melted work
162	..Having shelf, rack, tray or chamber on guide or pivot
163	..Plural structurally related work chambers
164	...Connected for serial flow of combustion products
165	....Having serially connected regenerator
166	....Chambers spatially separated

	WORK CHAMBER HAVING HEATING MEANS
	.Combustion products heat work by contact
	..Plural structurally related work chambers
	...Connected for serial flow of combustion products
167	....Having temporary partition
168	....Through perforated floor
169	....Through perforated partition
170	....Having branch connection to common flue
171	...Diverse atmospheres (e.g., directly and indirectly heated, etc.)
172	...Fed with combustion products from a common generator
173	..Having protective cooling means for combustion material feed structure
174	..Including noncommunicating combustion products flue
175	..Radiant-type burner in or on wall (e.g., surface combustion, etc.)
176	..Having exhaust return passage or recirculating fan or jet
177	..Chamber exhaust transfers heat with chamber wall
178	..Work chamber or its wall heats chamber feed
179	..Work chamber exhaust heats chamber feed
180	...By regenerative-type heat exchanger
181	....Spaced alternating or successive chamber exhausts feed plural regenerators
182	.....Regenerators heat fuel
183	..For annular article (e.g., wheel rim, etc.)
184	..Article inserted type
185	..Dividing baffle or screen in cabinet forms upper work and lower burner chambers
186	..Distinct combustion chamber feeds work chamber
187	...Having additional feed means diluting combustion products
188	...Work chamber indirectly heating by common wall or connecting flue
189	...Having pump or jet means forcing air into combustion chamber
190	...Distinct vertically spaced combustion products feed openings to work chamber
191	...Plural distinct combustion chambers feed single work chamber
192	...Multiple perforate wall, floor or roof for combustion feed or exit
193	..Spaced exhaust ports from work chamber
194	..Baffle, shield, heat absorber, work support or flow directing means in work chamber
195	..Hearth-type or tank-type furnace
196	..Spaced fuel or air feeds to work chamber
197	.Having particulate or liquid heat transfer medium in work chamber
198	.Means supplying a protective or treating agent other than or additional to air
199	.Having work atmosphere recirculating means
200	.Work chamber having gaseous material supply or removal structure
201	..Air flow-through type
202	...Having means heating work by radiation or conduction
203	...Pump for atmosphere
204	...Having a movable drawer or separable tray
205	..Having pump, jet or valve means establishing chamber pressure distinct from ambient
206	.Interior bell forms muffle
207	.Plural structurally related work heating chambers
208	..Chambers are movably or removably mounted retorts
209	.Heating tube, element, or flue traverses work space
210	.Externally heated, liquid holding type of work container
211	..Mounted for pouring discharge
212	.Tortuous, branched or baffled heating flue means within or along chamber wall
213	..Having distinct burner units
214	HEAT GENERATING MEANS HEATS HEAT STORAGE MASS OF SOLID MATERIAL
215	.Mass is solid fluent heat carrier (e.g., pebbles, etc.)
216	.Interconnected separately encased masses
217	.Dividing wall in casing forms combustion and heat storage chambers
218	..Annular divider forms concentric chambers
219	HEAT GENERATOR HEATS GAS OR LIQUID MATERIAL IN A FLOW STRUCTURE
220	.With pump for the material driven by energy from the heat generator
221	.With means utilizing the heated material for heating work
222	.Material heated by mixing with combustion products of generator
223	..Having means for indirectly exchanging heat between combustion products and material
224	INSERTED EMITTER TYPE OF HOLLOW ARTICLE INTERIOR HEATER
225	HEAT APPLICATOR HAVING STRUCTURE FOR MOUNTING IT ON OR AROUND OBJECT TO BE HEATED
226	HAVING MASK, BAFFLE OR CONDUCTOR CONCENTRATING HEAT ON OR PROTECTING SECTION OF ARTICLE
227	HEAT GENERATOR WITH AN ASSOCIATED WORK SUPPORT OR HEAT DELIVERY STRUCTURE
228	.Internally heated roll
229	.Movably mounted heat emitter traverses work during heating
230	.Means moving or guiding work relative to heat emitter during heating
231	.Article engaging and retaining support fixes position of article relative to heat emitter
232	.Horizontal, planar, openwork, work support above burner
233	HEATING APPARATUS ELEMENT HAVING PROTECTIVE COOLING STRUCTURE
234	.Work skid or rail structure
235	.Conveyor, chute or work agitator element
236	..Roll
237	.Door, cover, door frame or rim of cover
238	.Wall, floor or roof element
239	WORK FEEDING, AGITATING, DISCHARGING OR CONVEYING SUBCOMBINATION
240	.Having support for engaging surface of domestic stove
241	.Removable furnace bottom section or kiln cart
242	.Having closure or seal for work feeder's entrance passage
243	.Outside conveyor track paralleled by chamber wall slot for conveyor arm
244	.Seal at chamber wall for conveyor arm or shaft

	WORK FEEDING, AGITATING, DISCHARGING OR CONVEYING SUBCOMBINATION
245	.Having distinct heat shield, conductor, director or expansion relief structure
246	.Roll-type conveyor element
247	HEATING OR HEAT RETAINING WORK CHAMBER STRUCTURE
248	.Protected, lined or reinforced melt holding section
249	.Including baffle wall, work shield, or work support element
250	.Door, cover or port
251	.Having expansion relieving or absorbing means
252	.Masonry with metallic casing or support
253	ACCESSORY MEANS FOR HOLDING, SHIELDING OR SUPPORTING WORK WITHIN FURNACE
254.1	.Fluid tight metallic heat transferring box, shield or hood
254.2	..Bell-type hood or support for such hood
258	.Support structure for heat treating ceramics (e.g., saggars, etc.)
259	..Point or line contact support
260	.For annular work (e.g., coil separator, etc.)
261	.Openwork tray, basket, or grid structure for heat treating metal
262	.Crucible
263	..Having dispensing opening or spout
264	..Lined, layered or coated
265	..Of particular material
266	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTION
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500	TOBACCO BARNS

CLASS 433 DENTISTRY

DECEMBER 1990

1	VETERINARY DENTISTRY
2	ORTHODONTICS
3	.Tool
4	..Plier type
5	.Including extra-oral force transmitting means
6	.By mouthpiece-type retainer
7	.By device having means to apply outwardly directed force (e.g., expander)
8	.Bracket
9	..Cemented to tooth
10	..Having means to secure arch wire
11	...Resiliently biased clamping member
12	...Tension adjustment nut
13	...Separable securing means
14	....Lock pin
15	....Ligature wire
16	..Having adjustable or angular arch wire guide
17	..Having arch wire enclosing guide (e.g., buccal tube)
18	.Means to transmit or apply force to tooth
19	..Acting between upper and lower teeth
20	..Arch wire
21	..Metallic spring
22	.Arch wire attachment
23	.Band
24	.Method of positioning or aligning teeth
25	APPARATUS
26	.Tooth selection guide
27	.having condition sensor to transmit signal to regulate indicating device or controller
28	..Switch or valve controlled by presence of device on support
29	.Having means to emit radiation or facilitate viewing of the work
30	..Mirror
31	...Combined with other device
32	.Having heater or electrode
33	.Having support for patient or operator
34	.Having static product shaping surface (e.g., mold)
35	..Having cooling means
36	..Having settable material dispenser or fill openings
37	..Intra-oral
38	...Comprising frame and flexible bib
39	...Deformable or flexible band (e.g., matrix)
40	...Single tooth
41	...Adjustable
42	....Upper section relative to lower section
43	....Pivotally connected sections
44	...Having positioning means or gauge
45	...Having means to facilitate assembly or disassembly
46	....Detachable handle
47	...Including release facilitating means
48	...Mold material
49	.Work support
50	..Including tool, marker, or coupling means therefor
51	...Abrading tool or cutter
52	..Including motor or power transmitting means
53	..Including means to support plural workpieces for relative movement
54	...Articulator or attachment therefor
55	....Having visual indicator or recorder
56	....Including gauge or means for removably mounting gauge on support
57	....Including hinge having parts which cooperate in a manner allowing relative movement
58	.....And resiliently biased
59	....Including adjustable incisal guide
60	....Including means to secure workpiece or articulator
61	....Having pivot and additional adjustment between workpiece supporting means
62	.....Additional pivot
63	......Rectilinear adjustment
64	......Ball-and-socket
65	.....Rectilinear adjustment only between supporting means and pivot
66	....Having lock or adjustable stop for pivoted work holder
67	.....Workpiece supporting means between adjustable stop and pivot
68	.Having means to record or indicate jaw movement or position or dental occlusion
69	..Jaw movement
70	..By transfer of material to teeth
71	..By deformation of material
72	.Having gauge or guide
73	..Condylar referencing means (i.e., face bow)
74	..Dowel pin or positioner therefor
75	..Having tool, marker, or coupling or guiding means therefor
76	...Parallel drilling
77	.Having storage or nonuse supporting means (e.g., tray, rack, cabinet, etc.)
78	..Including hose retractor
79	..Movably mounter tray or holder
80	.Having intra-oral dispensing means
81	..Endodontic
82	..Combined with or attachment for work contacting tool or handpiece therefor
83	...Having means to compact dispensed material
84	...Power-driven tool having fluid control valve for dispensed material
85	....On or adjacent handpiece or handle
86	...Ultrasonic tool
87	...Dispenser externally mounted on tool or handpiece
88	..Dispensed material discharged by fluid current
89	..Hand-held implement with material supply
90	...Single charge device having plunger-type ejector
91	.Having suction orifice
92	..And suction pump or material separator
93	..And mouth prop, tongue guard or depressor, or cheek spreader
94	..And clamp or positioner
95	..And control valve for suction
96	..In flexible conduit or eduction tube
97	.Having receptacle (e.g., cuspidor)
98	.Including activator or regulator for controller or drive
99	..In handpiece
100	...Fluid control valve
101	..Foot operated
102	.Broach
103	.Having motor or means to transmit motion from motor to tool (e.g., "engine")
104	..Including lubricating or apparatus cooling means
105	..Including clutch or variable transmission

	APPARATUS
	.Having motor or means to transmit motion from motor to tool (e.g., "engine")
106	..Including braking means
107	..Including means to apply counter force to counteract tool weight or movement
108	..And means to retain standard, arm, or handpiece in adjusted or stored position
109	...Pivotally adjustable
110	..Endless belt transmission
111	...Having tensioning means
112	..Flexible shaft transmission
113	..Having treadle
114	..Hand-held tool or handpiece
115	...Having seal
116	...Having cover or guard
117	...Including shock absorbing or vibration dampening means
118	...Having reciprocating, vibrating, or oscillating output
119	....Ultrasonic
120	....Fluid motor
121	....Impact by sudden release of spring
122	....Having rotating cam or eccentric
123	.....And adjustment for stroke, intensity, or position of tool
124	....Angularly offset tool
125	...Having abrading or polishing means
126	...Having means facilitating assembly or disassembly of tool or handpiece
127	....Means to releaseably grip tool
128	.....Comprising locking means extending into groove or recess
129	.....Including axially movable collect to cam fingers
130	...Having adjustable head
131	...Having motor
132	....Rotary fluid turbine
133	...Contra angled handpiece
134	..Arbor
135	...Screw actuated clamp for apertured tool bit
136	.Having absorption means or means to isolate tooth or mouth from adjacent area (e.g., bib, dam, etc.)
137	..Bib
138	..And discrete oral fastening or positioning means
139	...Tooth clamp
140	.Jaw, cheek, lip, or tongue positioner
141	.Hand manipulatable implement
142	..Having abrading or polishing means
143	..Scaler
144	..Having cutter
145	...Including force multiplier
146	...Having means facilitating assembly or disassembly
147	...Removable tool element
148	..Separator
149	...Comprising tooth contacting wedge or wedge actuator
150	..Impacting means
151	...By sudden release of spring
152	..Including work penetrating portion to secure tool to work
153	..Having relatively movable work engaging surfaces
154	...Three or more relatively movable coacting surfaces
155	....Work accommodating slot or opening through surface (e.g., matrix clamp)
156	...Including contoured work shaping surface
157	...Pivoted
158	....Having actuating screw
159	....Having handles to pivot surface (e.g., pliers)
160	.....Plural pivots
161	...Screw actuated
162	...Resiliently biased
163	..Work carrier
164	..Plugger
165	.Tool bit
166	..Abrading or polishing
167	PROSTHODONTICS
168.1	.Denture liner or cushion
169	.Stress breaker
170	..Between tooth engaging clasp and denture
171	.Prefabricated denture
172	.Holding or positioning denture in mouth
173	..By fastening to jawbone
174	...By screw
175	...Shape of removed tooth root
176	...By blade
177	..By resiliently biased means
178	...Tooth engaging clasp
179	...Acting between upper and lower denture
180	..By cement or adhesive
181	...Including mating connectors on denture and abutment tooth
182	....And additional member for securing connectors together
183	...Including crown cemented to existing tooth
184	..By suction
185	...Including valve or air passageway leading from suction area
186	...Cup or disc
187	....Plural cups or discs
188	...Suction area comprising recess or cavity formed in denture base
189	..By magnetic material
190	.Connecting right and left segments of partial denture
191	.Attaching artificial tooth to base or adjacent artificial tooth
192	..By cavity in tooth for base material
193	..Connected to base by discrete connecting member
194	...And additional discrete element for securing connecting member to tooth
195	...Imbedded in base material
196	.Orienting or positioning teeth
197	.Cutting edge shape or arrangement
198	..Metallic cutting edge
199.1	.Denture base construction
200.1	..Metallic
201.1	.Dental implant construction
202.1	.Tooth construction
203.1	..Indicia, tinting, or shading
204	..Having means facilitating replacement of tooth portion
205	..Having plural piece backing or discrete connecting means for adjacent tooth portions
206	..Metallic tooth, tooth portion, or attachment
207	...Alloy
208	...Metallic backing
209	....Having dovetail, "T", pinhead, or bulbous protrusion extending into congruent recess in facing
210	....Having pin extending into facing
211	...Connecting pin
212.1	..Nonmetallic composite
213	.Preliminary casting, model, or trial denture
214	.Impression taking or bite determination

215	METHOD OR MATERIAL FOR TESTING, TREATING, RESTORING, OR REMOVING NATURAL TEETH
216	.Cleaning
217.1	.By lining or coating
218	.Crown
219	..Attachment to natural tooth or adjacent crown
220	...By post
221	....Having surface grooves or ridges
222.1	..Composite
223	..Method of fabricating
224	.Endodontic
225	.Anchor pin
226	.By filling, bonding or cementing
227	..Foil
228.1	..by named composition
229	MISCELLANEOUS

CLASS 434 EDUCATION AND DEMONSTRATION

1 DETECTION OR RANGE DETERMINATION OF DISTANT OBJECT BY APPARATUS USING SENSOR OF ELECTROMAGNETIC OR SOUND ENERGY
2 .Radar
3 ..Cathode ray screen display simulated by light means (e.g., light spot projected onto screen, etc.)
4 ..Optical means (e.g., image projector, etc.) or light or sound sensor (e.g., television camera, microphone, etc.) included in a simulator
5 ..Interference simulation
6 .Sonar
7 ..Interference simulation
8 ..Simulation of Doppler shift of echo
9 ..Simulation of plural detector system
10 ..Simulation by use of sound recording
11 ORGANIZED ARMED OR UNARMED CONFLICT OR SHOOTING
12 .Self-propelled projectile
13 ..Launched underwater
14 .Aerial warfare
15 ..Bombing
16 .Gunnery
17 ..Gunfire spotting
18 ..Gun recoil simulation
19 ..Gun aiming
20 ...Cinematographic or cathode ray screen display
21 ...Training apparatus using beam of infrared, visible light, or ultraviolet radiation
22 ....Beam sensor included in apparatus
23 ...Means (e.g., target, terrain model, etc.) marked or pierced to simulate projectile impact point
24 ..Gun loading or projectile preparation (e.g., fuse setting, etc.)
25 .Water warfare
26 ..Periscope view simulation
27 .Range finding
28 AIRCRAFT WIND DRIFT SIMULATION
29 VEHICLE OPERATOR INSTRUCTION OR TESTING
30 .Flight vehicle
31 ..Automatic pilot
32 ..Model viewed and maneuvered by trainee from point remote therefrom
33 ..Helicopter
34 ..Outer space vehicle
35 ..In flight
36 ...With simulation of night or reduced visibility flight
37 ..Aircraft, aircraft simulator, or means connected thereto traveling on ground or water during simulated flight training
38 ..Simulation of view from aircraft
39 ...View simulating means located on belt or cylinder
40 ...View simulating means located on element having spherical surface
41 ...Simulation of night or reduced visibility flight
42 ....Runway outlining or approach lights simulated
43 ...View simulated by cathode ray screen display
44 ...View simulated by projected image
45 ..Simulation of feel of control means (e.g., flight control stick, etc.)
46 ..Ground trainer agitated to simulate rough air buffeting or engine induced vibration of aircraft
47 ..Display or recordation of simulated flight path of ground trainer
48 ..Aircraft sound simulation
49 ..Aircraft or ambient condition simulated electrically or indicated by instrument or alarm
50 ...Takeoff or preparation therefor
51 ...Aircraft attitude (e.g., roll, etc.)
52 ...Ice formation or aircraft weight
53 ...Pressure
54 ...Propulsion means or accessory
55 ..Tiltable or turnable ground trainer
56 ...With fan or simulated propeller
57 ...With means for stabilizing trainer when idle
58 ...By fluid actuated piston/cylinder ram
59 ..Simulation of flight generated force applied to aircraft occupant
60 .Sail-equipped vehicle
61 .Bicycle or motorcycle
62 .Automobile or truck
63 ..Model viewed and maneuvered by trainee from point remote therefrom
64 ..Driver's skill measured by time or vehicle travel distance
65 ..Recordation of driver's performance
66 ..Real vehicle used in instruction or testing
67 ...Vehicle positioned on rollers, belt, or platform
68 ...Obstacle or other means contacted by improperly driven vehicle
69 ..Simulation of view from vehicle
70 ...View simulating means located on belt or cylinder
71 ..Manipulation of gear shift lever or clutch pedal
72 ARCHITECTURE, INTERIOR DECORATION, OR INDUSTRIAL PLANT LAYOUT
73 .Magnet included in display or demonstration
74 .Brick, tile, roofing, or siding
75 .Curtain or wall, ceiling, or floor cover
76 ..Light, mirror, or image projector included in display or demonstration
77 ..Roller-mounted belt or strip included in display or demonstration
78 ..Plaque (e.g., disk, etc.) turnable relative to index (e.g., window in card, etc.) to selectively align different points on plaque therewith
79 ..Building or room interior represented pictorially or by model
80 .Representation of furniture, bathroom or kitchen accessory, or cabinet placeable in different locations on representation of room interior
81 VISUAL ART OR CRAFT, ARTISTIC ADORNMENT, OR COLOR TRAINING OR DEMONSTRATION
82 .Sculpture or craft involving manual carving or shaping
83 .Shape defined by filament (e.g., string, etc.)
84 .Color application (e.g., painting, etc.)
85 .Drawing
86 ..Animal or human body model having movable parts
87 ..Stencil
88 ..Tracing
89 ..Model support
90 ..Grid included in drawing aid or scene viewer
91 ..Perspective
92 ..Orthogonal projection
93 .Flower arranging or landscaping
94 .Hair or wig styling
95 .Decorative sewing, needlework, weaving, or textile designing

VISUAL ART OR CRAFT, ARTISTIC ADORNMENT, OR COLOR TRAINING OR DEMONSTRATION
96 .Design formed of identical or complementary elements
97 ..Strips
98 .Color display
99 ..Personal appearance or wearing apparel
100 ...Cosmetic or nail polish
101 ..Produced by spinning means (e.g., plural rotating color disks, etc.)
102 ..Produced by superposed color filters
103 ..Including mixing receptacle or holder for color material
104 ..Including relatively rotatable elements (e.g., concentrically mounted color disks, etc.)
105 ..Automobile
106 ASTROLOGY
107 BUSINESS OR ECONOMICS
108 .Work schedule
109 .Record keeping
110 .Coin or currency identification or counterfeit detection
111 CELESTIAL NAVIGATION
112 COMMUNICATION AIDS FOR THE HANDICAPPED
113 .Tactile reading aid (e.g., Braille, etc.)
114 ..Converting information to tactile output
115 ..Braille writing slate
116 .Converting information to sound
117 .Writing guide for the blind
118 COMPUTER LOGIC, OPERATION, OR PROGRAMMING INSTRUCTION
126 FLUID FLOW OR WAVE MOTION
127 FOOD
128 GAME, BOARD OR TABLE TYPE
129 .Using playing card
130 GEOGRAPHY
131 .Terrestrial globe or accessory therefor
132 ..Relief globe
133 ..Having diverse use (e.g., pencil box, etc.)
134 ..Having magnet associated therewith
135 ..Having plural planar or curved surfaces (e.g., flat or frustoconical surfaces, etc.)
136 ..Rotated by mechanical drive
137 ..Collapsible or arranged for convenient assembly, disassembly, or storage
138 ...Inflatable
139 ..With means representing vehicle moving relative to earth
140 ...Space vehicle
141 ..With means indicating distance between points on earth
142 ..With means indicating time at different points on earth
143 ..With means demonstrating solar illumination of earth
144 ..With means demonstrating wind currents over earth
145 ..With internal light
146 ..With means to facilitate finding or reading indicia thereon
147 ..With map segment attachable thereto (e.g., continent, nation, etc.)
148 ..With suspension type support
149 .Means indicating time at different points on earth
150 .Map or terrain model
151 ..With model or sample of natural or man-made item associated therewith
152 ..Relief
153 ..Means for facilitating location of different points on map
154 HISTORY OR GENEALOGY
155 IDENTIFICATION OF PERSON OR HANDWRITING ANALYSIS
156 LANGUAGE
157 .Foreign
158 .Shorthand
159 .Alphabet letter formation, recognition, or sequencing
160 ..Letter formed by segments
161 ..Letter displayed upon manipulation of mechanism
162 .Writing or printing by hand
163 ..Tracing
164 ...Slotted or grooved path
165 ..Writing sample included in teaching means
166 ..Mechanical means for teaching proper position of body part while writing
167 .Spelling, phonics, word recognition, or sentence formation
168 ..Magnet included in teaching means
169 ..Electrical component included in teaching means
170 ..Color used in teaching means
171 ..Letter or word bearing elements (e.g., cards, blocks, etc.) with interfitting surface configurations
172 ..Letter-bearing elements (e.g., cards, blocks, etc.) selectively aligned to form word or sentence
173 ...Letter-bearing belt or reel-mounted strip
174 ...Rotatably mounted letter bearing element
175 ...Letter-bearing elements slidable between different grooves
176 ..Display of word or picture upon correct manipulation of teaching means
177 ..Crossword puzzle aid
178 ..Reading
179 ...Speed
180 ....Projected image of reading matter
181 ....Apertured mask moved past reading matter carrier
182 ....Reading matter carrier moved past viewing position
183 ....Pacer moved down reading matter carrier
184 ...Directionality training (e.g., for dyslexics, etc.)
185 .Speech
186 MAGNETIC OR GYRO COMPASS
187 MEASUREMENT OF LENGTH OR VOLUME
188 MATHEMATICS
189 .Base conversion or use of base other than ten
190 .Magnet included in teaching means
191 .Arithmetic
192 ..Chalkboard or equivalent means having readily erasable surface
193 ..Manually manipulated numeral shaped elements
194 ..Numeric value represented by weight placed on balance
195 ..Manually manipulated elements having size proportional to numeric value
196 ...Fraction representing elements
197 ..Indicia-bearing belt or reel-mounted strip
198 ..Plaque (e.g., disk, etc.) turnable relative to index (e.g., window in card, etc.) to selectively align different points on plaque therewith
199 ..Plaque slidable relative to index (e.g., window in card, etc.) to selectively align different points on plaque therewith
200 ..Manually manipulated pin or peg

MATHEMATICS
.Arithmetic
201 ..Electric component included in teaching means
202 ..Keyboard or like manually manipulated array (e.g., slides, levers, etc.)
203 ..Apertured elements threaded on elongate means (e.g., abacus, etc.)
204 ...Elements manually placed on or removed from elongate means during use
205 ..Means having number of marks (e.g., dots, etc.) or associated physical units (e.g., sticks, indentations, etc.) corresponding to numeric value
206 ..Rotatable wheel-shaped element (e.g., ring, disc, cylinder, etc.) having indicia on perimeter thereof
207 ..Color used in teaching means
208 ..Ball, block, or disk
209 ..Division or multiplication
210 ..Place value relative to decimal point
211 .Geometry, trigonometry, or physical mathematic model structure
212 ..Pythagorean theorem
213 ..Property of sphere or spheroid
214 ..Property of circle or ellipse
215 ..Demonstration means using relatively turnable elements
216 ..Demonstration means using filament (e.g., string, etc.) to define geometric shape
217 METEOROLOGY
218 NUCLEAR ENERGY OR RADIOACTIVE RADIATION DETECTION OR SIMULATION
219 OCCUPATION
220 .Air traffic control
221 .Audiometry
222 .Code communication
223 ..Visual signalling
224 .Electricity or electronics
225 .Dairying, farming, ranching, or other occupation involving care of plants or animals
226 .Fire fighting
227 .Keyboard operation (e.g., typing, key punching, etc.)
228 ..Means for selectively illuminating character on simulated keyboard
229 ..Means for selectively rendering key operable or inoperable
230 ..Means for selectively producing sound of character
231 ..Practice keyboard having individually depressible keys
232 ...With means to display character upon depression of key
233 ..Means on hand or finger for indicating finger to be used
234 .Soldering or welding
235 PARLIAMENTARY PROCEDURE
236 PSYCHOLOGY
237 .Cooperation of plural pupils
238 .Behavior or performance display (e.g., board for showing completed chores, etc.)
239 RADIO NAVIGATION
240 .Light sensor included in simulator of radio navigation equipment
241 .Simulation of upwardly directed airfield or landing approach marker radio beam
242 .Simulated radio signal generated by use of data storage means
243 .Simulated bearing or position or vehicle relative to radio transmitter or directional beam indicated to trainee by instrument
244 .Simulation of radio directional beam carrying Morse code signal
245 RELIGION
246 .Rosary
247 PHYSICAL EDUCATION
248 .Basketball
249 .Bowling
250 .Dancing
251 .Football, soccer, or rugby
252 .Golf
253 .Skiing
254 .Swimming
255 .Traversing ground (e.g., crawling, running, etc.)
256 .Body model with articulated parts
257 .Picture or image of body included in display or demonstration
258 .Developing or testing coordination
259 ..Associating dissimilar objects with apertures or pegs having matching size, shape, or color
260 ..Manipulation of tool or fastener (e.g., zipper, shoelaces, etc.)
261 ..Tracing
262 ANATOMY, PHYSIOLOGY, THERAPEUTIC TREATMENT, OR SURGERY RELATING TO HUMAN BEING
263 .Dentistry
264 ..Means mounting upper and lower tooth models for relative movement
265 .Cardiac massage or artificial respiration
266 .Simulation of body sound
267 .Anatomical representation
268 ..Simulation of flow of body liquid
269 ..Including superposed sheets respectively depicting different body parts
270 ..Head or part thereof
271 ...Eye
272 ..Internal organ, blood vessel, or nerve
273 ...Female genital
274 ..Skeleton or bone
275 ...Palpation or manual force application (e.g., chiropractic adjustment, etc.)
276 SCIENCE
277 .Crystal structure model or display having discrete element (e.g., geometric shape, light, etc.) representing atom
278 .Molecular model or display having discrete element representing atom or radical
279 ..Model having helical chain of elements (e.g., DNA model, etc.)
280 ..Atom or radical represented by element formed of sheet material
281 .Model or display demonstrating structure or property of atom or radical
282 ..Indicia chart (e.g., periodic table, etc.)
283 .Means demonstrating physical property (e.g., osmotic pressure, solubility, etc.) of substance
284 .Astronomy
285 ..Representation of light generating celestial body
286 ...Light spot
287 ...Celestial globe
288 ....And earth representation
289 ...Finding or identifying aid
290 ...Simulation of sun and earth
291 ....Simulation of motion of earth and another major planet around sun
292 ....And moon

SCIENCE
.Astronomy
..Representation of light generating celestial body
...Simulation of sun and earth
....And moon
293 .....Moon model moved around earth model by mechanical or eleGctrical means
294 ......By belt drive
295 .Biology or taxidermy
296 ..Specimen display
297 ...Specimen enclosure
298 .Chemistry or metallurgy
299 .Geology
300 .Physics
301 ..Electricity or magnetism
302 ..Statics or dynamics
303 ..Optics
304 TELLING TIME OR CALENDAR READING
305 VEHICLE MOVEMENT OR TRAFFIC ACCIDENT OR CONDITION
306 VOTING MACHINE OR BALLOT MARKING
307 CATHODE RAY SCREEN DISPLAY AND AUDIO MEANS
308 AUDIO RECORDING AND VISUAL MEANS
309 .Common carrier for visual means and audio recording
310 ..Carrier used with image projector
311 ..Card, sheet, or block
312 ...Reading head moved past stationary audio track
313 ....Manually
314 .Image projector
315 ..With code on image carrier for controlling operation of apparatus
316 ..With code on audio carrier for controlling operation of apparatus
317 .Visual information in book form
318 .Audio recording on disk
319 AUDIO RECORDING
320 .Listener's voiced response recorded
321 .Operation of apparatus controlled by listener's response to question or problem
322 QUESTION OR PROBLEM ELICITING RESPONSE
323 .Cathode ray screen display included in examining means
324 .Image projector included in examining means
325 ..And light detector
326 .Mark transfer sheet (e.g., carbon paper, etc.) included in examining means
327 .Correctness of response indicated to examine by self-operating or examinee-actuated means
328 ..Involving heat or chemical reaction
329 ..Involving fluid flow
330 ..Involving magnetic attraction
331 ..By optical element (e.g., mirror, color filter, lens, etc.)
332 ..Reward dispensed for correct answer
333 ..Picture or pattern completed by examinee placing plaques bearing portions thereof in correct relation
334 ..Hand-held element insertable to different depths in apertures respectively representing right and wrong answers
335 ..By means including electrical component
336 ...Response of plural examinees communicated to monitor or recorder by electrical signals
337 ...Light detector
338 ...Part of electric circuit completed when examinee places end of flexible lead, or means connected thereto (e.g., plug, etc.), in contact with another element
339 ...Part of electric circuit completed when examinee depresses portion of sheet having electric conductor associated therewith
340 ...Part of electric circuit completed when examinee places free element in contact with another element
341 ....Correct answer indicator lamp carried by free element
342 ...Question or problem located on endless belt or reel mounted strip
343 ...Size or shape of, or aperture in, free element controls indication of response correctness
344 ...Correct answer illuminated
345 ..Size or shape of, or aperture in, free element cntrols indication of response correctness
346 ..Correctness of response indicated when examinee physically alters element other than by marking it
347 ..Correct answer displayed on side of element opposite side displaying question or problem
348 ..Correct answer hidden until examinee moves element
349 ...Means for receiving examinee's written response
350 .Response of plural examinees communicated to monitor or recorder by electrical signals
351 ..Wireless signals
352 ..With means for indicating first examinee to respond
353 .Grading of response form
354 ..Comparison of response form with standard answer form
355 ...Light detector sensing response
356 ...Electrical means sensing conductive mark representing response
357 ...Means sensing aperture representing response
358 ..Light detector sensing response
359 ..Electrical means sensing conductive mark representing response
360 ..Means sensing aperture representing response
361 ..Means perforating response form at correct answer location
362 .Electrical means for recording examinee's response
363 .Card or sheet for receiving examinee's written, marked, or punched response
364 ..With apertured overlay
365 MEANS FOR DEMONSTRATING APPARATUS, PRODUCT, OR SURFACE CONFIGURATION, OR FOR DISPLAYING EDUCATION MATERIAL OR STUDENT'S WORK
366 .Means for simulating abnormal condition
367 .Means for comparing characteristics of plural articles or materials
368 .Superposed indicia bearing sheets, one depicting interior view
369 .Means for displaying article at various stages of manufacture or treatment
370 .Transparent means permitting interior view
371 .Mirror for displaying something (e.g., apparel, hair style, etc.) as it would appear when associated with viewer
372 .Aircraft, spacecraft, or component thereof

	MEANS FOR DEMONSTRATING APPARATUS, PRODUCT, OR SURFACE CONFIGURATION, OR FOR DISPLAYING EDUCATION MATERIAL OR STUDENT'S WORK
373	.Land or water vehicle (e.g., automobile, boat, etc.) or component thereof
374	..Servicing aid (e.g., lubrication chart, etc.)
375	..Shock absorber or spring
376	..Tire, wheel, or brake
377	.Beauty aid or perfume
378	.Burial means or grave maker
379	.Demonstration or display of electrical apparatus or component
380	..Motor or generator
381	.Fluid filter
382	.Household equipment
383	..Refrigerator or air conditioner
384	..Vacuum cleaner
385	.Insulation
386	.Jewelry or monogram
387	.Lock or safe
388	.Lubricant or lubrication
389	.Mechanical power source (e.g., engine, windmill, etc.)
390	.Mining
391	.Pen or pencil
392	.Sport equipment
393	.Toy
394	.Timepiece or component thereof
395	.Wearing apparel
396	..Displayed on doll or manikin
397	..Footwear
398	...Hose
399	..Headwear
400	..Neckwear
401	.Machine mechanism
402	.Rotatable element having indicia or picture on perimeter thereof
403	.Block or like manually manipulatable object having indicia or picture on face thereof, or three-dimensional form for demonstrating shape
404	.Plaque (e.g., disk, etc.) turnable relative to index (e.g., window in card, etc.) to selectively align different points on plaque therewith
405	.Plaque slidable relative to index (e.g., window in card, etc.) to selectively align different points on plaque therewith
406	.Jigsaw elements having indicia thereon
407	.Manually manipulated pin or peg inserted into display board
408	.Chalkboard or equivalent means having easily erasable surface
409	..Mark formed by magnetic attraction between materials (e.g., particles in sheet made visible by movement of magnet over sheet, etc.)
410	..Mark formed by bonding sheet to underlying surface with pressure-applying stylus (e.g., Magic Slate, etc.)
411	..Erasable surface on endless belt
412	..Erasable surface on reel-mounted sheet
413	..Separate elements having erasable surfaces
414	...Relatively swingable
415	..With pencil holder or sharpener
416	..With chart, illustration, or indicia
417	..Chalkboard cleaning means, chalk or eraser holder, or chalk dust receiver
418	..With ruler, straight edge, or holder therefor
419	..Pivotal about horizontal axis
420	..Vertically adjustable
421	..Attached to wall
422	..Hand-carried school slate
423	...With rigid corner cap or separate means holding slate frame elements together
424	...With cushion or noise muffler attached to slate frame
425	..Artificial slate formed of plural constituents
426	.Endless belt or reel-mounted strip having indicia thereon
427	.Apertured mask placed over information bearing surface
428	.Pictorial demonstration or display
429	.Demonstration or display means combined with storage or collection means (e.g., receptacle, scoop, etc.)
430	.Display panel, chart, or graph
431	..Showing seat or desk location
432	DESK, TABLE, OR STUDY BOOTH
433	MISCELLANEOUS

CLASS 435 CHEMISTRY: MOLECULAR BIOLOGY AND MICROBIOLOGY

DECEMBER 1990

1 DIFFERENTIATED TISSUE OR ORGAN OTHER THAN BLOOD PER SE OR DIFFERENTIATED TISSUE OR ORGAN MAINTAINING; COMPOSITIONS THEREFOR, APPARATUS THEREFOR
2 MAINTAINING BLOOD OR SPERM IN A PHYSIOLOGICALLY ACTIVE STATE OR COMPOSITIONS THEREOF OR THEREFOR OR METHODS OF IN VITRO BLOOD CELL SEPARATION OR TREATMENT
3 CONDITION RESPONSIVE CONTROL PROCESS
4 MEASURING OR TESTING PROCESS INVOLVING ENZYMES OR MICROORGANISMS; COMPOSITION OR TEST STRIP THEREFORE; PROCESSES OF FORMING SUCH COMPOSITION OR TEST STRIP
5 .Involving virus or bacteriophage
6 .Involving nucleic acid
7.1 .Involving antigen-antibody binding, specific binding protein assay or specific ligand-receptor binding assay
7.2 ..Involving a microorganism or cell membrane bound antigen or cell membrane bound receptor or cell membrane bound antibody or microbial lysate
7.21 ...Animal cell
7.22 ....Parasite or protozoa
7.23 ....Tumor cell or cancer cell
7.24 ....Leukocyte (e.g., lymphocyte, granulocyte, monocyte, etc.)
7.25 ....Erythrocyte
7.3 ...Flagellar-antigen or pili-antigen
7.31 ...Fungi (e.g., yeast, mold, etc.)
7.32 ...Bacteria or Actinomycetales
7.33 ....Staphylococcus
7.34 ....Streptococcus
7.35 ....Salmonella
7.36 ....Sexually transmitted disease (e.g., chlamydia, syphilis, gonorrhea, etc.)
7.37 ....Escherichia coli
7.4 ..To identify an enzyme or isoenzyme
7.5 ..Involving avidin-biotin binding
7.6 ..Involving a modified enzyme (e.g., abzyme, recombinant, chemically altered, etc.)
7.7 ..Assay in which a label present is an apoenzyme, prosthetic group, or enzyme cofactor
7.71 ..Assay in which a label present is an enzyme inhibitor or functions to alter enzyme activity
7.72 ..Assay in which a label present is an enzyme substrate or substrate analogue
7.8 ..Involving nonmembrane bound receptor binding or protein binding other than antigen-antibody binding
7.9 ..Assay in which an enzyme present is a label
7.91 ...Enzyme produces product which is part of another reaction system (e.g., cyclic reaction, cascade reaction, etc.)
7.92 ...Heterogeneous or solid phase assay system (e.g., ELISA, etc.)
7.93 ....Competitive assay
7.94 ....Sandwich assay
7.95 ....Indirect assay
8 .Involving luciferase
9 .Geomicrobiological testing, e.g., for petroleum, etc.
10 .Involving uric acid
11 .Involving cholesterol
12 .Involving urea or urease
13 .Involving blood clotting factor, e.g., involving thrombin, thromboplastin, fibrinogen, etc.
14 .Involving glucose or galactose
15 .Involving transferase
16 ..Involving transaminase
17 ..Involving creatine phosphokinase
18 .Involving hydrolase
19 ..Involving esterase
20 ...Involving cholinesterase
21 ...Involving phosphatase
22 ..Involving amylase
23 ..Involving proteinase
24 ..Involving peptidase
25 .Involving oxidoreductase
26 ..Involving dehydrogenase
27 ..Involving catalase
28 ..Involving peroxidase
29 .Involving viable microorganism
30 ..Methods of sampling, or innoculating or spreading a sample; methods of physically isolating an intact microorganism
31 ..Testing for sterility condition
32 ..Testing for antimicrobial activity of a material
33 ...Using multifield media
34 ..Determining presence or kind of microorganism; use of selective media
35 ...Using radioactive material
36 ...Streptococcus; Staphylococcus
37 ...Nitrate to nitrite reducing bacteria
38 ...Enteriobacteria
39 ...Quantitative determination
40 ....Using multifield media
41 MICROORGANISM, TISSUE CELL CULTURE OR ENZYME USING PROCESS TO SYNTHESIZE A DESIRED CHEMICAL COMPOUND OR COMPOSITION
42 .Process involving microorganisms of different genera in the same process, simultaneously
43 .Preparing compound having a 1-thia-4-aza-bicyclo (3.2.0) heptane ring system, e.g., penicillin, etc.
44 ..By desacylation of the substituent in 6-position
45 ..By acylation of the substituent in 6-position
46 ..In presence of phenyl acetic acid or phenyl acetamide or their derivatives
47 .Preparing compound having a 1-thia-5-aza-bicyclo (4.2.0) octane ring system, e.g., cephalosporin, etc.
48 ..Di-substituted in 7-position
49 ..Cephalosporin C
50 ..By acylation of the substituent in the 7-position
51 ..By desacylation of the substituent in the 7-position
52 .Preparing compound containing a cyclopentanohydrophenanthrene nucleus; nor-, homo- or D-ring lactone derivatives thereof
53 ..Containing heterocyclic ring
54 ..Acting on D-ring
55 ...Acting at 17-position
56 ....Hydroxylating at 17-position
57 ...Hydroxylating at 16-position
58 ..Hydroxylating
59 ...At 11-position
60 ....At 11 alpha position
61 ..Dehydrogenating; dehydroxylating
62 ...Forming an aryl ring from "A" ring

MICROORGANISM, TISSUE CELL CULTURE OR ENZYME USING PROCESS TO SYNTHESIZE A DESIRED CHEMICAL COMPOUND OR COMPOSITION

63 .Preparing compound containing a prostaglandin nucleus
64 .Preparing compound other than saccharide containing a tetracycline nucleus, e.g., naphacene, etc.
65 .Preparing compound other than saccharide containing a gibberellin nucleus, i.e., gibbane
66 .Preparing compound other than saccharide containing alloxazine or isoalloxazine nucleus
67 .Preparing compound containing a carotene nucleus, i.e., carotene
68.1 .Enzymatic production of a protein or polypeptide (e.g., enzymatic hydrolysis, etc.)
69.1 .Recombinant DNA technique included in method of making a protein or polypeptide
69.2 ..Enzyme inhibitors or activators
69.3 ..Antigens
69.4 ..Hormones and fragments thereof
69.5 ..Lymphokines or monokines
69.51 ...Interferons
69.52 ...Interleukins
69.6 ..Blood proteins
69.7 ..Fusion proteins or polypeptides
69.8 ..Signal sequence, (e.g., beta-galactosidase, etc.)
69.9 ...Yeast derived
70.1 .Using tissue cell culture to make a protein or polypeptide
70.2 ..Fused or hybrid cells
70.21 ...Producing monoclonal antibody
70.3 ..Animal tissue cell culture
70.4 ...Blood (lymphoid) cell culture
70.5 ....Producing interferons
71.1 .Using a microorganism to make a protein or polypeptide
71.2 ..Procaryotic microorganism
71.3 ...Antibiotic or toxin
72 .Preparing compound containing saccharide radical
73 ..Preparing S-glycoside, e.g., lincomycin, etc.
74 ..Preparing O-glycoside, e.g., glucosides, etc.
75 ...Oxygen of the saccharide radical is directly bonded to a nonsaccharide heterocyclic ring or a fused- or bridged-ring system which contains a nonsaccharide heterocyclic ring, e.g., coumermycin, novobiocin, etc.
76 ....The hetero ring has eight or more ring members and only oxygen as ring hetero atoms, e.g., erythromycin, spiramycin, nystatin, etc.
77 ...Oxygen atom of the saccharide radical is directly linked through only acyclic carbon atoms to a nonsaccharide heterocyclic ring, e.g., bleomycin, phleomycin, etc.
78 ...Oxygen atom of the saccharide radical is directly bonded to a condensed ring system having three or more carboxyclic rings, e.g., dauomycin, adriamycin, etc.
79 ...Oxygen atom of the saccharide radical is bonded to a cyclohexyl radical, e.g., kasugamycin, etc.
80 ....Cyclohexyl radical is substituted by two or more nitrogen atoms, e.g., destomycin, neamin, etc.
81 .....Cyclohexyl radical is attached directly to a nitrogen atom of two or more N-C(=N)-N radicals, e.g., streptomycin, etc.
82 .....Having two saccharide radicals bonded through only oxygen to adjacent ring carbons of the cyclohexyl radical, e.g., ambutyrosin, ribostamycin, etc.
83 ......Containing three or more saccharide radicals, e.g., liquidomycin, neomycin, lividomycin, etc.
84 ..Preparing nitrogen-containing saccharide
85 ...N-glycoside
86 ....Cobalamin, i.e., vitamin B12, LLD factor
87 ....Nucleoside
88 .....Having a fused ring containing a six-membered ring having two N-atoms in the same ring, e.g., purine nucleosides, etc.
89 ....Nucleotide
90 .....Dinucleotide, e.g., NAD, etc.
91 .....Polynucleotide, e.g., nucleic acid oligoribonucleotides, etc.
92 .....Having a fused ring containing a six-membered ring having two N-atoms in the same ring, e.g., purine based mononucleotides, etc.
93 ..Mashing or wort making
94 ..Produced by the action of an isomerase, e.g., fructose by the action of xylose isomerase on glucose, etc.
95 ..Produced by the action of a beta-amylase, e.g., maltose by the action of beta-amylase on amylose, etc.
96 ..Produced by the action of an exo-1.4 alpha glucosidase, e.g., dextrose by the action of glucoamylase on starch, etc.
97 ..Produced by the action of a glycosyl transferase, e.g., alpha, beta, gamma-cyclodextrins by the action of glycosyl transferase on starch, etc.
98 ..Produced by the action of an alpha-1, 6-glucosidase, e.g., amylose, debranched amylopectin by the action of pullulanase, etc.
99 ..Produced by the action of a carbohydrase, e.g., maltose by the action of alpha amylase on starch, etc.
100 ..Disaccharide
101 ..Polysaccharide of more than five saccharide radicals attached to each other by glycosidic bonds
102 ...Pullulan
103 ...Dextran
104 ...Xanthan, i.e., Xanthomonas-type heteropolysaccharides
105 ..Monosaccharide
106 .Preparing alpha or beta amino acid or substituted amino acid or salts thereof
107 ..Proline; hydroxyproline; histidine
108 ..Tryptophan; tyrosine; phenylalanine; 3,4 dihydroxyphenylalanine
109 ..Aspartic acid (asparaginic acid); asparagine
110 ..Glutamic acid; glutamine
111 ...Utilizing biotin or its derivatives

MICROORGANISM, TISSUE CELL CULTURE OR ENZYME USING PROCESS TO SYNTHESIZE A DESIRED CHEMICAL COMPOUND OR COMPOSITION
.Preparing alpha or beta amino acid or substituted amino acid or salts thereof
..Glutamic acid; glutamine
112 ...Utilizing surfactant, fatty acids or fatty acid esters, i.e., having seven or more atoms
113 ..Methionine; cysteine; cystine
114 ..Citrulline; arginine; ornithine
115 ..Lysine; diaminopimelic acid; threonine; valine
116 ..Alanine; leucine; isoleucine; serine; homoserine
117 .Preparing heterocyclic carbon compound having only O, N, S, Se, or Te as ring hetero atoms
118 ..Containing two or more hetero rings
119 ...Containing at least two hetero rings bridged or fused among themselves or bridged or fused with a common carbocyclic ring system, e.g., rifamycin, etc.
120 ..Nitrogen or oxygen hetero atom and at least one other diverse hetero ring atom in the same ring
121 ..Nitrogen as only ring hetero atom
122 ...Containing six-membered hetero ring
123 ..Oxygen as only ring hetero atom
124 ...Containing a hetero ring of at least seven ring members, e.g., zearalenone, macrocyclic lactones, etc.
125 ...Containing six-membered hetero ring, e.g., fluorescein, etc.
126 ...Containing five-membered hetero ring, e.g., griseofulvin, etc.
127 .Preparing compound containing at least three carbocyclic rings
128 .Preparing nitrogen-containing organic compound
129 ..Amide, e.g., chloramphenicol, etc.
130 .Preparing sulfur-containing organic compound
131 .Preparing organic compound containing a metal or atom other than H, N, C, O, or halogen
132 .Preparing oxygen-containing organic compound
133 ..Containing quinone nucleus, i.e., quinoid structure
134 ..Fat; fatty oil; ester-type wax; higher fatty acid, i.e., having at least seven carbon atoms in an unbroken chain bound to a carboxyl group; oxidized oil or fat
135 ..Carboxylic acid ester
136 ..Containing a carboxyl group
137 ...Sugar acid having five or more carbon atoms, i.e., aldonic, keto-aldonic, or saccharic acid
138 ....Alpha-ketogulonic acid, i.e., 2-ketogulonic acid
139 ...Lactic acid
140 ...Acetic acid
141 ...Propionic or butyric acid
142 ...Polycarboxylic acid
143 ....Having keto group, e.g., alpha-ketoglutaric acid, etc.
144 ....Tricarboxylic acid, e.g., citric acid, etc.
145 ....Dicarboxylic acid having four or less carbon atoms, e.g., fumaric, maleic, etc.
146 ...Hydroxy carboxylic acid
147 ..Containing carbonyl group
148 ...Ketone
149 ....Cyclopentanone or cyclopentadione containing compound
150 ....Acetone containing product
151 .....Substrate contains grain or cereal material
152 .....Substrate contains protein as nitrogen source
153 .....Substrate contains inorganic nitrogen source
154 .....Substrate contains inorganic compound, other than water
155 ..Containing hydroxy group
156 ...Aromatic
157 ...Acyclic
158 ....Polyhydric
159 .....Glycerol
160 ....Butanol
161 ....Ethanol
162 .....Multiple stages of fermentation; multiple types of microorganisms or reuse of microorganisms
163 .....Produced as by-product, or from waste, or from cellulosic material substrate
164 ......Substrate contains sulphite waste liquor or citrus waste
165 ......Substrate contains cellulosic material
166 .Preparing hydrocarbon
167 ..Only acyclic
168 .Preparing element or inorganic compound except carbon dioxide
169 .Using actinomycetales
170 .Using bacteria
171 .Using fungi
172.1 MUTATION OR GENETIC ENGINEERING
172.2 .Fused or hybrid cell formation
172.3 .Recombination
173 TREATMENT OF MICROORGANISM OR ENZYME WITH ELECTRICAL OR WAVE ENERGY, E.G., MAGNETISM, SONIC WAVES, ETC.
174 CARRIER-BOUND OR IMMOBILIZED ENZYME OR MICROBIAL CELL; CARRIER-BOUND OR IMMOBILIZED CELL; PREPARATION THEREOF
175 .Multi-enzyme system
176 .Enzyme or microbial cell is immobilized on or in an inorganic carrier
177 .Enzyme or microbial cell is immobilized on or in an organic carrier
178 ..Carrier is carbohydrate
179 ...Carbohydrate is cellulose or derivative thereof
180 ..Carrier is synthetic polymer
181 ...Attached to the carrier via a bridging agent
182 ...Enzyme or microbial cell is entrapped within the carrier, e.g., gel, hollow fibre
183 ENZYME, E.G., LIGASES (6.), ETC., PROENZYME; COMPOSITIONS THEREOF; PROCESS FOR PREPARING, ACTIVATING, INHIBITING, SEPARATING,OR PURIFYING ENZYMES
184 .Enzyme inactivation by chemical treatment
185 .Malt
186 .Pancreatin
187 .Preparing granular- or free-flowing enzyme composition
188 .Stabilizing an enzyme by forming a mixture, an adduct or a composition or formation of an adduct or enzyme conjugate
189 .Oxidoreductase (1.), e.g., luciferase

ENZYME, E.G., LIGASES (6.), ETC., PROENZYME; COMPOSITIONS THEREOF; PROCESS FOR PREPARING, ACTIVATING, INHIBITING, SEPARATING,OR PURIFYING ENZYMES

.Oxidoreductase (1.), e.g., luciferase

190 ..Acting on CHOH group as donor, e.g., glucose oxidase, lactate dehydrogenase (1.1)

191 ..Acting on nitrogen-containing compound as donor (1.2, 1.5, 1.7)

192 ..Acting on hydrogen peroxide as acceptor (1.11)

193 .Transferase other than ribonuclease (2.)

194 ..Transferring phosphorus containing group, e.g., kineases, etc. (2.7)

195 .Hydrolase (3.)

196 ..Acting on ester bond (3.1)

197 ...Carboxylic ester hydrolase (3.1.1)

198 ....Triglyceride splitting, e.g., lipase, etc. (3.1.1.3)

199 ...Ribonuclease (3.1.4)

200 ..Acting on glycosyl compound (3.2)

201 ...Acting on alpha-1, 4-glucosidic bond, e.g., hyaluronidase, invertase, amylase, etc. (some 3.2.1)

202 ....Alpha-amylase, microbial source

203 .....Fungal source

204 ....Alpha-amylase, plant source (3.2.1.1)

205 ....Glucoamylase (3.2.1.3)

206 ...Acting on beta-1, 4 link between N-acetylmuramic acid and 2-acetylamino 2-deoxy-D-glucose, e.g., lysozyme, etc.

207 ...Acting on beta-galatose-glycoside bond, e.g., beta-galactosidase, etc.

208 ...Acting on alpha-galatose-glycoside bond, e.g., alpha-galactosidase, etc.

209 ...Acting on beta-1, 4-glucosidic bond, e.g., cellulase, etc. (3.2.1.4)

210 ...Acting on alpha-1, 6-glucosidic bond, e.g., isoamylase, pullulanase, etc.

211 ....Dextranase (3.2.1.11)

212 ..Acting on peptide bond, e.g., thromboplastin, leucine amino-peptidase, etc., (3.4)

213 ...Trypsin; chymotrypsin

214 ...Thrombin

215 ...Urokinase

216 ...Streptokinase

217 ...Plasmin, i.e., fibrinolysin

218 ...Elastase

219 ...Proteinase

220 ....Derived from bacteria

221 .....Bacteria is Bacillus

222 ......Bacillus subtilus or Bacillus lichenoformis

223 ....Derived from fungi

224 .....From yeast

225 .....From Aspergillus

226 ....Derived from animal tissue, e.g., rennin, etc.

227 ..Acting on carbon to nitrogen bond other than peptide bond (3.5)

228 ...Acting on a linear amide linkage in linear amide

229 ....Asparaginase

230 ....Penicillin amidase

231 ...Acting on amide linkage in cyclic amides, e.g., penicillinase, etc. (3.5.2)

232 .Lyase (4.)

233 .Isomerase (5.)

234 ..Glucose isomerase

235.1 VIRUS OR BACTERIOPHAGE, EXCEPT FOR VIRAL VECTOR OR BACTERIOPHAGE VECTOR; COMPOSITION THEREOF; PREPARATION OR PURIFICATION THEREOF; PRODUCTION OF VIRAL SUBUNITS; MEDIA FOR PROPAGATING

236 .Inactivation or attenuation; producing viral subunits

237 ..By serial passage of virus

238 ..By chemical treatment

239 .Recovery or purification

240.1 ANIMAL OR PLANT CELL, E.G., CELL LINES, TISSUES; CULTIVATION OR MAINTENANCE THEREOF; MEDIA THEREFORE

240.2 .Animal cells, per se, culture techniques and media

240.21 ..Techniques of establishing a primary culture

240.22 ..Culture of encapsulated cells

240.23 ..Culture of cells on solid support, e.g., anchorage dependent cells

240.24 ...Support is suspendable particle

240.241 ...Culture of cells on membrane

240.242 ....Hollow fibre membrane

240.243 ...Solid support treated or coated to enhance attachment or growth

240.25 ..Culture in suspension

240.26 ..Fused or hybrid cells

240.27 ...Ab or Ig fragments producing cells

240.3 ..Culture medium, per se

240.31 ...Defined medium

240.4 .Plant cells, per se, culture techniques and media

240.45 ..Culture techniques, e.g., meristem culture, etc.

240.46 ...Culture in suspension

240.47 ....Protoplasts

240.48 ...Callus culture

240.49 ....Regeneration (includes nonflowering ornamentals)

240.5 .....Agronomic crops, e.g., tobacco, grains, etc.

240.51 .....Fruit and vegetable crops, e.g., tomato, etc.

240.54 ..Culture medium, per se, or regeneration medium, per se

242 SPORE FORMING OR ISOLATING PROCESS

243 MICROORGANISM PER SE, E.G., PROTOZOA, ETC.; COMPOSITIONS THEREOF; PROCESS OF PROPAGATING, MAINTAINING OR PRESERVING MICROORGANISMS OR COMPOSITIONS THEREOF; PROCESS OF PREPARING OR ISOLATING A COMPOSITION CONTAINING A MICROORGANISM; CULTURE MEDIA THEREFOR

244 .Chemical stimulation of growth or activity by addition of chemical compound which is not an essential growth factor; stimulation of growth by removal of a chemical compound

245 .Adaptation or attenuation of cells

246 .Foam culture

247 .Utilizing media containing lower alkanol, i.e., having one to six carbon atoms

248 .Utilizing media containing hydrocarbon

249 ..Aliphatic

250 ...Having five or less carbon atoms

251 .Utilizing media containing waste sulphite liquor

252 .Utilizing media containing cellulose or hydrolysates thereof

252.1 .Bacteria or Actinomycetales; media therefor

252.2 ..Rhizobium or Agrobacterium

252.3 ..Transformants (e.g., recombinant DNA or vector or foreign or exogenous gene containing, fused bacteria, etc.)

	MICROORGANISM PER SE, E.G., PROTOZOA, ETC.; COMPOSITIONS THEREOF; PROCESS OF PROPAGATING, MAINTAINING OR PRESERVING MICROORGANISMS OR COMPOSITIONS THEREOF; PROCESS OF PREPARING OR ISOLATING A COMPOSITION CONTAINING A MICROORGANISM; CULTURE MEDIA THEREFOR
	.Bacteria or Actinomycetales; media therefor
	..Transformants (e.g., recombinant DNA or vector or foreign or exogenous gene containing, fused bacteria, etc.)
252.31	...Bacillus (e.g., B. subtilis, B. thuringiensis, etc.)
252.32	...Brevibacterium or Corynebacterium
252.33	...Escherichia (e.g., E. coli, etc.)
252.34	...Pseudomonas
252.35	...Streptomyces
252.4	..Mixed culture
252.5	..Bacillus (e.g., B. subtilis, B. thuringiensis, etc.)
252.6	..Actinoplanes
252.7	..Clostridium
252.8	..Escherichia (e.g., E. coli, etc.) or Salmonella
252.9	..Lactobacillus, Pediococcus, or Leuconostoc
253.1	..Mycobacterium
253.2	..Nocardia
253.3	..Pseudomonas
253.4	..Streptococcus
253.5	..Streptomyces
253.6	..Culture media, per se
254	.Fungi; media therefor
255	..Yeast; media therefor
256	...Bakers or brewers yeast
257	.Unicellular algae; media therefor
258	.Protozoa; media therefor
259	.Lysis of microorganism
260	.Preserving or maintaining microorganism
261	.Separation of microorganism from culture media
320.1	VECTOR, PER SE, E.G., PLASMID, HYBRID PLASMID, COSMID, VIRAL VECTOR, BACTERIOPHAGE VECTOR, ETC.
262	PROCESS OF UTILIZING AN ENZYME OR MICROORGANISM TO LIBERATE, SEPARATE, OR PURIFY A PREEXISTING COMPOUND OR COMPOSITION THEREFORE; CLEANING OBJECTS OR TEXTILES
263	.Textile treating
264	.Cleaning using a microorganism or enzyme
265	.Depilating hides, bating or hide treating using enzyme or microorganism
266	.Treating gas, emulsion, or foam
267	.Treating animal or plant material or microorganism
268	..Treating organ or animal secretion
269	..Treating blood fraction
270	..Removing nucleic acid from intact or disrupted cell
271	..Glyceridic oil, fat, ester-type wax or higher fatty acid recovered or purified
272	..Proteinaceous material recovered or purified
273	...Collagen or gelatin
274	..Carbohydrate material recovered or purified
275	...Pectin or starch
276	...Sugar, e.g., molasses treatment, etc.
277	...Cellulose, e.g., plant fibers, etc.
278	....Producing paper pulp
279	....Hemp or flax treating

280	.Resolution of optical isomers or purification of organic compounds or composition containing same
281	.Petroleum oil or shale oil treating
282	..Desulfurizing
283	ORGAN PERFUSION APPARATUS
284	TISSUE, ANIMAL OR PLANT CELL, OR VIRUS CULTURE APPARATUS
285	.With means providing thin layers
286	.With means providing suspensions
287	APPARATUS
288	.For use of free or immobilized enzyme
289	.Including condition or time responsive control
290	..Temperature responsive control
291	.Including measuring or testing with condition sensing or measuring means
292	.Innoculator streaker or sampler
293	..Multifield or continuous
294	..Sampler or innoculator is part of container
295	...Sampler or innoculator is swab
296	.Tube or bottle
297	.Petri dish
298	..Including cover seal
299	.Containing or adapted to contain solid media
300	..Multiple field or compartment
301	...Horizontal, planar field
302	.Malting or mashing apparatus
303	..Rotary drum
304	..Cascade or vertically spaced stages
305	..With agitator or mash turner
306	...With horizontal axis of rotation
307	...With vertical axis of rotation
308	....Rakes
309	..With multilevel gas introduction means
310	.With means providing thin layer or with multilevel trays
311	.With sterilizer or filtration means
312	.Rotatably mounted
313	.With gas introduction means
314	..With draft tube
315	..With agitator
316	.With agitator or heat exchanger
317.1	MISCELLANEOUS (e.g., subcellular parts of microorganisms, etc.)

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CROSS-REFERENCE ART COLLECTIONS

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800	ELIMINATION OR REDUCTION OF CONTAMINATION BY UNDESIRED FERMENTS, E.G., ASEPTIC CULTIVATION
801	ANEROBIC CULTIVATION
802	LOGARITHMIC GROWTH PHASE
803	PHYSICAL RECOVERY METHODS, E.G., CHROMATOGRAPHY, GRINDING
804	SINGLE CELL PROTEIN
805	TEST PAPERS
806	FERTILITY TESTS
807	GAS DETECTION APPARATUS
808	OPTICAL SENSING APPARATUS
809	INCUBATORS OR RACKS OR HOLDERS FOR CULTURE PLATES OR CONTAINERS
810	PACKAGED DEVICE OR KIT
811	INTERFERON
812	FOAM CONTROL
813	CONTINUOUS FERMENTATION
814	ENZYME SEPARATION OR PURIFICATION
815	.By sorption
816	.By solubility
817	ENZYME OR MICROBE ELECTRODE
818	AERATION OR OXYGEN TRANSFER TECHNIQUE
819	FERMENTATION VESSELS IN SERIES
820	SUBCELLULAR PARTS OF MICROORGANISMS

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MICROORGANISM CROSS-REFERENCE ART COLLECTIONS

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822 .Using bacteria or actinomycetales
823 ..Acetobacter
824 ..Achromobacter
825 ..Actinomadura
826 ..Actinomyces
827 ..Actinoplanes
828 ..Aerobacter
829 ..Alcaligenes
830 ..Arthrobacter
831 ..Azotobacter
832 ..Bacillus
833 ...Bacillus brevis
834 ...Bacillus cereus
835 ...Bacillus circulans
836 ...Bacillus licheniformis
837 ...Bacillus megaterium
838 ...Bacillus polymyxa
839 ...Bacillus subtilis
840 ..Brevibacterium
841 ..Chainia
842 ..Clostridium
843 ..Corynebacterium
844 ...Corynebacterium diphtheriae
845 ...Corynebacterium poinsettiae
846 ...Corynebacterium pyogenes
847 ..Erwinia
848 ..Escherichia
849 ...Escherichia coli
850 ..Flavobacterium
851 ..Haemophilus
852 ..Klebsiella
853 ..Lactobacillus
854 ...Lactobacillus acidophilus
855 ...Lactobacillus brevis
856 ...Lactobacillus casei
857 ...Lactobacillus plantarum
858 ..Methylomonas
859 ..Micrococcus
860 ...Micrococcus flavus
861 ...Micrococcus glutamicus
862 ...Micrococcus lysodeikticus
863 ..Mycobacterium
864 ...Mycobacterium avium
865 ...Mycobacterium fortuitum
866 ...Mycobacterium smegmatis
867 ..Micromonospora
868 ...Micromonospora chalcea
869 ...Micromonospora purpurea
870 ..Mycoplasma
871 ..Neisseria
872 ..Nocardia
873 ..Proteus
874 ..Pseudomonas
875 ...Pseudomonas aeruginosa
876 ...Pseudomonas fluorescens
877 ...Pseudomonas putida
878 ..Rhizobium
879 ..Salmonella
880 ..Serratia
881 ...Serratia marcescens
882 ..Staphylococcus
883 ...Staphylicoccus aureus
884 ...Staphylococcus epidermidis
885 ..Streptococcus
886 ..Streptomyces
887 ...Streptomyces albus
888 ...Streptomyces antibioticus
889 ...Streptomyces aureofaciens
890 ...Streptomyces aureus
891 ...Streptomyces bikiniensis
892 ...Streptomyces candidus
893 ...Streptomyces chartreusis
894 ...Streptomyces diastatochromogenes
895 ...Streptomyces filipinensis
896 ...Streptomyces fradiae
897 ...Streptomyces griseus
898 ...Streptomyces hygroscopicus
899 ...Streptomyces lavendulae
900 ...Streptomyces lincolnensis
901 ...Streptomyces noursei
902 ...Streptomyces olivaceus
903 ...Streptomuces platensis
904 ...Streptomyces rimosus
905 ...Streptomyces sparogenes
906 ...Streptomyces venezuelae
907 ..Streptosporangium
908 ..Streptovirticillium
909 ..Vibrio
910 ..Xanthomonas
911 .Using fungi
912 ..Absidia
913 ..Aspergillus
914 ...Aspergillus awamori
915 ...Aspergillus flavus
916 ...Aspergillus fumigatus
917 ...Aspergillus niger
918 ...Aspergillus oryzae
919 ...Aspergillus ustus
920 ...Aspergillus wenti
921 ..Candida
922 ...Candida albicans
923 ...Candida lipolytica
924 ...Candida tropicalis
925 ..Cephalosporium
926 ...Cephalosporium acremonium
927 ...Cephalosporium caerulens
928 ...Cephalosporium crotocinigenium
929 ..Fusarium
930 ..Hansenula
931 ..Mucor
932 ..Paecilomyces
933 ..Penicillium
934 ...Penicillium brevi
935 ...Penicillium chrysogenum
936 ...Penicillium notatium
937 ...Penicillium patulum
938 ..Pichia
939 ..Rhizopus
940 ..Saccharomyces
941 ...Saccharomyces carlsbergensis
942 ...Saccharomyces cerevisiae
943 ...Saccharomyces lactis
944 ..Torulopsis
945 ..Trichoderma
946 .Using algae
947 .Using protozoa
948 .Using viruses or cell lines

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CROSS-REFERENCE ART COLLECTION RELATED TO SUBCLASSES 7.1 THROUGH 7.95

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960 IMMUNOHISTOCHEMICAL ASSAY
961 INCLUDING A STEP OF FORMING, RELEASING, OR EXPOSING THE ANTIGEN OR FORMING THE HAPTEN-IMMUNOGENIC CARRIER COMPLEX OR THE ANTIGEN, PER SE
962 PREVENTION OR REMOVAL OF INTERFERING MATERIALS OR REACTANTS OR OTHER TREATMENT TO ENHANCE RESULTS (E.G., DETERMINING OR PREVENTING NONSPECIFIC BINDING, ETC.)
963 METHODS OF STOPPING AN ENZYME REACTION OR STABILIZING THE TEST MATERIALS
964 INCLUDING ENZYME-LIGAND CONJUGATE PRODUCTION (E.G., REDUCING RATE OF NONPRODUCTIVE LINKAGE, ETC.)
965 INVOLVING IDIOTYPE OR ANTI-IDIOTYPE ANTIBODY
966 INVOLVING AN ENZYME SYSTEM WITH HIGH TURNOVER RATE OR COMPLEMENT MAGNIFIED ASSAY (E.G., MULTI-ENZYME SYSTEMS, ETC.)

967 STANDARDS, CONTROLS, MATERIALS (E.G., VALIDATION STUDIES, BUFFER SYSTEMS, ETC.)
968 HIGH ENERGY SUBSTRATES (E.G., FLUORESCENT, CHEMILUMINESCENT, RADIOACTIVE, ETC.)
969 MULTIPLE LAYERING OF REACTANTS
970 TEST STRIP OR TEST SLIDE
971 CAPTURE OF COMPLEX AFTER ANTIGEN-ANTIBODY REACTION
972 MODIFIED ANTIBODY (E.G., HYBRID, BIFUNCTIONAL, ETC.)
973 SIMULTANEOUS DETERMINATION OF MORE THAN ONE ANALYTE
974 AIDS RELATED TEST
975 KIT

500	THYROID HORMONE TESTS (E.G., T3, T4, TBG, TBH, ETC.)
501	BIOSPECIFIC LIGAND BINDING ASSAY
502	.Limulus lysate
503	.Utilizing isolate of tissue or organ as binding agent
504	..Radioactive label
505	...B12 or folate
506	FOR PREEXISTING IMMUNE COMPLEX OR AUTO-IMMUNE DISEASE
507	.Immune complex
508	.Antinuclear (e.g., DNA, etc.)
509	.Rheumatoid factors
510	IMMUNOCHEMICAL VENERAL DISEASE, PREGNANCY OR CHROMOSOME DETERMINATION
511	.Syphilis, gonorrhea, herpes
512	INVOLVING ANTIBODY FRAGMENTS
513	INVOLVING IgA, IgD, IgE, or IgM
514	INVOLVING DIFFUSION OR MIGRATION OF ANTIGEN OR ANTIBODY
515	.Through a gel (e.g., Ouchterlony technique, etc.)
516	..Immunoelectrophoresis
517	INVOLVING KINETIC MEASUREMENT OF ANTIGEN-ANTIBODY REACTION
518	INVOLVING AN INSOLUBLE CARRIER FOR IMMOBILIZING IMMUNOCHEMICALS
519	.Carrier is a biological cell or cell fragment
520	..Red blood cell
521	...Fixation or stabilization of red blood cells
522	...Lysis of red blood cell membrane
523	.Carrier is particulate and the particles are of intentionally different sizes or impregnated differently with the immunochemicals
524	.Carrier is inorganic
525	..Metal or metal coated
526	...Magnetic
527	..Glass or silica
528	.Carrier is organic
529	..Polysaccharide, carrier (e.g., dextran, etc.)
530	...Cellulose or derivative
531	..Carrier is synthetic resin
532	...Antigen or antibody attached to a carrier via bridging agent
533	....Carrier is water suspendible particles (e.g., latex, etc.)
534	...Carrier is water suspendible particles
535	..Antigen or antibody entrapped within the carrier (e.g., gel, hollow fibre, etc.)
536	INVOLVING IMMUNE COMPLEX FORMED IN LIQUID PHASE
537	.Signal modification or steric inhibition
538	.Separation of immune complex from unbound antigen or antibody
539	..Involving precipitating reagent
540	...Double or second antibody
541	..Absorbent column, particles or resin strip
542	..Involving radioactive labeling
543	INVOLVING PRODUCING OR TREATING ANTIGEN OR HAPTEN
544	.Producing labeled antigens
545	..Radioactive label
546	..Fluorescent label
547	INVOLVING PRODUCTION OR TREATMENT OF ANTIBODY
548	.Monoclonal antibody
1	PROCESS OR COMPOSITION FOR STERILITY OR PACKAGE INTEGRITY TEST
2	PROCESS OR COMPOSITION FOR DETERMINATION OF PHYSICAL STATE OR PROPERTY BY MEANS INCLUDING A CHEMICAL REACTION
3	.Leak detection
4	.Of crystal or crystalline material
5	.Surface area, porosity, imperfection, or alteration
6	.Corrosion resistance or power
7	.By thermoparticulating composition
8	COMPOSITION FOR STANDARDIZATION, CALIBRATION, SIMULATION, STABILIZATION, PREPARATION OR PRESERVATION; PROCESSES OF USE IN PREPARATION FOR CHEMICAL TESTING
9	.Simulative of a gaseous composition
10	.Particle count or volume standard or control (e.g., platelet count standards, etc.)
11	.Blood gas standard or control
12	.Bilirubin or uric acid standard or control
13	.Lipid, cholesterol, or triglyceride standard or control
14	.Glucose, ketone, nitrate standard or control
15	.Protein or peptide standard or control (e.g., hemoglobin, etc.)
16	.Blood serum or blood plasma standard or control
17	.Preparation composition (e.g., lysing or precipitation, etc.)
18	.Preservative, buffer, anticoagulant or diluent
19	.Inorganic standards or controls
20	FOOD OR DAIRY PRODUCTS
21	.Meat or eggs
22	.Dairy product
23	..Milk or butter fat
24	.Wine or alcoholic beverages
25	GEOCHEMICAL, GEOLOGICAL, OR GEOTHERMAL EXPLORATION
26	.For metallic ores
27	.Using chemical tracers
28	.In situ testing
29	.For petroleum oils or carbonaceous minerals
30	..Removing and testing drilling mud or fluid
31	..Removing and testing solid samples
32	...Analyzing evolved gas
33	....Evolving gas by acidification
34	RATE OF REACTION DETERMINATION
35	USING ACTIVATED SPECIE
36	WITH USE OF CONDENSATION NUCLEI
37	TESTING OF CATALYST
38	PURITY OF STEAM OR CHEMICALLY INERT GAS
39	DETERMINATION OF WATER
40	.In petroleum oil, hydrocarbon oil or organic fluid
41	.By use of a cobalt, copper or nickel containing reagent
42	.By use of Karl Fischer Reagent
43	AUTOMATED CHEMICAL ANALYSIS
44	.Utilizing a moving indicator strip or tape
45	.Utilizing a centrifuge or compartmented rotor
46	.With sample on test slide
47	.With conveyance of sample along a test line in a container or rack
48	..With step of insertion or removal from test line
49	..With treatment or replacement of aspirator element (e.g., cleaning, etc.)
50	.Condition or time responsive
51	..With automated titrator

AUTOMATED CHEMICAL ANALYSIS
52 .With a continuously flowing sample or carrier stream
53 ..With formation of a segmented stream
54 .With aspirator of claimed structure
55 CONDITION RESPONSIVE CONTROL
56 TRACERS OR TAGS
57 INCLUDING USE OF RADIOACTIVE PROPERTIES
58 .Dosage determination of high energy radition, (e.g., use of an X-ray dosimeter, etc.)
59 .Including pyrolysis of radioactive material
60 LUBRICANT, GREASE, MINERAL OIL, HYDROCARBON OIL PRODUCT, OR FATS OR LIPIDS FOR OXIDATION (E.G., BREAKDOWN PRODUCTS OR CONTAMINATION, ETC.)
61 .Acidity, basicity or neutralization number
62 OXYGEN DEMAND (E.G., BOD, TOD, COD, ETC.)
63 BIOLOGICAL CELLULAR MATERIAL TESTED
64 CANCER
65 PREGNANCY OR OVULATION
66 HEMOGLOBIN, MYOGLOBIN, OR OCCULT BLOOD
67 .Glycosylated hemoglobin
68 BLOOD GAS (E.G., OXYGEN, CARBON DIOXIDE, BLOOD, pH, ETC.)
69 CLOTTING OR CLOTTING FACTOR-LEVEL TESTS
70 SEDIMENTATION RATE OR HEMATOCRIT
71 LIPIDS, TRIGLYCERIDES, CHOLESTEROL, OR LIPOPROTEINS
72 SILICON CONTAINING
73 METAL OR METAL CONTAINING
74 .Present in biological fluids (e.g., blood, urine, etc.)
75 .Oxide or gas content of metal (e.g., determination of dissolved gases, etc.)
76 .Organometallic compound determined
77 ..Group IVA (e.g., Ge, Sn, Pb, etc.)
78 .Presence of a component of steel
79 .Group IA or IIA (e.g., Li, Na, K, Rb, Cs, Fr, Be, Mg, Ca, Sr, Ba, Ra, etc.)
80 .Group IB (e.g., Cu, Ag, Au, etc.)
81 .Group IIB, IIIB, or Actinides, or Lanthanides (e.g., Zn, Cd, Hg, Sc, Y, etc.)
82 ..Lanthanide or Actinide
83 .Group IVB, VB, VIB (e.g., Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, etc.)
84 .Group VIIB, VIII (e.g., Mn, Tc, Re, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt)
85 SYNTHETIC OR NATURAL RESIN
86 PEPTIDE, PROTEIN OR AMINO ACID
87 .Glycoproteins (e.g., hormone, etc.)
88 ..Albumin
89 .Amino acid or sequencing procedure
90 ..Alpha or beta amino acid
91 HETEROCYCLIC CARBON COMPOUND (I.E., O, S, N, Se, Te, AS ONLY RING HETERO ATOM, ETC.)
92 .Diverse hetero atoms in same or different rings (e.g., alkaloids, opiates, etc.)
93 .Hetero-O (e.g., ascorbic acid, etc.)
94 ..Saccharide (e.g., DNA, etc.)
95 ...Glucose
96 .Hetero-N
97 ..Bile pigment
98 ..Plural nitrogen in the same ring (e.g., barbituates, creatinine, etc.)
99 ...Uric acid
100 INORGANIC ACID OR BASE (E.G., HCL, SULFURIC ACID, ETC.)
101 .Halogen containing
102 .Sulfur containing
103 PHOSPHORUS CONTAINING
104 .Organic (e.g., chemical warfare agents, insecticides, etc.)
105 .Of inorganic phosphorus compound in body fluid
106 NITROGEN CONTAINING
107 .N-Nitroso containing (e.g., nitrosamine, etc.)
108 .Urea or blood urea nitrogen
109 .Cyanide or isocyanide
110 .Nitrite or nitrate
111 .Amine and quartenary ammonium
112 ..Tertiary amine
113 ..Ammonia
114 .Total nitrogen determined
115 ..As part of an elemental analysis
116 .Oxides of nitrogen
117 ..Only nitrogen dioxide
118 ..Both nitrogen oxide and dioxide
119 SULFUR CONTAINING
120 .Organic or sulfhydryl containing (e.g., mercaptan, hydrogen, sulfide, etc.)
121 ..Only hydrogen sulfide
122 .Sulfur dioxide
123 .Total or elemental sulfur
124 HALOGEN CONTAINING
125 .In aqueous solution
126 .Carbon containing compound (e.g., vinylchloride, etc.)
127 OXYGEN CONTAINING
128 .Carbonyl, ether, aldehyde or ketone containing
129 ..Carboxylic acid
130 ..Formaldehyde or acetone
131 .Hydroxyl containing
132 ..Ethanol
133 .Inorganic carbon compounds
134 ..Carbon monoxide only
135 .Ozone or peroxide
136 .Molecular oxygen
137 ..Fuel/air mixture or exhaust gas analysis
138 ..Dissolved or trace oxygen or oxygen content of a sealed environment
139 HYDROCARBON
140 .Aromatic
141 .Acyclic (e.g., methane, octane, isoparaffin, etc.)
142 ..Unsaturated (e.g., ethylene, diene, etc.)
143 .Total hydrocarbon, flammability, combustibility (e.g., air-fuel mixture, etc.)
144 HYDROGEN, PER SE
145 CARBON CONTAINING
146 .In an aqueous solution (e.g., TOC, etc.)
147 MEASUREMENT INCLUDES TEMPERATURE CHANGE OF THE MATERIAL BEING ANALYZED (E.G., CALORIMETRY, ETC.)
148 MEASUREMENT INCLUDES CHANGE IN VOLUME OR PRESSURE
149 MEASUREMENT OF ELECTRICAL OR MAGNETIC PROPERTY OR THERMAL CONDUCTIVITY
150 .Of a liquid
151 .By means of a solid body in contact with a fluid
152 ..Solid body contains a combustion catalyst
153 .Of an ionized gas
154 ..Flame ionization
155 PYROLYSIS, COMBUSTION, OR ELEVATED TEMPERATURE CONVERSION
156 .Explosibility
157 .Multiple stages of heating or heating at multiple temperatures or application of temperature gradient
158 .Dividing or separating a sample stream

	PYROLYSIS, COMBUSTION, OR ELEVATED TEMPERATURE CONVERSION
159	.With catalyst or accelerator
160	.Combustion with oxygen containing gas
161	INCLUDING CHROMATOGRAPHY
162	.Utilizing paper or thin layer plate
163	INCLUDING TITRATION OR pH DETERMINATION
164	OPTICAL RESULT
165	.With claimed manipulation of container to effect reaction or use of container of claimed optical structure
166	.Including reagent preparation
167	.Including gas absorption in liquid or solid
168	..Liquid sorbent
169	.With reagent in absorbent or bibulous substrate
170	..Plural superposed layers
171	.Spectrum analysis (e.g., flame photometry, etc.)
172	.With fluorescence or luminescence
173	NUCLEAR MAGNETIC RESONANCE, ELECTRON SPIN RESONANCE OR OTHER SPIN EFFECTS OR MASS SPECTROMETRY
174	INCLUDING SAMPLE PREPARATION
175	.Digestion or removing interfering materials
176	.Stabilizing or preserving
177	.Liberation or purification of sample or separation of material from a sample (e.g., filtering, centrifuging, etc.)
178	..Including use of a solid sorbent, semipermeable membrane, or liquid extraction
179	.Dilution
180	.Volumetric liquid transfer
181	.Gaseous sample or with change of physical state
182	ELEMENT OR INORGANIC COMPOUND
183	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS RELATED TO ANTIGEN-ANTIBODY
	******************************
800	FLUORESCENT DYES (E.G., RHODAMINE, ETC.)
801	ELECTRON DENSE COMPOUNDS (E.G., FERRITIN, ETC.)
802	PROTEIN-BACTERIOPHAGE CONGUGATES
803	STABLE FREE RADICALS (E.G., SPIN LABELED IMMUNOASSAY, ETC.)
804	RADIOISOTOPE (E.G., RADIOIMMUNOASSAY, ETC.)
805	OPTICAL PROPERTY
806	ELECTRICAL PROPERTY OR MAGNETIC PROPERTY
807	APPARATUS INCLUDED IN PROCESS CLAIM (E.G., PHYSICAL SUPPORT STRUCTURES, ETC.)
808	.Automated or kit
809	.Multifield plates or multicontainer arrays
810	.Tube, bottle, or dipstick
811	TEST FOR NAMED DISEASE, BODY CONDITION OR ORGAN FUNCTION
812	.Infectious mononucleosis
813	.Cancer
814	.Pregnancy
815	TEST FOR NAMED COMPOUND OR CLASS OF COMPOUNDS
816	.Alkaloids, amphetamines, and barbiturates
817	.Steroids or hormones
818	..Human chorionic gonadotropin
819	MULTIFUNCTIONAL ANTIGEN OR ANTIBODY
820	HEPATITIS ASSOCIATED ANTIGENS AND ANTIBODIES
821	INVOLVING COMPLEMENT FACTORS OR COMPLEMENT SYSTEMS
822	IDENTIFIED HAPTEN
823	IMMUNOGENIC CARRIER OR CARRIER PER SE
824	IMMUNOLOGICAL SEPARATION TECHNIQUES
825	PRETREATMENT FOR REMOVAL OF INTERFERING FACTORS FROM SAMPLE
826	ADDITIVES (E.G., BUFFERS, DILVENTS, PRESERVATIVES)
827	LECTINS
828	PROTEIN A
829	LIPOSOMES (E.G., ENCAPSULATION, ETC.)
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
900	BREATH TESTING
901	DRUGS OF ABUSE (E.G., NARCOTICS, AMPHETAMINE, ETC.)
902	DOSIMETER
903	DIAZO REACTIONS
904	OXIDATION - REDUCTION INDICATORS
905	PHOTOCHEMICAL ACTIVATION OF REACTIONS
906	FERTILITY TESTS
907	FETAL LUNG MATURITY
908	GRAVIMETRIC ANALYSIS
909	NEPHELOMETRY
910	IRON-BINDING CAPACITY OF BLOOD

CLASS 437 SEMICONDUCTOR DEVICE MANUFACTURING: PROCESS

DECEMBER 1990

In this schedule, some subclasses are based on groupings of elements in the periodic chart. Below are listed elements in the groups as used in the schedule as of date of publication. The listings of elements is not complete and other elements will be added as they become used in subject matter of Class 437.

Group II: Zn(Zinc), Cd(Cadium), Hg(Mercury)
Group III: B(Boron), Al(Aluminum), Ga(Gallium), In(Indium)
Group IV: C(Carbon), Si(Silicon), Ge(Germanium), Sn(Tin), Pb(Lead)
Group V: N(Nitrogen), P(Phosphorus), As(Arsenic), Sb(Antimony), Bi(Bismuth)
Group VI: O(Oxygen), S(Sulfur), Se(Selenium), Te(Tellurium)

1 MAKING DEVICE HAVING ORGANIC SEMICONDUCTOR COMPONENT
2 MAKING DEVICE RESPONSIVE TO RADIATION
3 .Radiation detectors, e.g., infrared, etc.
4 .Composed of polycrystalline material
5 .Having semiconductor compound
6 MAKING THYRISTOR, E.G., DIAC, TRIAC, ETC.
7 INCLUDING CONTROL RESPONSIVE TO SENSED CONDITION
8 INCLUDING TESTING OR MEASURING
9 INCLUDING APPLICATION OF VIBRATORY FORCE
10 INCLUDING GETTERING
11 .By ion implanting or irradiating
12 .By layers which are coated, contacted, or diffused
13 .By vapor phase surface reaction
14 THERMOMIGRATION
15 INCLUDING FORMING A SEMICONDUCTOR JUNCTION
16 .Using energy beam to introduce dopant or modify dopant distribution
17 ..Neutron, gamma ray or electron beam
18 ..Ionized molecules
19 ..Coherent light beam
20 ..Ion beam implantation
21 ...Of semiconductor on insulating substrate
22 ...Of semiconductor compound
23 ....Light emitting diode (LED)
24 ...Providing nondopant ion including proton
25 ...Providing auxiliary heating
26 ...Forming buried region
27 ...Including multiple implantations of same region
28 ....Through insulating layer
29 .....Forming field effect transistor (FET) type device
30 ....Using same conductivity type dopant
31 ....Forming bipolar transistor (NPN/PNP)
32 .....Lateral bipolar transistor
33 .....Having dielectric isolation
34 ....Forming complementary MOS (metal oxide semiconductor)
35 ...Using oblique beam
36 ...Using shadow mask
37 ...Having projected range less than thickness of dielectrics on substrate
38 ...Into shaped or grooved semiconductor substrate
39 ...Involving Schottky contact formation
40 ...Forming pair of device regions separated by gate structure, i.e., FET
41 ....Self-aligned
42 .....Gate structure constructed of diverse dielectrics
43 .....Gate surrounded by dielectric layer, e.g., floating gate, etc.
44 .....Adjusting channel dimension
45 .....Active step for controlling threshold voltage
46 ...Into polycrystalline or polyamorphous regions
47 ...Integrating active with passive devices
48 ...Forming plural active devices in grid/arrays, e.g., RAMS/ROMS, etc.
49 ....Having multi-level electrodes
50 ...Forming electrodes in laterally spaced relationships
51 .Making assemblies of plural individual devices having community feature, e.g., integrated circuit, electrical connection, etc.
52 ..Memory devices
53 ..Charge coupled devices (CCD)
54 ..Diverse types
55 ...Integrated injection logic (I2L) circuits
56 ...Plural field effect transistors (CMOS)
57 ....Complementary metal oxide having diverse conductivity source and drain regions
58 ....Having like conductivity source and drain regions
59 ...Including field effect transistor
60 ...Including passive device
61 .Including isolation step
62 ..By forming total dielectric isolation
63 ..By forming vertical isolation combining dielectric and PN junction
64 ..Using vertical dielectric (air-gap/insulator) and horizontal PN junction
65 ...Grooved air-gap only
66 ....V groove
67 ...Grooved and refilled with insulator
68 ....V groove
69 ...Recessed oxide by localized oxidation
70 ....Preliminary formation of guard ring
71 ....Preliminary anodizing
72 ....Preliminary etching of groove
73 .....Using overhanging oxidation mask and pretreatment of recessed walls
74 ..Isolation by PN junction only
75 ...By diffusion from upper surface only
76 ...By up-diffusion from substrate region and down diffusion into upper surface layer
77 ....Substrate and epitaxial regions of same conductivity type, i.e., P or N
78 ...By etching and refilling with semiconductor material having diverse conductivity
79 ...Using polycrystalline region
80 .Shadow masking
81 .Doping during fluid growth of semiconductor material on substrate
82 ..Including heat to anneal

INCLUDING FORMING A SEMICONDUCTOR JUNCTION
.Doping during fluid growth of semiconductor material on substrate
83 ..Growing single crystal on amorphous substrate
84 ..Growing single crystal on single crystal insulator (SOS)
85 ..Including purifying stage during growth
86 ..Using transitory substrate
87 ..Using inert atmosphere
88 ..Using catalyst to alter growth process
89 ..Growth through opening
90 ...Forming recess in substrate and refilling
91 ....By liquid phase epitaxy
92 ...By liquid phase epitaxy
93 ..Specified crystal orientation other than (100) or (111) planes
94 ..Introducing minority carrier life time reducing dopant during growth, i.e., deep level dopant Au(Gold), Cr(Chromium), Fe(Iron), Ni(Nickel), etc.
95 ..Autodoping control
96 ...Compound formed from Group III and Group V elements
97 ..Forming buried regions with outdiffusion control
98 ...Plural dopants simultaneously outdiffusioned
99 ..Growing mono and polycrystalline regions simultaneously
100 ..Growing silicon carbide (SiC)
101 ..Growing amorphous semiconductor material
102 ..Source and substrate in close-space relationship
103 ...Group IV elements
104 ...Compound formed from Group III and Group V elements
105 ..Vacuum growing using molecular beam, i.e., vacuum deposition
106 ...Group IV elements
107 ...Compound formed from Group III and Group V elements
108 ..Growing single layer in multi-steps
109 ...Polycrystalline layers
110 ...Using modulated dopants or materials, e.g., superlattice, etc.
111 ...Using preliminary or intermediate metal layer
112 ...Growing by varying rates
113 ..Using electric current, e.g., Peltier effect, glow discharge etc.
114 ..Using seed in liquid phase
115 ...Pulling from melt
116 ....And diffusing
117 ..Liquid and vapor phase epitaxy in sequence
118 ..Involving capillary action
119 ..Sliding liquid phase epitaxy
120 ...Modifying melt composition
121 ...Controlling volume or thickness of growth
122 ...Preliminary dissolving substrate surface
123 ...With nonlinear slide movement
124 ...One melt simulataneously contacting plural substrates
125 ..Tipping liquid phase epitaxy
126 ..Heteroepitaxy
127 ...Multi-color light emitting diode (LED)
128 ...Graded composition
129 ...Forming laser
130 ...By liquid phase epitaxy
131 ...Si(Silicon) on Ge(Germanium) or Ge(Germanium) on Si(Silicon)
132 ...Either Si(Silicon) or Ge(Germanium) layered with or on compound formed from Group III and Group V elements
133 ...Compound formed from Group III and Group V elements on diverse Group III and Group V including substituted Group III and Group V compounds
134 .By fusing dopant with substrate, e.g., alloying, etc.
135 ..Using flux
136 ..Passing electric current through material
137 ..With application of pressure to material during fusing
138 ..Including plural controlled heating or cooling steps
139 ..Including diffusion after fusion step
140 ..Including additional material to improve wettability or flow characteristics
141 .Diffusing a dopant
142 ..To control carrier lifetime, i.e., deep level dopant Au(Gold), Cr(Chromium), Fe(Iron), Ni(Nickel), etc.
143 ..Al(Aluminum) dopant
144 ..Li(Lithium) dopant
145 ..Including nonuniform heating
146 ..To solid state solubility concentration
147 ..Using multiple layered mask
148 ...Having plural predetermined openings in master mask
149 ..Forming partially overlapping regions
150 ..Plural dopants in same region, e.g., through same mask opening, etc.
151 ...Simultaneously
152 ..Plural dopants simultaneously in plural regions
153 ..Single dopant forming plural diverse regions
154 ...Forming regions of different concentrations or of different depths
155 ..Using metal mask
156 ..Outwardly
157 ..Laterally under mask
158 ..Edge diffusion by using edge portion of structure other than masking layer to mask
159 ..From melt
160 ..From solid dopant source in contact with substrate
161 ...Using capping layer over dopant source to prevent out diffusion of dopant
162 ...Polycrystalline semiconductor source
163 ...Organic source
164 ...Glassy source or doped oxide
165 ..From vapor phase
166 ...In plural stages
167 ...Zn(Zinc) dopant
168 ...Solid source in operative relation with semiconductor material
169 ....In capsule type enclosure
170 DIRECTLY APPLYING ELECTRICAL CURRENT
171 .And regulating temperature
172 .Altering or pulsed current
173 APPLYING CORPUSCULAR OR ELECTROMAGNETIC ENERGY
174 .To anneal
175 FORMING SCHOTTKY CONTACT
176 .On semiconductor compound
177 ..Multi-layer elctrode

FORMING SCHOTTKY CONTACT
178 .Using Platinum Group silicide, i.e., silicide of Pt(Platinum), Pd(Palladium), Rh(Rhodium), Ru(Ruthenium),Ir(Iridium), Os(Osmium)
179 .Using metal, i.e., Pt(Platinum), (Pd(Palladum), Rh(Rhodium, (Ru(Rutenium), Ir(Iridium, Os(Osmium), Au(Gold), Ag(Silver
180 MAKING OR ATTACHING ELECTRODE ON OR TO SEMICONDUCTOR, OR SECURING COMPLETED SEMICONDUCTOR TO MOUNTING OR HOUSING
181 .Forming transparent electrode
182 .Forming beam electrode
183 .Forming bump electrode
184 .Electrode formed on substrate composed of elements of Group III and Group V semiconductor compound
185 .Electrode formed on substrate composed of elements of Group II and Group VI semiconductor compound
186 .Single polycrystalline electrode layer on substrate
187 .Single metal layered electrode on substrate
188 ..Subsequently fusing, e.g., alloying, sintering, etc.
189 .Forming plural layered electrode
190 ..Including central layer acting as barrier between outer layers
191 ..Of polysilicon only
192 ..Includng refractory metal layer of Ti(Titanium), Zr(Zirconium), Hf(Hafnium), V(Vanadium), Nb(Niobium), Ta(Tantalum), Cr(Chromium), Mo(Molybdenum), W(Tungsten)
193 ..Including polycrystalline silicon layer
194 ..Including Al(Aluminum) layer
195 ..Including layer separated by insulator
196 .Forming electrode of alloy or electrode of a compound of Si(Silicon)
197 ..Al(Aluminum) alloy
198 ...Including Cu(Copper)
199 ...Including Si(Silicon)
200 ..Silicide of Ti(Titanium), Zr(Zirconium), Hf(Hafnium), V(Vanadium), Nb(Niobium), Ta(Tantalum), Cr(Chromium), Mo(Molybdenum), W(Tungsten)
201 ..Of plantinum metal group Ru(Ruthenium), Rh(Rhodium), Pd(Palladium), Os(Osmium, Ir(Iridium), Pt(Platinum)
202 ..By fusing metal with semiconductor (alloying)
203 .Depositing electrode in preformed recess in substrate
204 .Including positioning of point contact
205 .Making plural devices
206 ..Using strip lead frame
207 ...And encapsulating
208 ..Stacked array, e.g., rectifier, etc.
209 .Securing completed semiconductor to mounting, housing or external lead
210 ..Including contaminant removal
211 ..Utilizing potting or encapsulating material only to surround leads and device to maintain position, i.e., without housing
212 ...Including application of pressure
213 ...Glass material
214 ..Utilizing header (molding surface means)
215 ..Insulating housing
216 ...Including application of pressure
217 ...And lead frame
218 ...Ceramic housing
219 ...Including encapsulating
220 ..Lead frame
221 ..Metallic housing
222 ...Including applicaion of pressure
223 ...Including glass support base
224 ...Including encapsulating
225 INCLUDING COATING OR MATERIAL REMOVAL, E.G., ETCHING, GRINDING, ETC.
226 .Substrate dicing
227 ..With a perfecting coating
228 .Coating and etching
229 .Of radiation resist layer
230 .By immersion metal plating from solution, i.e., electroless plating
231 .By spinning
232 .Elemental Se(Selenium) substrate or coating
233 .Of polycrystalline semiconductor material on substrate
234 ..Semiconductor compound or mixed semiconductor material
235 .Of a dielectric or insulatve material
236 ..Containing Group III atom
237 ...By reacting with substrate
238 ..Monoxide or dioxide of Ge(Germanium) or Si(Silicon)
239 ...By reacting with substrate
240 ...Doped with impurities
241 ..Si(Silicon) and N(Nitrogen)
242 ...By chemical reaction with substrate
243 ..Directly on semiconductor substrate
244 ...By chemical conversion of substrate
245 .Comprising metal layer
246 ..On metal
247 TEMPERATURE TREATMENT MODIFYING PROPERTIES OF SEMICONDUCTOR, E.G., ANNEALING, SINTERING, ETC.
248 .Heating and cooling
249 INCLUDING SHAPING
250 MISCELLANEOUS
****
CROSS-REFERENCE ART COLLECTIONS
****
900 UTILIZING PROCESS EQUIVALENTS OR OPTIONS
901 MAKING PRESSURE SENSITIVE DEVICE
902 MAKING DEVICE HAVING HEAT SINK
903 MAKING THERMOPILE
904 MAKING DIODE
905 .Light emmitting diode
906 ..Mounting and contact
907 LASER PROCESSING OF FIELD EFFECT TRANSISTOR (FET)
908 LASER PROCESSING OF TRANSISTOR
909 MAKING TRANSISTOR ONLY
910 MAKING JOSEPHSON JUNCTION DEVICE
911 MAKING JUNCTION-FIELD EFFECT TRANSISTOR (J-FET) OR STATIC INDUCTION THYRSISTOR (SIT) DEVICE
912 MAKING METAL SEMICONDUCTOR FIELD EFFECT TRANSISTOR (MESFET) DEVICE ONLY
913 MAKING METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (MOSFET) DEVICE
914 MAKING NON-EPITAXIAL DEVICE
915 MAKING VERTICALLY STACKED DEVICES (3-DIMENSIONAL STRUCTURE)
916 MAKING PHOTOCATHODE OR VIDICON
917 MAKING LATERAL TRANSISTOR
918 MAKING RESISTOR
919 MAKING CAPACITOR
920 MAKING SILICON-OXIDE-NITRIDE-OXIDE ON SILICON (SONOS) DEVICE
921 MAKING STRAIN GAGE
922 MAKING FUSE OR FUSABLE DEVICE
923 WITH REPAIR OR RECOVERY OF DEVICE
924 HAVING SUBSTRATE OR MASK ALIGNING FEATURE

925	SUBSTRATE SUPPORT OR CAPSULE CONSTRUCTION
926	CONTINUOUS PROCESSING
927	FORMING HOLLOW BODIES AND ENCLOSED CAVITIES
928	ENERGY BEAM TREATING RADIATION RESIST ON SEMICONDUCTOR
929	RADIATION ENHANCED DIFFUSION (R.E.D.)
930	ION BEAM SOURCE AND GENERATION
931	IMPLANTATION THROUGH MASK
932	RECOIL IMPLANTATION
933	DUAL SPECIES IMPLANTATION OF SEMICONDUCTOR
934	DOPANT ACTIVATION PROCESS
935	BEAM WRITING OF PATTERNS
936	BEAM PROCESSING OF COMPOUND SEMICONDUCTOR DEVICE
937	HYDROGEN PLASMA TREATMENT OF SEMICONDUCTOR DEVICE
938	MAKING RADIATION RESISTANT DEVICE
939	DEFECT CONTROL OF SEMICONDUCTOR WAFER (PRETREATMENT)
940	SELECTIVE OXIDATION OF ION AMORPHOUSIZED LAYERS
941	CONTROLLING CHARGING STATE AT SEMICONDUCTOR-INSULATOR INTERFACE
942	INCOHERENT LIGHT PROCESSING
943	THERMALLY ASSISTED BEAM PROCESSING
944	UTILIZING LIST OFF
945	STOICHIOMETRIC CONTROL OF HOST SUBSTRATE COMPOSITION
946	SUBSTRATE SURFACE PREPARATION
947	FORMING TAPERED EDGES ON SUBSTRATE OR ADJACENT LAYERS
948	MOVABLE MASK
949	CONTROLLED ATMOSPHERE
950	SHALLOW DIFFUSION
951	AMPHOTERIC DOPING
952	CONTROLLING DIFFUSION PROFILE BY OXIDATION
953	DIFFUSION OF OVERLAPPING REGIONS (COMPENSATION)
954	VERTICAL DIFFUSION THROUGH A LAYER
955	NONSELECTIVE DIFFUSION
956	DISPLACING P-N JUNCTION
957	ELECTROMIGRATION
958	SHAPED JUNCTION FORMATION
959	USING NONSTANDARD DOPANT
960	WASHED EMITTER PROCESS
961	EMITTER DIP PREVENTION (OR UTILIZATION)
962	UTILIZING SPECIAL MASKS (CARBON, ETC.)
963	LOCALIZED HEATING CONTROL DURING FLUID GROWTH
964	FLUID GROWTH INVOLVING VAPOR-LIQUID-SOLID STAGES
965	FLUID GROWTH OF COMPOUNDS COMPOSED OF GROUPS II, IV, OR VI ELEMENTS
966	FORMING THIN SHEETS
967	PRODUCING POLYCRYSTALLINE SEMICONDUCTOR MATERIAL
968	SELECTIVE OXIDATION OF POLYCRYSTALLINE LAYER
969	FORMING GRADED ENERGY GAP LAYERS
970	DIFFERENTIAL CRYSTAL GROWTH
971	FLUID GROWTH DOPING CONTROL
972	UTILIZING MELT-BACK
973	SOLID PHASE EPITAXIAL GROWTH
974	THINNING OR REMOVAL OF SUBSTRATE
975	DIFFUSION ALONG GRAIN BOUNDARIES
976	CONTROLLING LATTICE STRAIN
977	UTILIZING ROUGHENED SURFACE
978	UTILIZING MULTIPLE DIELECTRIC LAYERS
979	UTILIZING THICK-THIN OXIDE FORMATION
980	FORMING POLYCRYSTALLINE SEMICONDUCTOR PASSIVATION
981	PRODUCING TAPERED ETCHING
982	REFLOW OF INSULATOR
983	OXIDATION OF GATE OR GATE CONTACT LAYER
984	SELF-ALIGNING FEATURE
985	DIFFERENTIAL OXIDATION AND ETCHING
986	DIFFUSING LATERALLY AND ETCHING
987	DIFFUSING DOPANTS IN COMPOUND SEMICONDUCTOR

CLASS 439 ELECTRICAL CONNECTORS

DECEMBER 1990

1 INTERRELATED CONNECTORS RELATIVELY MOVABLE DURING USE
2 .And antivibration mounting
3 .With means to apply lubricant or coolant
4 .With storage means for flaccid conductor
5 .Having liquid contact
6 .Universal movement
7 ..Having "nonsolid" contact, e.g., fibrous or pelletized bed
8 ..Parts comprisng ball and socket
9 ..One part having flexible contact fingers
10 .Compound movement, e.g., rotary + linear
11 .Movement about axis
12 ..Including stacked plates used as conductor
13 ..Rotary movement
14 ...Between cable and screw-type contact shell
15 ...Part comprising hand wheel, e.g., steering wheel
16 ...Part comprising vehicle wheel
17 ...Including ball or roller bearing used as conductor
18 ...Including annular contact
19 ....Rolling contact
20 ....Coaxial annular contacts
21 .....Concentric
22 .....Having axially facing contact surface
23 .....Having radially outwardly facing contact surface
24 ......Three or more such contacts
25 ....Engaged by resiliently biased contact
26 ....Laterally biased finger contact
27 ....Having axially facing contact surface
28 ....Having radially outwardly facing contact surface
29 ...Including resiliently biased contact
30 ....Contact having resilient shank
31 ..Hinge
32 .Linear movement
33 ..Expansion joint
34 WITH VEHICLE STRUCTURE
35 .Connection to towed vehicle
36 .Connection to lamp
37 WITH WEARING APPAREL
38 WITH MAGNET
39 .To urge mating connectors together
40 .To urge connector to supporting surface
41 WITH VACUUM APPLYING MEANS. E.G., SUCTION CUP
42 .To urge mating connectors or contacts together
43 WITH SELECTABLE CIRCUIT, E.G., PLUG BOARD
44 .Planar circuit overlying a second planar circuit, both adapted to be electrically connected
45 ..Connected by transversely inserted pin
46 ...Pin having selection feature
47 ...Panel member having planar surface for supporting circuit and parallel surface for supporting second circuit
48 ...Linear conductors of first surface; linear, normally disposed, conductors in second circuit
49 .Including three or more contacts adapted to be selectively interconnected
50 ..Panel having planar contact array with mating panel having mating planar contact array
51 ...Mounted for controlled movement with respect thereto
52 .Coupling part including repositionable contact
53 .Coupling part with selectably oriented mating part
54 .Test panel
55 PREFORMED PANEL CIRCUIT ARRANGEMENT, E.G., PCB, ICM, DIP, CHIP, WAFER, ETC.
56 .Connection to lamp or electron tube
57 ..Movable about its axis
58 ..Electron tube moved perpendicularly to panel circuit
59 .With mating connector which receives panel circuit edge
60 ..Contacts at different distances from lead panel circuit edge
61 ..Receives plural panel circuit edges
62 ..Panel mounted connector which receives edge of panel circuit
63 .For receiving coaxial connector
64 .With guide for directing panel circuit movement
65 .With provision to conduct electricity from panel circuit to another panel circuit
66 ..Conductor is compressible and to be sandwiched between panel circuits
67 ..Flexible panel
68 ..Micro panel circuit arrangement, e.g., ICM, DIP, chip, wafer, etc.
69 ...Overlying second, coextensive micro panel circuit arrangement
70 ...Dual inline package (DIP)
71 ....Leadless
72 ....Contacts extending parallel with DIP at contact surface
73 ....With external, contact enhancing clamp
74 ..Overlying second preformed panel circuit, both adapted to be electrically connected
75 ...Connected by transversely inserted pin
76 .Within distinct housing spaced from panel circuit arrangement
77 .Flexible panel
78 .Distinct contact secured to panel circuit
79 ..Panel circuit adapted to move along panel plane relative to coupling part for insertion of male contact
80 ...Resilient contact or to receive resilient contact
81 ..Resilient contact or to receive resilient contact
82 ...In or for use in panel circuit aperture
83 ..Contact soldered to panel circuit
84 ..Contact secured to panel circuit by deformation
85 .Of layers of insulation
86 INCLUDING ELASTOMERIC OR NONMETALLIC CONDUCTIVE PORTION
87 .Rigid carbon conductive member
88 .Inductive shielding or arc suppressing means
89 ..Sealing with coupled connector
90 ..Between parallel conductors
91 .Adapted to be sandwiched between preformed panel circuit arrangements
92 WITH CIRCUIT CONDUCTORS AND SAFETY GROUNDING PROVISION
93 .And means to block access to power contact surface

WITH CIRCUIT CONDUCTORS AND SAFETY GROUNDING PROVISION
94 .Uninterrupted support rail or contact, or for interfitting with uninterrupted support rail or contact
95 .Grounding to connector container or housing
96 ..Pliable conductor for making grounding connection of connector to container
97 ..By means of connector mounting screw
98 .Grounding to conductive sheath of cable
99 ..Portion of connector beneath conductive sheath
100 .Grounding to pipe, rod or conduit
101 .Direct grounding of coupling part member passing into aperture
102 ..Prong having locking provision, e.g., bayonet
103 ..Movable or removable ground prong
104 ...Pivotable or rotatable about transverse axis
105 ..Adapter
106 ..Three-prong coupling part including ground prong, or receptacle
107 ...Duplex receptacle
108 .Grounding of coupling part
109 INTERMEDIATE MEMBER BETWEEN PRONG AND ENCOMPASSING PLANAR GROUND
110 UNINTERRUPTED SUPPORT RAIL OR UNINTERRUPTED CONTACT
111 .Arcuate, bendable or pliant rail or contact
112 ..Circular rail or contact
113 .With access restricting cover
114 ..Bus duct
115 .With means to join tandem rails or tandem contacts
116 .With coupling movement-actuating means or retaining means in addition to contact of coupling part
117 ..Uninterrupted contact accessible by mating contact moving in a first, then a lateral direction
118 ...Bayonet coupling part movable about axis
119 .With mating part having mating connector portion and another connector portion electrically connected thereto, e.g., adapter
120 .Molding type; e.g., baseboard
121 FOR INTERFITTING WITH UNINTERRUPTED SUPPORT RAIL OR UNINTERRUPTED CONTACT
122 .Coupling part with actuating means urging contact surface to move with respect to rest of connector and toward mating contact
123 CANDLE SIMULATION TYPE
124 .Adapter
125 HAVING SPARK OR GLOW PLUG COVER
126 .Inductive shielding; e.g., radio disturbance
127 .With distinct securing means
128 .Having removable closure
129 MAGNETO POST TYPE
130 MULTICONTACT INTERNAL COMBUSTION ENGINE DISTRIBUTOR CAP OR MULTICONTACT MATING PART
131 CONNECTOR MOVABLE BETWEEN ACCESSIBLE AND INACCESSIBLE POSITIONS
132 .With fluid pressure operating or control means
133 WITH UNAUTHORIZED CONNECTION PREVENTER, E.G., KEY OR COMBINATION LOCK
134 .Prong cover
135 WITH CONTACT PREVENTER OR RETRACTABLE COVER PART
136 .Movably mounted
137 ..Moved by mating connector
138 ...Moved about an axis
139 ....Connector moved rectilinearly for engagement, preventer or cover moved about axis parallel to direction of connector movement
140 ...Connector moved rectilinearly for engagement, preventer or cover moved rectilinearly and parallel thereto
141 ....Retractable sheath
142 ..Movable about axis
143 ...To misalign aperture with contact
144 ...With connector retaining means in addition to contact of connector
145 ..Movable to misalign aperture with contact
146 .Adapted to fit between contacts of first and second coupled connectors (e.g., power measuring meter)
147 .With connector retaining means in addition to contact of connector
148 .Dummy connector
149 .Prong cover
150 ..Protector for electron tube pin
151 COUPLING PART COMBINED WITH MEANS TO ALLOW REPOSITIONING OF MATING PART FOR ENGAGEMENT WITH DIFFERENT CONTACTS ON MATING PART; E.G., FLASH CUBE
152 WITH COUPLING SEPARATOR
153 .Including retainer or joiner
154 ..Destructible retainer
155 ..Distinct from separator
156 ...Coaxial contacts, center one comprising separator, e.g., photo flash
157 ..Integral retainer and cam separator
158 .Means to utilize direct fluid action
159 .Nonconducting pusher
160 ..Including handle for direct manual urge to separate
161 HEAT RESPONSIVE CONTACT PRESSURE CONTROL
162 WITH RELATIVELY GUIDED MEMBERS AND INTERMEDIATE PLIABLE CONDUCTOR
163 .Frangible pliable conductor; e.g., umbilical break-away
164 .Relatively movable about axis
165 ..Hinge
166 CONVERTIBLE BY INTERNAL CHANGE TO SELECTIVELY COOPERATE WITH A DIFFERENT CONTACT
167 .Connector for power measuring meter
168 .Lamp or electron tube socket or base
169 .Test probe
170 .Coupling part
171 ..Including repositionable contact
172 ...To nonuse or distinct use (e.g., male/female) position
173 ...To fit differently oriented contact
174 .Including repositionable contact
175 ..To fit different size contact
176 FEMALE COUPLING PART CONVERTIBLE TO MALE COUPLING PART BY ADDITION OF PRONG
177 COUPLING PART CONVERTIBLE TO DISTINCT SHAPE BY ADDITION OF NONREMOVABLE ELEMENT OR BY REMOVAL OF NONREUSABLE ELEMENT
178 FLUENT CONDUCTING MATERIAL
179 .Liquid
180 CONTACT SEPARATION BY SNAP OR QUICK-BREAK ACTION
181 INCLUDING ARC SUPPRESSING OR EXTINGUISHING MEANS
182 .Lamp or electron tube socket
183 .By arc suppressing or extinguishing environment
184 ..Gas
185 ...Gas accomodation by relatively moving parts

INCLUDING ARC SUPPRESSING OR EXTINGUISHING MEANS
186 .Contact encasing chamber
187 ..Movable relative to contact
188 HAVING CIRCUIT INTERRUPTING PROVISION EFFECTED BY MATING OR HAVING "DEAD" CONTACT ACTIVATED AFTER MATING
189 WITH OR COMPRISING REMOVABLE CIRCUIT MODIFYING ARRANGEMENT
190 HAVING RETAINER OR PASSAGEWAY FOR FLUENT MATERIAL
191 .Fluent material transmission line
192 ..Connector electrically joined to line
193 ..For use with line heater
194 ..Electrical connection within line
195 ..Connector/line assembly coupled to mating connector/line assembly by movement about an axis less than 360 degrees
196 .Liquid material to dissipate, remove, or block the flow of heat
197 .For urging contact toward or away from mating contact
198 .Gas retainer
199 .Liquid retainer
200 ..Impregnated material
201 ..Coupling part having contact encompassed by liquid storage chamber
202 ...Contact comprising tapered post or mating part (e.g., battery post)
203 ..Crimped end terminal
204 ..Encompassing wire
205 .Passageway allowing escape of fluent material during mating
206 .Vent
207 WITH CONDUIT OR DUCT
208 .Enclosed conductor electrically connected thereto
209 .Molding type (e.g., baseboard)
210 .Means to join conduit, duct or conductor sections
211 .Including receptacle
212 BUS DUCT
213 .Means to join bus ducts
214 COMPRISING COUPLING PART OF INDETERMINATE LENGTH LATERALLY OF CONNECTION
215 .Included in prefabricated building panel (e.g., floor, ceiling, wall)
216 .Molding type (e.g., baseboard)
217 ALTERNATIVELY CONNECTED
218 .Coupling part
219 ..Test probe
220 ..Lamp or electron tube socket or base
221 ..Contact comprising prong
222 ..Receptacle having distinct openings for distinct prongs
223 ..Receptacle for prong of first lateral dimension or for prong of second lateral dimension
224 .To receive contact from first direction or from second axially distinct direction
225 CONTACT TAP BETWEEN NORMALLY ENGAGED COUPLING PARTS
226 COUPLING PART TO RECEIVE FLUORESCENT OR NEON LAMP
227 .Having curved tubular envelope
228 ..Plural lamps
229 ..Circular lamp
230 .With sealing element or material for cooperation with coupled lamp
231 .With contact for starting switch
232 .With additional retaining or locking means for coupled connector and lamp
233 ..Removable
234 .Adjustably mounted
235 .Plural lamps
236 .Adapter
237 .Separately biased connector
238 ..Pivotable connector
239 .With provision for transverse receipt of lamp contact
240 ..By rotation of lamp about axis
241 ...Contact comprising laterally resilient spring finger
242 .With provision for axial receipt of lamp contact
243 ..Axially biased contact
244 ...Coil spring with provision to utilize conductivity thereof
245 COUPLING PART HAVING HELICALLY DISPOSED STRANDLIKE CONTACT
246 SELF ALIGNING CONTACT
247 .Contact mounted in floating nonconductive holder
248 ..Connector including housing or panel to support holder
249 .Receptacle having two directly opposed contact arms and open sides between arms
250 ..To receive fuse
251 ..To receive rigid bar type connector, e.g.,busbar
252 .Tubular socket
253 SCREW COUPLING PART ENGAGED OR DISENGAGED WITHOUT ROTARY MOTION
254 .Having radially movable thread means
255 ..By axially moving wedge or cam
256 ..Biased toward mating thread
257 ...Socket
258 COUPLING PART WITH LATCHING MEANS AND TETHER OR EXPLOSIVE TO UNLATCH FROM MATING PART
259 COUPLING PART WITH ACTUATING MEANS URGING CONTACT TO MOVE LATERALLY WITH RESPECT TO REST OF COUPLING PART AND TOWARD MATING PART
260 .Having open slot for receiving preformed panel circuit arrangement or tape cable
261 .Pivotable means, one portion actuating contact surface, another portion retaining coupling part
262 .Urging stacked contacts to move with respect to rest of coupling part
263 .Contractile receptacle
264 ..For dual inline coupling part, e.g., DIP
265 .Expandable contact or spreadable contacts
266 COUPLING PART HAVING HANDLE OR MEANS TO MOVE CONTACT LATERALLY TO PERMIT UNCOUPLING
267 .Having open slot for receiving panel circuit arrangement
268 .Expandable, prong receiving socket
269 .To move contact with respect to similar contact
270 .Movable latching prong or latch on prong
271 WITH SEALING ELEMENT OR MATERIAL FOR COOPERATION WITH COUPLED CONNECTOR, E.G., GASKET
272 .Sealing element having cross section that is neither circular nor rectangular
273 ..Tapered cross-section
274 ..Combined with distinct cable sheath sealing element or material
275 .Combined with distinct cable sheath sealing element or material
276 .Including chamber for contact potting

WITH SEALING ELEMENT OR MATERIAL FOR COOPERATION WITH COUPLED CONNECTOR, E.G., GASKET
277 .With helically threaded coupling movement-actuating means or retaining means in addition to contact of coupling part
278 HAVING RESILIENT HOUSING FOR SEALING WITH COUPLED CONNECTOR
279 .Combined with distinct cable sheath sealing element or material
280 .Connector comprising lamp or electron tube socket or base
281 .Having interengageable sealing extension
282 .Housing comprising resilient latching means
283 COUPLED CONNECTOR TO SEALINGLY FIT WITH FIRST CONNECTOR
284 ADAPTED TO COOPERATE WITH DUPLICATE CONNECTOR
285 .Sequentially connected contacts, e.g., zipper type
286 .Engaged by axial and pivotal movements (e.g., bayonet)
287 .Engaged by lateral movement
288 ..Pivotal
289 .Butt coupling
290 .Contact intermeshable with duplicate mating contact
291 ..Plural, electrically distinct contacts
292 .With coupling movement retaining means in addition to contact of coupling part
293 ..Resilient
294 ..With relatively rotatable movement-actuating or retaining ring
295 .Resiliently biased contact
296 WITH COUPLING MOVEMENT-ACTUATING MEANS OR RETAINING MEANS IN ADDITION TO CONTACT OF COUPLING PART
297 .With guiding means for removable automobile radio or record player
298 ..Including resilient latching retaining means
299 .With coupling part retained in connection with mating part by presence of distinct coupling part
300 ..Adapter
301 .Retaining means requiring destruction of element before separation
302 ..Threaded coupling part
303 ...Requiring destruction of lamp envelope
304 .Including lock for retaining means (e.g., key or combination lock or requiring "special" tool)
305 ..Magnetically operated latch
306 ..Threaded coupling part
307 ...Having freely rotatable component to prevent unthreading
308 ...Retaining means entirely exterior of coupling part
309 ...Retaining means comprising part of female coupling part
310 .Retaining means with distinct movement-actuating means to move coupling part axially
311 ..For bayonet (breech) type locking ring
312 .Coupling part with relatively pivotable concentric movement-actuating or retaining ring
313 ..Coupling part having appurtenant means for supporting other structure
314 ..Retaining bayonet
315 ...Having coupling indicating indicia or signal
316 ...Bayonet lug on axially extending finger
317 ...With means to move ring
318 ...With means to prevent bayonet release
319 ...With spring to longitudinally bias movement-actuating or retaining ring
320 ..Threaded ring or ring adapted to engage threaded mating part
321 ...With means to prevent unthreading
322 ...Coupling part having concentric contacts
323 ...Adapter
324 .Male contact pin with blockable retaining means at tip, e.g., Modrey
325 .Coupling part for receiving edge of planar board moving parallel to plane
326 ..With angular mating
327 ..Retaining means exterior of slot
328 ...Fingerlike grasping means comprising portion of coupling part
329 .For direct connection to a flexible tape or printed circuit board
330 .For dual inline package (DIP)
331 ..Movement-actuating or retaining means comprises cover press
332 .Bayonet coupling part movable about its axis
333 ..With distinct means to secure movement-actuating or retaining means against movement
334 ..Coupling part including appurtenant means for supporting other structure
335 ..Comprising cylindrical shell having lug receiving slot
336 ...Lamp or electron tube socket
337 ..Having axially extending bayonet contact
338 .Including movement of coupling part about axis
339 ..Threaded coupling part
340 ...With socket contact transversely engaging male threaded part
341 ..Pivotal movement
342 .Including compound movement of coupling part
343 ..Including appurtenant means for supporting other structure
344 .Having push-pull contacts spaced along only one planar side wall transverse to longitudinal engagement axis (e.g., telephone jack or plug)
345 .Retaining means
346 ..Adapted to engage contact of mating part
347 ..Laterally moving slide
348 ..Laterally moving roller or ball
349 ..Toroidal band urged radially of connection or adapted to be compressed for retention, e.g., O-ring
350 ..Finger or stretchable sleeve resiliently urged laterally of connection
351 ...Coupling part having appurtenant means for supporting other structure
352 ...With additional means to cause or prevent unlatching
353 ...Finger inwardly biased during coupling or uncoupling
354 ....Rearwardly extending finger
355 ...Plural independent coupling parts
356 ...Coupling part comprising lamp or electron tube socket
357 ...Resilient finger
358 ....With graspable portion

WITH COUPLING MOVEMENT-ACTUATING MEANS OR RETAINING MEANS IN ADDITION TO CONTACT OF COUPLING PART
.Retaining means
359 ..Retaining means comprising helically threaded member
360 ...For lamp or electron tube
361 ...Including appurtenant means for supporting other structure
362 ...Parallel to connection
363 ....For retaining tubular conductor in electrical contact
364 ....Passing centrally through coupling part
365 ....Adapter
366 ..Retaining functioning electrical component (e.g., tube, lamp, fuse, battery, etc.)
367 ..Protective enclosure
368 ..Single means retaining plural distinct coupling parts and mating parts together
369 ..For unsupported coupling part and unsupported mating part, (e.g., connecting extension cords)
370 ..Resiliently urging coupling part and mating part together
371 ..Pliable band, conductor sheath engaging means, or adhesive
372 ..Rotatable retaining means, pivotable retaining means, or actuated gripping retaining means
373 ..Wall or outlet mounted
374 WITH GUIDING MEANS FOR MATING OF COUPLING PART
375 .Lamp or electron tube socket or base
376 .For constrained pivotal or plural movement coupling
377 .For guiding side of movable panel, e.g., circuit board
378 .Rodlike guide member extending in coupling direction or tubular passage for receiving rodlike guide member
379 ..With plural contacts circularly disposed about guide opening or rodlike member, e.g., electron tube base
380 ..Tubular passage receives contact
381 ...Bare contact
382 INCLUDING VIBRATION CUSHIONING OR ABSORBING MEANS
383 .Adapted to fit between opposing faces of mated connectors
384 .For supporting connector
385 ..By gripping mating connector
386 WITH COMMONING MEANS FOR RETURN GROUND
387 CONTACT COMPRISING CUTTER (SEVERING, PIERCING, ABRADING, SCRAPING, BREAKING OR TEARING)
388 .Adapted to engage tapered post (e.g., storage battery terminal)
389 .Insulation cutter
390 ..Adapted to engage liquid, granular or metallic wool conductor
391 ..Conductor sheath piercing
392 ...With means to cut off excess end of conductor
393 ...Cutter piercing insulation parallel to conductor axis
394 ...Coaxial cable
395 ...Having slot edge for cutting insulation
396 ....With additional diverse sharp cutting edge
397 ....Contact engages conductor in at least two locations spaced along conductor axis
398 .....Conductor engaging slot extends through bight of contact
399 .....With stress relieving means for conductor to terminal joint
400 .....With distinct surface holding conductor in slot
401 ....Contact engages conductor at axial location and engages insulation at second axial location to relieve stress at conductor to terminal joint
402 ....Single conductive member having plural slots formed by three or more fingers for connecting plural conductors
403 .....From different margins of contact
404 ....Plural contacts, each formed by slot between pair of fingers
405 .....Longitudinally and laterally staggered contacts
406 ....Contact is portion of elongated channel
407 .....With stress relieving means for conductor to terminal joint
408 ....More than one conductor in same slot
409 ...Pivoting cutter, pivoting means to operate cutter, or pivoting means to move conductor against cutter
410 ....Pivoting cutter
411 ...Comprising screw, screw operated cutter, or screw means to move conductor against cutter
412 ....Screw means to move conductor against cutter
413 .....Single element cutting and connecting plural conductors
414 .....Lamp or electron tube socket or base
415 ....Screw threads pierce insulation
416 ....Piercing means comprising end of screw
417 ...Rectilinearly moving operator
418 ...Contact member cutting to contact first conductor and contacting second conductor
419 ....Lamp or electron tube socket or base
420 ...Flexibly tensioned strap
421 ...Crimped
422 ....For use with tape cable
423 ....Cutting by peripheral end of sheath encircling crimped contact
424 ....Cutting by stamped out tooth of sheath encircling crimped contact
425 ...Nail like cutter
426 ..Passing through insulation to make contact
427 .Axially penetrating the elongated conductor
428 ..Comprising screw or screw operated means
429 ...Screw threads engage conductor
430 ..Contact permanently secured to a conductor, e.g., crimped, soldered, etc.
431 .Comprising screw, screw operated cutter, or screw means to move conductor against cutter
432 ..Screw operated pivoted cutter
433 ..Annular cutter
434 .Annular cutter
435 .U-shaped clamp
436 .Resiliently biased
437 ..Finger
438 ...Resilient finger
439 ....Plural fingers
440 ....Spaced along longitudinal axis of engagement

	CONTACT COMPRISING CUTTER (SEVERING, PIERCING, ABRADING, SCRAPING, BREAKING OR TEARING)
	.Resiliently biased
	..Finger
	...Resilient finger
441	....Adapted to grip upon withdrawal of mating part
442	.Crimped
443	.Having slot edge for cutting
444	.Piercing into support structure
445	WITH OR HAVING FLEXIBLE GUARD OR SUPPORT FOR CABLE OR CONDUCTOR
446	.Pivotal
447	.Resilient
448	..Coil spring concentric with cable or conductor
449	WITH STRESS RELIEVING MEANS FOR CONDUCTOR TO TERMINAL JOINT
450	.Drop cord attaching means, e.g., block or rosette
451	.Including provision to attach tether
452	.Including provision to attach to stress bearing portion of conductor
453	.Enlargement engaging means
454	..Including longitudinally threaded connector part to effect gripping of enlargement
455	..Distinct cable attached enlargement means
456	.Curved conductor path
457	..Means comprising notched or apertured body
458	...Plate-like body
459	..Conductor clamping and shaping
460	.Conductor gripped by or entirely within connector housing
461	..Including longitudinally threaded connector part to effect gripping of conductor
462	...Distinct clamp actuated by threaded connector part
463	..Eccentric gripping means
464	..By pliant, conductor encircling strap
465	..Longitudinally divided connector housing grips conductor
466	...With additional contacts comprising coupling part mating along axis normal to conductor
467	...Hinged connector housing parts
468	..With additional contacts comprising coupling part mating along axis normal to conductor
469	..Transverse conductor gripping screw, or with means to transversely move conductor gripping means
470	.Conductor gripped outside connector housing by distinct clamp
471	..By pliant conductor encircling strap
472	..With means to transversely move conductor gripping means
473	...With additional contacts comprising coupling part mating along axis normal to conductor
474	INCLUDING OVERSTRESS PREVENTING MEANS
475	.Frangible element
476	INCLUDING HANDLE OR DISTINCT MANIPULATING MEANS
477	.For attachment of connector to overhead conductor
478	..With conductor inside handle or manipulating means
479	..Including handle operated screw to effect gripping of overhead conductor
480	.Distinct manipulating means; e.g., hot stick
481	.Randomly manipulated implement
482	..Test probe
483	.Coupling part
484	..Including bale or loop
485	WITH PROVISION TO DISSIPATE, REMOVE, OR BLOCK THE FLOW OF HEAT
486	.Tube clamp
487	.Distinct heat sink
488	WITH INDICATING OR IDENTIFYING PROVISION
489	.Connection indicating provision
490	..Indicator light
491	.Distinct indicia bearing member
492	INCLUDING OR FOR USE WITH TAPE CABLE
493	.For connection to rigid preformed panel circuit arrangement, e.g., pcb
494	.Single cable end into dual rows of contacts
495	.With mating connection region formed by bared cable
496	..Bared cable wrapped into U-shape about insertion projection
497	.With shield, ground conductor or ground commoning means
498	.Plural cables to multicontact connector or single cable branching to plural connectors
499	.Including connector housing surrounding cable
500	ENERGY CELL SUBSTITUTION DEVICE INCLUDING PLURAL CONTACTS (E.G., JUMPER) OR WITH SUPPORT MEANS FOR ENERGY CELL
501	WITH STORAGE MEANS FOR FLACCID CONDUCTOR
502	WITH FLACCID CONDUCTOR AND WITH ADDITIONAL CONNECTOR SPACED THEREALONG
503	.Adapted to interconnect vehicles
504	.Adapted to connect to a battery
505	.And with third connector spaced therealong
506	.Connector comprising pivoted spring biased clamp
507	JUMPER (OR SHORT CIRCUITING COUPLING PART)
508	.Adapted to be used with power measuring meter
509	.Coupling part comprising short circuiting cover or manipulatable supporting means
510	.To bridge post-type contacts
511	.Including plural prongs
512	.Including plural female contacts
513	.Having spring biased contact
514	.Parallel or supplemental nonshielded path
515	PARALLEL OR SUPPLEMENTAL NONSHIELDED PATH
516	WITH PROVISION TO ISOLATE CIRCUITRY BY SEVERANCE OF BRIDGING ELEMENT
517	POWER MEASURING METER COUPLING PART
518	COUPLING PART CONVERTIBLE TO DIFFERENT FORMAT BY SUBSTITUTION OF DIFFERENT CONTACT
519	WITH PROVISION TO RESTRICT ENVIRONMENT EFFECTS
520	.Sacrificial material
521	.Including contact cover or case
522	..Connector comprising or mating with tapered post, e.g., storage battery terminal
523	..Having elastic or heat shrunk cable grip
524	CORROSION RESISTANT CONDUCTING MATERIAL OTHER THAN LEAD
525	FOR DUAL INLINE PACKAGE (DIP)
526	ALIGNING MEANS FOR DUAL INLINE PACKAGE (DIP)
527	WITH SUPPORTING MEANS FOR COUPLING PART
528	.Nonuse covering means, e.g., connector storage means

WITH SUPPORTING MEANS FOR COUPLING PART
529 .And including appurtenant means for supporting other structure
530 ..And including electrical contact for load bearing
531 .Flexible suspension means, e.g., chain or strand
532 .Interfitting with channel or double rail
533 .Also supporting mating part
534 .Universally or pivotally adjustable supporting elements
535 .Outlet box
536 .Supporting means comprising face plate or closure member for outlet box
537 ..For ceiling box
538 .Outlet receptacle mounting flange
539 ..Yoke
540 .Supporting plural independent coupling parts
541 ..Plural lamp or electron tube sockets
542 .Elongated member supporting connector at its extremity or member for interfitting with such an elongated member
543 ..Threaded shaft or tube
544 .Coupling part or mating part extending into panel opening
545 ..With securing by movement of coupling part in plane of panel
546 ...Movement about connective axis; e.g., bayonet
547 ....To preformed panel circuit arrangement
548 ....With sealing to panel
549 ....Resilient gripping of panel
550 ..With opening encircling retaining collar
551 ...Concentrically screw threaded collar
552 ..Including resilient securing
553 ...By resilient member on panel
554 ...Panel circuit arrangement
555 ...With means to deform or lock resilient means
556 ...With sealing to panel
557 ...Laterally flexed finger on coupling part
558 ....Including lamp or electron tube socket
559 ..With sealing to panel
560 ..Coupling part secured to panel by stressing beyond elastic limit
561 ...By stressing panel beyond elastic limit
562 ..Coupling part including panel engaging shoulder
563 ...Comprising detachable or adjustable flange
564 ...Directly attached to panel by elongated fastener in tension (e.g., rivet, bolt or screw)
565 ...With opposed, cooperating panel engaging member
566 ...For permanent attachment to panel, e.g., by welding
567 .Having resilient means engaging panel opening
568 .Coupling part supported by randomly manipulated appliance (e.g., electric iron)
569 .Flange on coupling part
570 ..Plural detachable flanges
571 .Comprising or for use with supporting panel
572 ..Conductor extending into panel opening
573 ..Directly attached to panel by elongated fastener in tension (e.g., rivet, bolt or screw)
574 .Means to clamp
575 ..Resilient clamp
576 .To be engaged by suspension means
577 COMBINED WITH NONELECTRICAL FEATURE
578 INCLUDING OR FOR USE WITH COAXIAL CABLE
579 .Having means for interconnecting outer conductors of three or more cables
580 .For cable having three or more coaxial conductors
581 .Adapted to join cable conductors to different type conductors (e.g., to PCB conductors)
582 .Adapted to secure cables perpendicular to one another or a cable perpendicular to coupling axis
583 .Having screw-threaded or screw-thread operated cable grip
584 ..With radially compressible cable grip
585 .Having crimpable metallic cable conductor grip
586 COUPLING PART INCLUDING FLEXING INSULATION
587 .Sealing
588 ..Resilient, coupling part encircling jacket
589 ..Within rigid coupling part shell
590 .Storage strip for a plurality of coupling parts
591 .Coupling part for use between duplicate coupling parts (e.g., sandwiched between printed circuit boards)
592 .Insulation distorted by or to effect coupling action
593 ..Receptacle adapted to bias contact and cause indrect gripping of mating contact
594 .Resiliently interlocking coupling part with adjacent modular coupling part
595 .Hinged or flexed detent on insulation engaging to secure contact within coupling part housing
596 .Coupling part housing hinged for coupling part assembly
597 .Having plural, laterally spaced, prongs or prong sockets
598 ..Coupling part including shell and assembly of contact and contact supporting insulator
599 ..And multiple insulating components
600 ..Having laterally spaced prongs
601 ...Folded prongs
602 .Lamp or electron tube socket or base
603 .Retaining contact within distinct coupling part housing
604 WITH EXTERNAL CONDUCTOR OR CABLE EMBEDDED IN INSULATIVE SEALING MATERIAL
605 .Lamp or electron tube socket or base
606 .Molded connector body
607 HAVING OR PROVIDING INDUCTIVE OR CAPACITIVE SHIELD
608 .Conductive shielding material individually surrounding or interposed between mutually insulated contacts
609 .Resilient conductive means providing additional electrical path between mating outer shield members
610 .Having means for electrically connecting shield of shielded cable to connector shield member
611 WITH VITREOUS-TYPE ENVELOPE (E.G., BASE OF LAMP OR VACUUM TUBE)
612 .Connector or contact secured to each end of double-ended envelope

WITH VITREOUS-TYPE ENVELOPE (E.G., BASE OF LAMP OR VACUUM TUBE)
613 .Connector of the type having only concentric annular contacts or annular contact disposed concentrically about an axial contact
614 ..Having three or more contacts (e.g., for three-way lamp)
615 ..Having screw-thread-coupling contact
616 .Having bayonet-coupling contact
617 .Plug having spaced, longitudinally engaging, prong-like contacts
618 ..Having three or more circularly arranged contacts (e.g., base of vacuum tube)
619 .Having only two duplicate contacts arranged bilaterally symmetric about longitudinal axis of engagement
620 WITH CIRCUIT COMPONENT OR COMPRISING CONNECTOR WHICH FULLY ENCLOSES CIRCUIT COMPONENT
621 .With or for fuse
622 ..Comprising coupling part housing for enclosing fuse
623 CABLE COMPOSED OF MUTUALLY INSULATED CONDUCTORS HAVING SEPARATELY CARRIED CONDUCTOR END TERMINALS
624 PLURAL CONTACTS DISPOSED INTERMEDIATE ENDS OF CABLE HAVING SHEATH ENCLOSING MUTUALLY INSULATED CONDUCTORS (E.G., SEISMIC TYPE CABLE)
625 WITH INSULATION OTHER THAN CONDUCTOR SHEATH
626 .Plural-contact coupling part
627 ..For direct simultaneous contact with plural battery or cell terminals
628 ..Single-contact connector for interposition between two plural-contact coupling parts (e.g., adaptor)
629 ..For coupling to edge of printed circuit board or to coupling part secured to such edge
630 ...Having elongated slot for receiving edge of printed circuit board
631 ....Plural slots for electrically interconnecting plural printed circuit boards
632 ....Providing direct contact between contacts of printed circuit board and different type conductors
633 ....Having polarizing means
634 ....Having multipart insulating body
635 .....Relative movement of insulating parts alters contact pressure
636 ....Contacts within slot engage opposite sides of printed circuit board
637 .....Separate mutually insulated contacts on opposite longitudinal sides of slot
638 ..Two or more plural-contact coupling parts combined in one integral unit
639 ...Unit includes three or more diverse types of coupling parts
640 ...One coupling part of unit repositionable relative to another thereof
641 ...Unit includes coupling part having screw-thread-coupling contact
642 ....Plug having surrounding screw-thread-coupling contact
643 .....Combined with plural receptacles with each having internal screw-thread-coupling contact
644 .....Combined with receptacle having internal bayonet-coupling contact
645 .....Combined with push-pull-coupling receptacle
646 ......Wherein the receptacle is adapted to receive plug having spaced prong-like contacts
647 ....Receptacle having internal screw-thread-coupling contact combined with plug having spaced, longitudinally engaging, prong-like contacts
648 ....Plural receptacles with each having screw-thread-coupling contact
649 ...Unit includes plural receptacles with each having bayonet-coupling contact
650 ...Unit includes receptacle for receiving plug having spaced, longitudinally engaging, prong-like contacts
651 ....Combined with plug having spaced, longitudinally engaging, prong-like contacts
652 .....Wherein the plug is combined with a plurality of the receptacles adapted to receive spaced-prong plug
653 ....Combined with diverse type of coupling part
654 ....Having receptacle at each of parallel opposed surfaces or sides
655 ...Unit includes plug having spaced, longitudinally engaging, prong-like contacts
656 ..With common means securing plural conductors to separate contacts
657 ...Screw-thread operated
658 ..Having separate through-passageways for enabling securement of intermediate portion of conductors thereto
659 ...Coupling part comprises receptacle having internal screw-thread-coupling contact
660 ..Plural-contact coupling part comprises receptacle or plug
661 ...Having screw-thread-coupling contact
662 ....Screw threads formed on cylindrical or annular contact
663 .....Screw-threaded center-contact type
664 .....Plug having screw-thread-coupling contact and also having resilient or spring-biased center contact
665 .....Having mutilated, irregular, interrupted, or discontinuous contact thread
666 .....Receptacle having internal screw-thread-coupling contact
667 ......And also having resilient or spring-biased center contact
668 ...Having only push-pull-engaging contacts spaced along longitudinal axis of engagement (e.g., jack-type receptacle or plug)
669 ....Plug having cylindrical or annular contacts of substantially the same diameter (e.g., jack-type plug)
670 ...Having coupling contact requiring successive relative motions in different directions to complete the coupling
671 ....Having bayonet-coupling contact
672 .....Bayonet-coupling contact comprises cylindrically-shaped ring or shell
673 .....Having plural bayonet-coupling contacts
674 ......Polarized

WITH INSULATION OTHER THAN CONDUCTOR SHEATH

.Plural-contact coupling part

..Plural-contact coupling part comprises receptacle or plug

675 ...Having annular, push-pull-engaging contact concentrically disposed about longitudinal axis of engagement

676 ...Having push-pull-engaging contacts spaced along planar side wall transverse to longitudinal engagement axis (e.g., telephone jack or plug)

677 ...Polarized

678 ....By asymmetric disposition or asymmetric shape of duplicate contacts

679 ....By having or receiving contacts of similar type which are unequal in size or shape

680 ....By key or guideway

681 .....User adjustable key or guideway

682 ...Receptacle for receiving plug having spaced, longitudinally engaging, prong-like contacts

683 ....Adapted to receive base connector of electron tube

684 .....Receptacle body formed of thin, superposed plates or discs of insulation

685 ....Having only three prong-receiving recesses arranged to define apices of a triangle

686 ....Having multipart insulating body or casing

687 .....Divided parallel to longitudinal engagement axis (e.g., formed of two casing halves)

688 .....Formed of superposed planar sheets or plates of insulation

689 .....Planar insulating cover overlying insulating body or casing

690 .....Insulating parts secured together by screw-threaded means

691 ....Having additional resilient member cooperating with contact to increase grip on contact of mating plug

692 ...Plug having spaced, longitudinally engaging, prong-like contacts

693 ....With insulative covering about part of protruding portion of each contact

694 ....Having wire conductor receiving passageway extending perpendicular to longitudinal axes of contacts

695 ....Having multipart insulating body

696 .....Divided parallel to longitudinal engagement axis (e.g., formed of two casing halves)

697 ....Having means other than screw-threaded means for securing wire-type conductor to contact

698 ...Receptacle for transversely receiving elongated fuselike component having contact at each end thereof

699 ...Having only two duplicate contacts arranged bilaterally symmetric about longitudinal axis of engagement

700 ...Having spring-biased, plunger-type contact movable along line parallel to longitudinal axis of engagement

701 ...Having modular or multipart insulating body

702 .Insulating body comprising or for use with cylindrical cap and shell type lamp receptacle casing

703 ..Insulating lining or contact support within separable, metallic cap and shell casing

704 ..Insulating lining or contact support within metallic cap casing

705 ..Insulating lining or contact support within metallic shell casing

706 ..Insulating lining for interior of metallic cap or shell casing

707 ..Separable insulating cap and shell casing

708 .Insulating body providing direct contact or engagement of duplicate terminals or conductors

709 .Insulating body having plural mutually insulated terminals or contacts (e.g., terminal block)

710 ..Duplicate insulating blocks or boards interconnected by frangible or severable part

711 ..With common operator for simultaneously securing separate contacts thereof to separate external contacts or conductors

712 ..Modular or multipart insulating body

713 ...Relatively movable insulating body parts

714 ...Formed of three or more thin, flat, superposed layers, plates, or sheets of insulation

715 ...Modular insulating block or board

716 ....With support track for receiving plural insulating blocks or boards

717 ....Having integral means to interlock or interfit with a duplicate insulating block or board

718 ...Having protective cover formed from insulating material

719 ..With conductor fanning means

720 ..Terminals or contacts secured by permanently bending or deforming metallic part onto insulation

721 ..Having three or more spaced, electrically interconnected, duplicate terminals or contacts

722 ..Terminals or contacts embedded in insulating body

723 .Insulating body with spaced, electrically interconnected, duplicate terminals or contacts

724 ..Modular or multipart insulating body

725 .Having movable insulated part for securing conductor or mating connector thereto

726 ..Clamp-type connector for storage battery post

727 ..Screw-thread-operated securing part

728 ...With spring operating on conductive clamp portion of securing part

729 ..Spring-operated or resilient securing part

730 .Terminal connector having insulating tube or sleeve adapted to be crimped or heat-shrunk onto wire conductor

731 .Insulating body divided parallel to longitudinal axis of engagement (e.g., formed of two casing halves)

732 .Interfitting or abutting insulating bodies carried by separate mating connectors

733 .Metallic connector or contact secured to insulation

734 ..Annular or center contact secured to lamp-type insulating receptacle or base

WITH INSULATION OTHER THAN CONDUCTOR SHEATH
.Metallic connector or contact secured to insulation
..Annular or center contact secured to lamp-type insulating receptacle or base
735 ...Screw-threaded contact having mutilated, irregular, interrupted, or discontinuous screw thread
736 ..Secured by heat-molding or cold-deforming insulation or by casting, welding, or cementing
737 ..Secured to insulation by screw-threaded means
738 ...Insulating tube, sleeve, or cap concentrically surrounding part of connector
739 ...Including resilient or spring-biased part for securing wire-conductor or mating connector thereto
740 ..Secured to insulation by bayonet engagement
741 ..Secured by permanently bending, deforming, or crimping metallic part
742 ...Having separate bendable or deformable securing part (e.g., rivet)
743 ...Resilient or spring-biased socket contact or connector
744 ..Secured by resiliently biased part latching behind shoulder or into recess
745 ...Separate latching part secured to contact prior to engagement with insulation
746 ...Latching part unitary with metallic connector or contact
747 ....Coupling part type contact inserted into insulation from coupling end
748 ....Resilient socket contact for surrounding or engaging opposed surfaces of mating plug contact
749 .....Adapted to have secured wire conductor extending transverse to longitudinal coupling axis
750 ..Insulating tube, sleeve, or cap concentrically surrounding part of connector
751 ..Secured by part resiliently gripping insulation
752 ..Secured by superposition of insulating body parts
753 CYLINDRICAL METALLIC CAP AND SHELL TYPE LAMP RECEPTACLE CASING
754 METALLIC CLAMP-TYPE CONNECTOR FOR STORAGE BATTERY TERMINAL
755 .For threaded-receptacle type terminal flush with battery wall (e.g., for side terminal type battery)
756 .Common securing means for post and conductor
757 .With clamp-to-post joint separator
758 ..Clamp secured to and separated from post by same screw-threaded member
759 .Spring-actuated or resilient clamp
760 .With reinforcing insert
761 .Deformable C- or U- clamp
762 ..Screw-thread operated
763 ...With plural conductor terminals
764 ...With means for removably securing conductor thereto
765 .Screw-thread operated
766 ..Screw or nut coaxial with post
767 ..Post between and transverse of plural screws
768 ..Eye bolt type
769 ..Clamping lever
770 ..Clamping cam or wedge
771 ..Screw axis intersects post axis (e.g., set screw)
772 .Clamping lever, cam, or wedge
773 ..Rotary or swinging cam
774 ..Sliding wedge
775 METALLIC CONNECTOR OR CONTACT HAVING MOVABLE OR RESILIENT SECURING PART
776 .Stirrup type for simultaneously securing two spaced-apart locations along the length of a conductor thereto
777 .Adjustable angular joint between separate connectors or conductor securing means
778 .Externally threaded, bifurcated bolt for joining conductors having like cross-sectional shape
779 ..With nut retainer
780 ..With slidable conductive element between conductors
781 .Bolt or screw between and transverse of parallel conductors
782 ..With means to maintain assembly of clamp part and bolt or screw
783 .Cam or wedge between conductors
784 .Screw-threaded securing means coaxial with elongated conductors joined in axially aligned relationship
785 .Parallel elongated conductors between and transverse of plural screws (e.g., U-bolt)
786 .Resilient or spring-operated securing means joining plural conductors
787 ..Conductors secured in duplicate receiving means
788 ...With helical spring
789 .Hinged jaw type having alignable conductor receiving bores
790 .Single operator for securing and joining plural conductors
791 ..Single screw-threaded operator
792 ...Conductors secured in direct contact with one another
793 ....Screw axis intersects axes of conductors joined parallel to one another
794 ...Conductors secured in duplicate receiving means
795 ...Screw-threaded operator circumferentially tensions flexible strap or band
796 .Duplicate receiving means having independently operated securing means for joining plural conductors
797 ..Screw-thread operated securing means for each receiving means
798 ...For joining three or more conductors
799 .Circumferentially tensioned flexible strap or band
800 ..Tensioning screw intersects longitudinal axis of encircled conductor
801 .Screw-thread operated securing part
802 ..Screw-threaded lamp-shell type contact having resilient or spring biased securing part
803 ..C-clamp type
804 ..Single conductor between and transverse of plural screws (e.g., U-bolt)
805 ..Nut, bolt, or screw coaxial with elongated conductor
806 ..Clamping lever
807 ..With screw-thread operated cam or wedge
808 ..With strand coiling or loop forming means

	METALLIC CONNECTOR OR CONTACT HAVING MOVABLE OR RESILIENT SECURING PART
	.Screw-thread operated securing part
809	..With means confining strand or wire loop about screw
810	..Screw axis intersects conductor axis (e.g., set screw)
811	...With movable clamp jaw between conductor and screw or nut (e.g., slidable follower)
812	....Clamp jaw movably secured to screw or nut
813	...Captive screw or nut
814	...Set screw type
815	..Screw or nut moves resilient or resiliently biased securing part
816	.Spring actuated or resilient securing part
817	..Compression spring axis transverse of and intersecting conductor axis
818	...Spring biases detent member to form snap-latch type securing part
819	..Separate spring means moves rigid nonresilent clamping part into securing condition
820	...Spring biases slidable wedge-shaped or wedge-operated jaw
821	...Socket connector having three or more annularly arranged duplicate grip elements
822	...Hinged clamping part (i.e., clamping lever)
823	...Socket or pin connector having small radially biased clamping or detenting element
824	...Spring-biased butt contact
825	..Plug having means for resiliently engaging opposed interior surfaces of mating socket connector (e.g., banana plug)
826	...Also having means for resiliently engaging exterior surfaces of the socket connector
827	...Having separate resilent means extending externally around or outwardly through rigid plug body
828	..Having resilient clamping finger crossing plane of opposed clamping member while in clamping condition
829	...Hand-grip type
830	..For receiving end contact of elongated fuselike component inserted transverse to longitudinal axis of component (e.g., fuse clip)
831	...With contact rejection feature or adaptor
832	...With movably attached user manipulated locking, contact retaining, or spring spreading means
833	...With separate means to increase clamping pressure of spring clip
834	..Clamping pressure provided by cantilevered finger resiliently urged away from opposed clamping member
835	..With movably attached user manipulated means or having user grippable means for manually distorting resilient part
836	...Slidably mounted cam or wedge locks or places resilient securing part into securing condition
837	....With additional spring means to operate slidable cam or wedge
838	...Pivotally or rotatably mounted member locks or places securing part into securing condition
839	..With additional reinforcing spring means
840	..Helically coiled spring forms securing part
841	...Adapted to receive elongated contact or conductor by insertion along axis passing through spring coils
842	..Socket adapted to receive push-pull-engaging elongated contact by insertion along longitudinal axis of contact
843	...Having separate gripping spring means located within or extending into rigid socket body
844	....Adapted to be mounted to flat panel with longitudinal axis of socket perpendicular to plane of panel
845	....Adapted to receive thin blade contact (e.g., spade receiving)
846	....Separate spring means forms snap-latching detent
847	....Spring means mounted on exterior of and extends into rigid socket body
848	...Having latching detent or means operated by mating contact to lock or manipulate resilient part
849	....Adapted to receive thin blade contact (e.g., spade receiving)
850	...Resilient channel-like socket for receiving thin blade contact (e.g., spade receiving)
851	...Socket comprises tubular body having resilient means for gripping inserted elongated contact (includes split or slotted tube)
852	....Having resilient cantilevered clamping finger located within tubular body
853	.....With means for mounting to flat panel
854	....Tubular socket perpendicular to wire-securing barrel (e.g., right-angle connector)
855	...Socket perpendicular to wire-securing barrel (e.g., right-angle connector)
856	...Having opposed cantilevered clamping fingers resiliently urged toward one another
857	....Allochiral cantilevered clamping fingers
858	...Having cantilevered clamping finger resiliently urged toward rigid clamping jaw
859	..Adapted to resiliently engage end face and inner annular shoulder of headed terminal
860	..Comprising conductor-encircling resilient wire loop or comprising slotted or apertured resilient plate
861	..Having cantilevered clamping finger resiliently urged toward opposed clamping jaw
862	..Having cantilevered spring contact finger
863	.Clamping cam or wedge
864	..Rotary or swinging
865	METALLIC CONDUCTOR TERMINAL HAVING CONDUCTOR SHEATH ENGAGING MEANS
866	.Pin or plug type terminal
867	.Resilient or spring-biased socket or clip type terminal
868	.Slotted or apertured disc or plate type terminal (e.g., ring terminal)
869	METALLIC CONNECTOR OR CONTACT HAVING MEANS FOR SECURING TO INSULATION OTHER THAN CONDUCTOR SHEATH

METALLIC CONNECTOR OR CONTACT HAVING MEANS FOR SECURING TO INSULATION OTHER THAN CONDUCTOR SHEATH
870 .Adapted to be secured by permanently bending or deforming metallic part
871 .Adapted to be secured by resiliently biased part latching behind shoulder
872 ..Latching part unitary with metallic connector or contact
873 .Adapted to be secured by part resiliently gripping insulation
874 METALLIC CONNECTOR OR CONTACT HAVING PART PERMANENTLY SECURED TO CONDUCTOR USING FUSED OR MOLDED MATERIAL
875 .Having duplicate locations for permanently securing individual conductors thereto
876 .Adapted to be secured to conductor formed on printed circuit board
877 METALLIC CONNECTOR OR CONTACT ALSO HAVING SECURING PART ADAPTED TO BE CRIMPED, DEFORMED, OR BENT ONTO CONDUCTOR
878 .Securing part crimped or bent onto looped end of wire conductor
879 .Multipart assembly
880 .Having duplicate receiving means for permanently securing individual conductors thereto
881 .Wire conductor secured transverse to contact portion (e.g., right-angle connector)
882 .Wire conductor secured within ferrule having series of preformed wire-gripping means therein
883 METALLIC CONNECTOR OR CONTACT COMPRISING A SLOTTED OR APERTURED DISC OR PLATE
884 CONTACT TERMINAL
885 .Strip of detachable contacts
886 .Having treated (e.g., coated) surface or distinct contact surface layer
887 .Of particular metal or alloy
888 .Having provision for retaining to mating wire (e.g., wire wrap)
889 .Having provision for retaining to mating contact
890 .For functioning electrical component, (e.g., tube, lamp, fuse, spark plug, etc.)
891 .Multipart contact prong
892 DISTINCT COVERING MEANS
893 .Covering functioning electrical component (e.g., tube, lamp, fuse, spark plug, etc.)
894 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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901 CONNECTOR HOOD OR SHELL
902 .Angularly disposed contact and conductor
903 .Special latch for insert
904 .Multipart shell
905 ..Axially joined sections
906 ..Longitudinally divided
907 CONTACT HAVING THREE CONTACT SURFACES, INCLUDING DIVERSE SURFACE
908 CONTACT HAVING TWO CONTACT SURFACES FOR ELECTRICAL CONNECTION ON OPPOSITE SIDES OF INSULATIVE BODY
909 MEDICAL USE OR ATTACHED TO HUMAN BODY
910 OBSERVATION AIDE, E.G., TRANSPARENT MATERIAL, WINDOW IN HOUSING
911 SAFETY, E.G., ELECTRICAL DISCONNECTION REQUIRED BEFORE OPENING HOUSING
912 WITH TESTING MEANS
913 CONDITION DETERMINING DEVICE, E.G., OXYGEN SENSOR, ACCELEROMETER, IONIZER CHAMBER, THERMOCOUPLE
914 FOR FLASHBULB OR CAMERA (INCLUDING FLASH CUBE)
915 AUXILIARY DEVICE FOR EXISTING PLUG
916 ANTENNA
917 ALARM CIRCUIT, E.G., WINDOW AFFIXED FOIL
918 MULTILAMP VEHICLE PANEL
919 FOR TREATMENT BY ELECTRICAL CURRENT, E.G., MAGNET OR BATTERY CHARGER, HEATER, WELDER, ETC.
920 FOR INTERCONNECTING RIGID PIPELIKE BODIES, E.G., WAVE GUIDES
921 TRANSFORMER BUSHING TYPE OR HIGH VOLTAGE UNDERGROUND CONNECTOR
922 TELEPHONE SWITCHBOARD PROTECTOR
923 SEPARATION OR DISCONNECTION AID
924 CONTACTS ARRANGED FOR SEQUENTIAL CONNECTION
925 FLOOR MOUNTED, E.G., UNDER CARPET
926 WITHIN MACHINE CASING OR MOTOR HOUSING (CONNECTOR WITHIN CASING WALL)
927 CONDUCTIVE GASKET
928 MODULAR ELECTRICALLY INTERENGAGING PARTS, E.G., STOVE WITH REPLACEABLE HEATING ELEMENTS FORMED ON COUPLING PARTS
929 CONNECTING BASE PLATE OR SHELF TYPE HOLDER
930 COUPLING PART WHEREIN CONTACT IS COMPRISED OF A WIRE OR BRUSH
931 CONDUCTIVE COATING
932 HEAT SHRINK MATERIAL
933 SPECIAL INSULATION
934 .High voltage barrier (e.g., surface arcing or corona preventing insulator)
935 .Glass or ceramic contact pin holder
936 .Potting material or coating (e.g., grease, insulative coating, sealant or, adhesive)
937 .Plural insulators in strip form
938 CATHODIC PROTECTION OF STRUCTURE (E.G., SHIP HULL)

CLASS 440 MARINE PROPULSION

1 MEANS TO CONTROL THE SUPPLY OF ENERGY RESPONSIVE TO A SENSED CONDITION
2 WITH INDICATOR
3 DIVERSE ENGINE MEANS
4 PLURAL ENGINES WITH SINGLE PROPELLING MEANS
5 HYDRAULIC FLUID DRIVE FOR PROPELLING MEANS
6 ELECTRIC DRIVE FOR PROPELLING MEANS
7 .With foot control
8 WIND DRIVEN MOTORS
9 WAVE POWERED PROPELLING MEANS
10 .By oscillating weight
11 POWERED FROM LAND VEHICLE SUPPORTED BY VESSEL
12 .Land vehicle is two-wheel type
13 OSCILLATING PROPELLING MEANS
14 .Fishtail motion propelling means
15 ..Flexible
16 .Moving wave propeller
17 .Having nonpropelling cycle segment
18 ..Piston and cylinder
19 ..With means to move propelling element to nonpropelling position
20 ..With reversing means
21 OPERATOR POWERED DRIVE FOR PROPELLING MEANS
22 .Rocking watercraft
23 .Fluid pump
24 .Having reciprocating pull cable
25 .Sliding handle or pedal
26 .Rotary cranking arm
27 ..Plural-crank type
28 ..Having flexible drive shaft
29 ..Having endless drive member
30 ...Chain and sprocket
31 ..Including gear means
32 .Lever with connecting linkage
33 TOWING
34 .Cable system
35 .Track system
36 .Ground wheel or poler
37 AIR PROPELLED BOAT
38 JET DRIVE
39 .Auxiliary use of propulsive fluid
40 .Direction control for fluid jet
41 ..With bucket or clamshell-type reversing means
42 ..Pivoted outlet
43 ..Pivoted vane
44 .Propulsion fluid is pressurized gas
45 ..Produced by combustion
46 .Having means to prevent clogging
47 .Having means to increase fluid drive means efficiency
48 HELICAL SCREW
49 SCREW PROPELLER
50 .Variable pitch
51 .Combined with rudder
52 .With vibration dampening
53 .With means effecting or facilitating movement of propulsion unit or a segment of the propulsion unit (e.g., tilting or steering)
54 ..With means limited to vertical movement within hull cavity
55 ..Having restraining means
56 ...With releasing means when propulsion unit hits obstruction
57 ..Having gimbal or universal joint support
58 ..Having toothed or threaded member to move propulsion unit or a segment of the propulsion unit
59 ...Screw type
60 ...Rack and pinion
61 ..Having fluid motor to move propulsion unit or a segment of the propulsion unit
62 ..Having pliant member to move propulsion unit or a segment of the propulsion unit
63 ..Having link or lever to move propulsion unit or a segment of the propulsion unit
64 ..Having shaft with releasable coupling
65 ..With means to lift propeller when an obstruction is hit
66 .Having means to control flow around propeller
67 ..Nozzle (Kort-Type)
68 ..Hull channel
69 ...With open bottom
70 ..Hull concavity
71 .Propeller guard
72 ..Cage or screen
73 .Self-clearing
74 .Shaft braking or locking
75 .Having transmission
76 .Propulsion unit casing
77 ..Cowl
78 ..Propeller shaft housing
79 .Propeller arrangement
80 ..Tandem
81 ...On single shaft
82 ..Supporting strut
83 .Shafting
84 ENGINE, MOTOR, OR TRANSMISSION CONTROL MEANS
85 .For starter means
86 .For transmission
87 .For engine speed
88 MEANS FOR HANDLING ENGINE FLUIDS
89 .Exhaust gas handling means
90 PADDLE WHEEL
91 .Having means to reposition paddle wheel assembly
92 .Having means to retract paddle or change paddle attitude
93 ..Having means to provide cyclic change of paddle attitude (e.g., Voith-Schneider)
94 UPRIGHT REMAINING ORBITING PADDLES
95 FLEXIBLE ENDLESS PROPELLING MEANS
96 .With paddle
97 ..Foldable or retractable to nonpropelling position
98 BUOYANT PROPELLING MEANS
99 .Rotating outer hull
100 .Wheellike
101 OAR OR PADDLE
102 .Articulated sectional oar or paddle
103 ..Having gear
104 .Support
105 ..Having outrigger
106 ..Oarlock
107 ...Having oar shaft restraining means
108 ...Separate mounting means
109 ....Socket type
110 ..Having guard for oar
111 INBOARD ENGINE MOUNT
112 .Having thru-hull sealing means
113 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTION

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900 OUTBOARD MOTORS AND OUTDRIVES

CLASS 441 BUOYS, RAFTS, AND AQUATIC DEVICES

DECEMBER 1990

1 BUOY
2 .With means to call buoy to surface
3 .For mooring a vessel
4 ..Having liquid cargo transfer means
5 ...Having swivel coupling for cargo conduit
6 .Marker buoy
7 ..Having means to release buoy upon submergence
8 ...Water soluble or water weakened member
9 ...Gas assisted
10 ...Responsive to hydrostatic pressure
11 ..With signalling device
12 ...Audible
13 ...Illuminating
14 ....By combustion of fluid
15 .....Fluid produced by chemical reaction with water
16 ....Electric light
17 .....Having water activated switch
18 .....Having water activated battery
19 ...Smoke producing
20 ...Reflecting means
21 .Having means to control attitude or position
22 ..Fluid reaction surface
23 ..Tether
24 ...Having playout means
25 ....Having means to control playout
26 ....Reel for tether
27 ....Having seat for buoy
28 ..Having ballast means
29 ...Variable ballast
30 .Inflatable
31 ..Having chemical reactor to produce gas
32 .Container type
33 ..With means to release transponder, sensor, etc.
34 ..Storm oil distributor
35 RAFTS
36 .With signal device
37 .Having water reactant stabilizing means
38 .With shelter
39 .Having boarding aid
40 .Inflatable
41 ..Having inflation valve means
42 ..Having storage container for raft
43 .Having centrally located suspended basket
44 .Columnar flotation member
45 ..Hollow
46 ...Barrel or drum
47 .Formed from log or other product
48 ..Booming
49 ..Cribbing
50 ..Coupling means
51 ...Dog
52 ...Clamp
53 ...Transverse rigid member
54 ...Encircling flexible member
55 SWIMMING AID TO INCREASE STROKE EFFICIENCY
56 .Hand attached, held, or worn
57 ..Having finger stalls (e.g., gloves)
58 ..Secured to hand by strap
59 .Arm attached
60 .Leg attached
61 .Foot attached
62 ..Repositioned by biasing means
63 ..With lock or latch
64 ..Flipper
65 WATER SKIMMING OR WALKING DEVICE
66 .Inflatable
67 .Circular
68 .Water ski
69 ..Ski tow handle
70 ..Ski binding
71 ..With rooster tail producing means
72 ..With seat
73 ..Having connecting means
74 .Surfboard
75 .With lashing
76 .Water walking device (e.g., water shoes)
77 ..Having pivoted traction flap
78 ..Spheroid or wheel-like device encircling walker
79 .Having stabilizing surface
80 WATER RESCUE OR LIFE PROTECTING APPARATUS
81 .Tossable apertured member (e.g., ring)
82 .For use over ice
83 .Air-sea rescue device
84 .Lifeline
85 ..Having line propelling means
86 .Buoyant shark screen encircling user
87 .Passenger enclosing bouyancy device
88 .Personal flotation device
89 ..With signal means
90 ..With mechanical inflation means
91 ...By pump
92 ...By compressed gas means
93 ....With puncturing means
94 .....Lever actuated
95 .....Actuated by water softened or soluble member
96 ....With control valve
97 .....Actuated by water softened or soluble member
98 ...By gas generation from chemical reaction
99 ....With manually operated valve
100 ....With soluble or deformable element
101 .....With cutting, punching, or striking means
102 ..Body suit
103 ...Full length
104 ....With hood
105 .....With mask
106 ..For torso
107 ...With sleeve
108 ...With buoyancy means substantially encircling the torso
109 ....And attached hip boot
110 ....And leg or foot strap
111 ....And support passing over the shoulder
112 .....Having buoyancy means
113 ....Buoyancy means is a continuous member
114 ...With buoyancy means on the back
115 ....And front
116 .....And shoulder
117 ...With buoyancy means on the front
118 ....And shoulder
119 ...With buoyancy means on the side
120 ..Trunks or shorts
121 ..Suspender
122 ..Arm encircling means
123 ..Neck encircling means
124 ..Head gear
125 .Convertible use article
126 ..Seating means
127 ...Cushion
128 ..Berth
129 BODY SUPPORTING BUOYANT DEVICE
130 .With seat
131 ..Annular buoyant member
132 ..U-shaped buoyant member
133 BUOYANCY PROVIDING ATTACHMENT FOR PIPE, LOG, OR LINE
134 .Float for log
135 BUOYANCY UNDERWATER VIEWING DEVICE
136 MISCELLANEOUS

CLASS 445 ELECTRIC LAMP OR SPACE DISCHARGE COMPONENT OR DEVICE MANUFACTURING

1 PROCESS
2 .Repairing, converting or salvaging
3 .With testing or adjusting
4 ..Electrode position sensing or adjusting by optical operation
5 .Including use of electric arc or current for removing an undesired particle, i.e., spot knocking
6 .With start up, flashing or aging
7 .Spark plug or spark gap making
8 .Implosion protecting
9 .Generating gas or vapor within an envelope, or coating by vapor, gas, mist or smoke within the envelope
10 ..Controlled vaporizing or coating
11 ..Depositing plural coatings
12 ..With diverse type coating operation
13 ..With subsequent treatment of the coating
14 ..Coating on particular base material, part or place
15 ..Plural gas or vapor generating operations
16 ..With gas introduction
17 ..With precedent or subsequent heating of tube or electrode
18 ..Including establishing an electric space discharge
19 ..Electromagnetic induction heating
20 ..Filament heating
21 ..Generating gas or vapor from reactive compostion containing a reducing agent
22 .Combined, e.g., with shaping of lamp or device envelope
23 .With assembly or disassembly
24 ..Display or gas panel masking
25 ...With sealing
26 ..Arc tube making, e.g., fluorescent lamp
27 ..Incandescent lamp making
28 ..Flash lamp, x-ray tube or laser making
29 ..Including electrode or getter mounting
30 ...CRT mask mounting
31 ...Getter mounting
32 ...Incandescent filament mounting
33 ...Plural electrode mounting
34 ....CRT grid or cathode gun
35 ..Electrode making
36 ...CRT type
37 ....CRT mask mounting
38 ..Including evacuating, degasifying or gas, vapor, liquid or meltable or sublimable solid introduction
39 ...With cooling, e.g., to condense
40 ...With heating, e.g., to outgas
41 ...By gettering
42 ...With subsequent evacuation
43 ...With particular sealing
44 ..Hermetically assembling plural parts
45 ...CRT
46 .Electrode making
47 ..Multi-apertured panel making, e.g., CRT mask
48 ..Incandescent filament making
49 ..Electrode shaping
50 ...Emissive type
51 ..Emissive type
52 ..Fluorescent type or mosaic electrode making
53 .Including evacuating, degasifying or getter or fluent material introduction
54 ..With cooling, e.g., to condense
55 ..By gettering
56 ..With subsequent evacuation
57 ..With heating, e.g., to outgas
58 .With coating, e.g., providing protective coating on sensitive area
59 .Including cleaning
60 APPARATUS
61 .Repairing, converting or salvaging means
62 .Having means to operate the device or portion thereof, e.g., to age
63 .Testing or adjusting means
64 ..Having optical means to sense or adjust electrode position
65 .Combined
66 .Assembly means
67 ..Having electrode positioning or assembly means
68 ...Having means to manipulate a CRT mask
69 ..Having means to manipulate lead wire, lamp base or terminal
70 ..Having evacuation or degasification means or means to introduce gas, vapor, liquid or solid treating agent
71 ..With turret means
72 .Including means to establish an electric space discharge
73 .Having evacuation or degasification means or means to introduce gas, vapor, liquid or solid treating agent

CLASS 446 AMUSEMENT DEVICES, TOYS

DECEMBER 1990

1 INCLUDING APERTURED BOARD AND ELEMENT HAMMERED INTO APERTURE
2 DOMINO EFFECT
3 INCLUDING VIBRATING OR HORIZONTALLY RECIPROCATING SUPPORT FOR TRAVELLING OBJECT OR TRAVELLING OBJECT THEREFOR
4 HAVING PORTIONS KNOCKED APART OR AWRY BY IMPACT
5 .Including portion serving as container for diverse articles (e.g., pinata)
6 .Vehicle
7 SIMULATION OF VEHICLE COCKPIT OR OF VEHICLE CONTROL
8 TOY MONEY BOX
9 .Having figure or mechanism operated or released by coin
10 .Having coin depositing mechanism
11 ..Coin projector
12 ..Coin depositing figure
13 .Having retractable coin slot or guard
14 OPERATED BY INTRINSIC TEMPERATURE CHANGE
15 HAVING MEANS FOR FORMING TRANSITORY BUBBLE
16 .Including movably mounted means to dip orificed member into solution
17 ..And mouthpiece
18 ..And variable size air chamber
19 .Including mouthpiece
20 ..And solution reservoir with discrete intermediate passage leading to bubble-forming area
21 .Including variable size air chamber
22 SPARKING
23 .Figure, wheeled, or simulated weapon
24 SMOKING
25 .Wheeled vehicle
26 BODY-CARRIED OR WORN
27 .Facial, head or neck
28 .Torso
29 STRADDLED
30 TETHERED FIXED-WING AIRCRAFT
31 .Tether-manipulated control or mechanism
32 ..Elevator control only
33 .Including aircraft-carried propulsion means
34 AERODYNAMICALLY SUPPORTED OR RETARDED
35 .Ornithopter
36 .Including rotary wing (e.g., helicopter, flying propeller, autogyro, etc.)
37 ..And means to rotate wing
38 ...Separable rotating means
39 ....Including resilient actuator
40 ....Including flaccid pulling element
41 .....Having rewinding spring or plural discrete flaccid elements
42 .....Flaccid element wound about and in contact with portion which moves aloft
43 ....Including spiral actuator
44 ...Including elastomeric actuator
45 ..And projector
46 .Spinning disc (e.g., flying saucer)
47 ..With electric light or sounder
48 ..Having through air passage
49 .Parachute
50 ..Released from airplane or simulated airplane
51 ..Released from container
52 ...From rocket or simulated rocket
53 ...Container detached from parachute
54 ..And separable projector
55 .Having retractable landing gear
56 .Jet-propelled
57 .Having motor-driven propeller
58 ..Gear-driven or having plural propellers
59 ..Elastomeric motor (e.g., rubber band)
60 ...Enclosed
61 .Glider
62 ..Having folding wing
63 ..And projector or launcher
64 ...Resiliently biased projector
65 ....Including means to retain resilient propulsion member in stressed condition
66 ..Having adjustably mounted airfoil
67 ..Having longitudinally folded or creased fuselage
68 ..Having ballast feature
69 HAVING SEPARABLE NESTED PARTS
70 SAND CONSTRUCTION
71 CONVERTIBLE FROM, OR SERVING AS DIVERSE ARTICLE
72 .Including figure toy
73 ..Diverse article is container, holder, or support
74 ...Diverse article is fluid container or handbag
75 .Including container or storing toy parts
76 .Container having shape of specific article
77 .Including toy appurtenance attachable to container
78 ..Rollable wheel
79 .Having severable portion (i.e., score lineline)
80 .Includng fold line (to convert to toy)
81 .Including sounding toy
82 TOY THEATER
83 .Including movable figure
84 ..Including marionette
85 CONSTRUCTION TOY
86 .With special tool or workholder
87 .For assembly into permanent form (i.e., nonseparable)
88 ..Vehicle (e.g., aircraft, automobile)
89 .Includng fluid conduit
90 .Including motor
91 .Including electrical feature or assembly
92 .Including permanent magnet or suction cup to secure elements
93 .Vehicle
94 ..Alternative vehicular forms
95 ..Wheeled
96 ...And pulling member or extrinsic guide
97 .Figure
98 ..Having attachable clothes
99 ..Alternative figures
100 ...Having detachable subordinate part of face or head
101 ..Plural mutually attachable
102 .Having parts assembled for relative movement
103 ..Including rotary gear, pulley, or strand-winding member
104 ..One part swingable about an axis extending along a side or transversely through its end
105 .Including post having plural longitudinal slots for panel or strip
106 .Including elongated element having laterally opposed interlocking notches (e.g., log cabin type)
107 .Including longitudinally flexed rod or strips
108 .Including connectable panels or strips
109 ..Folding panel, strip, or connector
110 ..And door, window or perfecting structure for building
111 ..With separate diverse connector between adjacent panels or strips

CONSTRUCTION TOY
.Including connectable panels or strips
..With separate diverse connector between adjacent panels or strips
112 ...Connected panels or strips having parallel edges and mutually angled faces
113 ...Extending transversely through panel or strip
114 ..Connected with adjacent edges transversely oriented
115 ..Connected panels or strips having parallel edges and mutually angled faces
116 ..Having resilient interlocking portions
117 .Single column stacking
118 .Including substrate for construction elements (e.g., for array of tiles or pegs)
119 .Including flaccid connector for joining plural elements
120 .Resilient interlocking joint (e.g., snap joint)
121 ..Resilient male member
122 .Including abutting elements having slots or apertures receiving discrete transverse connector
123 ..Transverse member is separable bolt or screw
124 .Interfitting elements
125 ..Including identically shaped interfitting portions
126 ..Including three rod-like elements projecting from a fourth element or common connector
127 ..Joined by lateral sliding (e.g., dovetail)
128 ..Including element having plural bosses for forming single joint
129 HAVING PERMANENT MAGNET (NOT MOTOR ASSOCIATED)
130 .For operating valve, switch, or clutch
131 .Including loosely confined parts moved relatively by magnetic field
132 .Manually held member for magnetic interaction with additional member having confined movements
133 .And member movable in spaced relation to moving magnet
134 ..Including interposed partition
135 ...Magnet or member moves along partition surface
136 ....Including motor to move member, magnet, or partition
137 .Contacting, mutually attracted members
138 ..Contact maintained during relative movement
139 ..Including figure or figure portion
140 INCLUDING MEANS CREATING, STORING, OR OPERATED BY STATICALLY INDUCED CHARGE
141 TELEPHONE
142 .Having electrical or voice feature
143 HAVING KEYBOARD
144 SIMULATED HAND OR POWER TOOL
145 .Saw or drill
146 HAVING MEANS TO DRAW
147 CHANGEABLE BOOK, CARD, OR PICTURE
148 .Including device erected by opening card or book, or removing from cover
149 .Movable picture portion
150 ..Moved by opening or closing card or book
151 ..Including hand-manipulatable actuator
152 ...For moving pivoted portion
153 AQUATIC
154 .Including remote control means or tether
155 ..For buoyancy control
156 .Including means to move figure or figure part
157 ..Including oar or paddle held by figure
158 ..Mechanical motor within figure
159 ..Fluid operated means to move figure or figure part
160 .Boat
161 ..Submersible
162 ...Including mechanical propulsion motor
163 ..Having propulsion means
164 ...Mechanical motor
165 ....And screw propeller rotated by motor
166 OPERATED BY GRAVITY-FED FLUENT MATERIAL
167 .For moving figure or figure portion
168 INCLUDING UNATTACHED GRAVITY-FED ROLLING, TUMBLING, OR ENERGY-IMPARTING FALLING ELEMENT, OR PATHWAY THEREFOR (E.G., MARBLE RUNWAY)
169 .For moving figure or figure portion
170 .Hand-supported or-manipulated runway
171 .And means for automatically recycling element
172 ..Hand-cranked element conveyer
173 .For moving element-supporting device
174 ..Wheeled element carrier
175 HAVING LIGHT-OR SOUND-RESPONSIVE SWITCH OR CONTROL
176 OPERATED BY RELATIVELY MOVING FLUID OR PRESSURE DIFFERENTIAL
177 .Including suction cup
178 .Including motorized fan
179 ..Producing supporting air column or cushion
180 .Including variable-size fluid chamber to move fluid
181 ..Supplying compressed gas to rupture sheet (e.g., film burster)
182 ...Including means to feed sheet
183 ..Squeezable figure
184 ...Sounding
185 ....Including external fluid-operated accessory or means to move figure portion
186 ..Contractable balloon for moving fluid
187 ...Jet-propelled balloon
188 ...Sounding
189 ...Wheel-actuated
190 ...And tearing, or having mechanism or manipulatable means for moving figure portion
191 ....Having electrical or wind-up motor
192 ...Including motive power means or hand manipulator for sounder
193 ....And bellows or bulb
194 ...Rotary or pivoted valve
195 ...Reciprocating valve
196 ....Including piston slidable along central apertured member
197 ..Bellows or bulb for moving fluid
198 ...To move figure or figure portion
199 .For changing or moving figure or figure part
200 ..Including mouthpiece for blowing or sucking
201 ..Including fluid-driven rotary blades
202 .Including mouthpiece for blowing or sucking
203 ..Plural differently operated sounders
204 ..Whistle or siren
205 ...Including discrete relatively movable portions
206 ...Including distinct means for enabling selection of pitch
207 ..Vibratory reed sounder
208 ...Including distinct means for enabling selection of pitch
209 ...And cone-shaped terminal portion (e.g., horn)

OPERATED BY RELATIVELY MOVING FLUID OR PRESSURE DIFFERENTIAL
210 .Convection-operated
211 .Having jet propulsion
212 ..And multiple stages or holder for launching
213 .Sounding
214 ..Having twistable or intertwistable flaccid strands for rotating sounder
215 ..Having tether for whirling sounder
216 ..Whistle or siren
217 .Having fluid-driven rotatable radial blade (e.g., pinwheel)
218 ..Rollable or having plural rotating bladed members
219 HAVING CHEMILUMINESCENT LIGHT SOURCE, OPTIC FIBER, MIRROR, OR LENS
220 INFLATABLE
221 .Having separately inflatable parts
222 .Including externally applied sealing element
223 .And means attachable to form a figure
224 .Having check valve
225 .Simulated aerial or space vehicle
226 .Figure
227 INFANT'S TOY AND MEANS FOR RETAINING, ATTACHING, OR SUPPORTING TOY IN INFANT'S ENVIRONMENT
228 SUSPENDED FOR TRAVEL BELOW GUIDE OR SUPPORT MEANS
229 .Including electrical or wind-up propulsion motor
230 SIMULATED AIRCRAFT OR SPACE VEHICLE (I.E., NON-AERODYNAMIC)
231 .Space vehicle or rocket
232 .Having means to rotate propeller or rotor
233 GYROSCOPIC
234 .Having figure
235 .Having detachable cord for spinning
236 ROTATING OR HAVING VISIBLE ROTATING PORTION (E.G., SPINNING OR WHIRLING, NOT ROLLING)
237 .On wheeled support
238 ..And having additional portion which reciprocates or oscillates, or which rotates about distinct axis
239 .Including corrugated support for imparting rotation
240 .Including unattached rod for manipulating toy
241 .Including helically grooved or twisted shaft for imparting rotation
242 .Including electric light or electric sounder
243 .Including markings producing visual effect (e.g., chromatic)
244 ..Thaumatropic effect
245 ..Cord impeller
246 .Including hand crank for imparting rotation
247 .Having attached cord for imparting rotation
248 ..Wound about rotatable member
249 ...Including spring to rewind
250 ...Bandalore
251 ....Including sounder, figure, or vehicle
252 ...Sounding
253 ..Intertwistable flaccid strands
254 ...Including sounding means
255 .Aerial (e.g., diabolo)
256 .Top
257 ..Plural tops
258 ..Including sounding means
259 ..And means for spinning
260 ...Spring impeller
261 ...Cord impeller
262 ....Including holding means
263 .....Seperable
264 ..Having special tip or spindle
265 .Sounding
266 .Handle supported manually actuated rotating portion
267 HAVING ENCLOSED LIQUID
268 FIGURE TOY OR ACCESSORY THEREFOR
269 .Rollable
270 ..Having sounding means
271 ...Including resiliently recovering striking mechanism
272 ...And wheel-driven mechanism for moving figure or figure portion
273 ..Pivoted figure having center of gravity below pivot axis
274 ...Including wheel-driven mechanism for moving figure portion
275 ..Vehicle and external figure
276 ...Having moving limb or foot to simulate walking
277 ....By direct linkage to vehicle wheel or axle
278 ..Elongate figure having writhing or undulating movement
279 ..Figure mounted on wheeled support
280 ...Including wheel-driven mechanism for moving figure or figure portion
281 ....Plural relatively moving figures
282 .....Dependent movement or common component
283 ......One figure mounted on another figure
284 ......Relatively moving portions of one figure
285 ....Having moving limb or foot to simulate walking
286 ....Figure movement simulates propulsion of wheeled support
287 ....Movement about vertical axis or by bent support wheel axle
288 ...Including means to move figure or figure portion with respect to wheeled support
289 ..Including axle through or within figure
290 ...Front and rear axles
291 ....More than two axles
292 ....Including wheel-driven mechanism for moving figure portion or accessory
293 .....For moving limb or foot to simulate walking
294 ...Having moving limb or foot to walk or simulate walking
295 .Having means to simulate respiration, heartbeat, body temperature, or specific symptom of illness
296 .Having means for simulating personal toilet or medical activity or device therefor (e.g., bathing, hair care, etc.)
297 .Having sounding means
298 ..And internal mechanism to move figure portion
299 ...Phonograph, tape, or wire
300 ...Head or head part movement
301 ....Eye, eyelid, or mouth movement
302 ..Phonograph, tape, or wire
303 ..And motive power means or hand crank
304 .Nursing, eating, or drinking
305 ..And tearing or wetting
306 .Tearing
307 .Rope skipping
308 .Leaping or projected figure or accessory
309 ..Figure
310 ...From within enclosure (e.g., "Jack-in-the-box")

	FIGURE TOY OR ACCESSORY THEREFOR
	.Leaping or projected figure or accessory
	..Figure
311	...Self-projecting
312	....By impulse from moving limb or foot
313	.Animal and rider
314	.Including guide for ascending or descending figure
315	..And flaccid element for supporting or moving figure
316	.Constructed for walking down incline
317	.Including spring for returning limb or foot during walking
318	.Including musical instrument or simulation thereof
319	.Variable length hair
320	.Enlargeable or elongatable figure or figure portion
321	.Having selectively displayed alternative faces, limbs, or bodies
322	.Seesawing or swinging (e.g., jumping jack)
323	..Including flaccid support or actuator for figure
324	.Tumbling
325	.Balanced or self-righting
326	..Having relatively movable section on balanced or self-righting portion
327	.Having hand-or finger-accommodating means in figure
328	..Hand or finger forms visible part of figure
329	..And movable jaw
330	.Having mechanism or manipulatable means to move figure or figure portion
331	..Base-mounted figure and button-controlled flaccid element to move figure or figure portion
332	..Figure movable along endless path
333	..Kicking
334	..Fighting
335	...Including motive power means or hand crank
336	..Striking
337	..Having changeable facial feature
338	...And means to move or manipulate head
339	...Changeable by hand-manipulatable means
340	....Manipulatable means is different body portion
341	....Including changeable eye
342	...Movable eyelid
343	...Movable eye
344	....Universally movable
345	....About horizontal axis
346	.....Independently movable eyes
347	.....Incrementally closed by rocking figure
348	.....Having end-mounted axle, or relatively pivoted or sliding anchoring portions
349	.....Having lock or drag for eye movement, or having spring acting against axle in slot
350	.....Adjustable eye spacing
351	..Operated by movably mounted weight
352	..Including motive-power means or hand-crank mechanism
353	...Motive-power means intrinsic to figure
354	....Human figure having movably attached arm or leg portion moved by motive power means
355	.....Walking
356	....Four moving supporting limbs or feet
357	...Plural relatively moving figures
358	...Including extrinsic electric or wind-up motor
359	..Including support or manipulator extrinsic to figure (e.g., marionette)
360	...Relatively movable striking platform
361	...Flaccid support or manipulator
362	....Plural flaccid elements to manipulate plural body parts
363	.....Hand-held overhead support for flaccid elements
364	....For drawing figure along surface
365	...Resiliently biased body portion
366	...Rod-supported or-controlled figure
367	....Plural rods for manipulating plural body parts
368	.Reptile
369	.Fabric-covered stuffed figure
370	..Having enclosed reinforcing or skeletal portion
371	..Including hinge feature connecting parts
372	..Including facial or hair feature
373	.Having enclosed reinforcing or skeletal portion
374	..Of non-recovering bendable material
375	..Including pivoted joint
376	.Having movably joined body parts
377	..Walking
378	..And locking means for retaining body parts in adjusted position
379	..Including separate resilient member
380	...Elastomeric member
381	...For joint allowing movement about plural axes
382	..By bendable or pliant material connecting parts
383	..Including joint allowing movement about plural axes
384	..Swivelled head
385	.Formed from specific material
386	..Edible material
387	..Sheet material figure (e.g., paper doll)
388	...Three-dimensional folded figure
389	..Eye
390	.Limb, hand or foot
391	.Head
392	..Eye
393	...Eyelash
394	..Having hair
395	..Mouth feature
396	BALANCED OR SELF-RIGHTING (E.G., ROCKING)
397	SOUNDING
398	.Detonating
399	..Including projecting means
400	..Projectile
401	..Simulated weapon
402	..Cane or rod thrust longitudinally against surface
403	...Including magazine
404	.With means facilitating combination with diverse art device
405	.Having simulated weapon feature coordinated with sound
406	..Including finger trigger for sounder
407	...Single report
408	.Simulated musical instrument, radio, camera, or television device
409	.Including rolling or tumbling toy
410	..Toy locomotive
411	..And rod, cable or tether as guide means
412	...Guide means secured centrally of wheel
413	....Including wheel-carried strikers for impacting non-rotating portion

	SOUNDING
	.Including rolling or tumbling toy
414	..Having belt-carried or rotary striker on vehicle
415	.Snapping sheet member (e.g., cricket)
416	.Voice-actuated diaphragm (e.g., kazoo)
417	.Tick-tack
418	.Percussion
419	..Unsecured loosely confined percussive member (e.g., rattle)
420	..Ratchet-actuated
421	..Including handle for shaking, flipping, or flicking
422	...Resiliently restored swinging percussive member
423	GARAGE
424	MATERIAL OR ARTICLE HANDLING DEVICE
425	.Having load supporting swingable arm
426	..Horizontally swinging (e.g., crane)
427	.On wheeled vehicle
428	..Having tiltable vehicle body portion for discharging contents (e.g., dump truck)
429	DISCRETE LAUNCHER, ACCELERATOR, OR RETARDER FOR TOY VEHICLE
430	.Including helical spring or elastomeric strip
431	ROLLING OR TUMBLING (E.G., WHEELED)
432	.Fire apparatus
433	.Endless track vehicle
434	.Tractor or trailer
435	.Vehicle and means for freeing or launching object therefrom
436	.Including changeable program carried by vehicle
437	.Including means for causing erratic movement
438	.Including illumination means
439	..And battery holder on rolling or tumbling toy
440	.Motorcycle, tricycle or bicycle
441	.Including vehicle-carried control mechanism activated or deactivated in response to contact with extrinxic structure
442	..Reversing
443	.Having reversible drive
444	.Including extrinsic guide or means cooperable with extrinsic guide
445	..Cooperable traction means on vehicle and roadway
446	..By guide surface below running surface
447	...Vehicle having flanged wheel
448	.Including wheel-or axle-operated device
449	..Operated by belt drive or by tangential contact with wheel
450	.Including handle, rod or tether for physically guiding or propelling (e.g., trundle, hoop, etc.)
451	..Plural wheels
452	..Guide means secured centrally of wheel
453	..Including rolling element or sliding or pivoted retainer between rod and hoop or wheel
454	.Remotely controlled
455	..Via conductor adjacent to vehicle path
456	..By radio signal
457	.Including intrinsic motive power means for propulsion
458	..And eccentric weight
459	..Elastomeric (e.g., rubber band)
460	..Steering vehicle
461	..Having lock for rotary motor or transmission
462	..Having instrinsic energy-storing battery or flywheel
463	...And clutch
464	..Flat spiral or torsion spring
465	.Wheeled vehicle
466	..Wheels vertically movable relative to chassis
467	..Railroad locomotive simulation
468	..Having means permitting turning of wheel for steering
469	..Having specific means for mounting axle to chassis
470	..Having specific body structure
471	...Demountable
472	SIMULATED MEDICAL OR TOILET DEVICE
473	SIMULATED WEAPON OR PROTECTOR
474	SIMULATED CLOTHES OR FABRIC WORKING OR CLEANING
475	INCLUDING DISPENSER
476	BUILDING, TOWER, BRIDGE OR HABITATION
477	.Including electrical feature
478	.Folding or collapsible
479	BUILDING FURNISHING OR APPLIANCE
480	.Simulated fireplace
481	.Simulated stove, heater, or cooking device
482	.Chair, table, desk, cabinet or bed
483	SIMULATED DISPENSER OR PUMP
484	ELECTRIC
485	.With lamp
486	RESILIENT TOY OR ACTUATOR
487	FOLDABLE, COLLAPSIBLE, OR HAVING PIVOTED PORTION
488	.Sheet material folded to form object
489	INCLUDING SLIDING OR GUIDING ELEMENT OR PORTION
490	INCLUDING FLACCID ELEMENT OR PORTION
491	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTION
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901	DETACHABLY ADHESIVE

CLASS 449 BEE CULTURE

1	METHOD
2	.Honeybee
3	HIVE
4	.For nonhoney producing bee
5	.With provision to extract honey
6	.Observation
7	.Multi-queen; e.g., swarm capture
8	..Queen raising
9	.With feeder
10	..Fitted in frame slot
11	..Having external food supply
12	.With heater
13	.With ventilator
14	..In cover
15	.Cover
16	.Alighting board
17	.Comb honey
18	.Having propolis collector
19	.Having pollen collector or applier
20	.Passage
21	..Queen/drone control means
22	..Moth control means
23	..One-way passage
24	..Adjustable
25	...Entrance
26	.Stand or hive container
27	.Transportation provision or swarm catcher
28	..Queen bee
29	.Hive shell of particular material
30	..Plastic or paper
31	..Ceramic, clay or plaster
32	.Vertically stacked hive bodies
33	..Directly accessible lower body
34	..Congruent bodies
35	.Separable honey frame type
36	..Pivoted honey frame
37	..With honey frame spacer
38	..Side opening hive
39	...Pivoting side
40	....Vertical pivot
41	..Laterally disposed compartments
42	..Honey frame or honeycomb foundation details
43	...Snap fit together or of plastic
44	...Honeycomb foundation details
45	....Strand or metal reinforced honeycomb foundation
46	.Side opening
47	VENOM COLLECTOR
48	FEEDER
49	BEE FOOD PREPARATION MEANS
50	BASE MOUNTED DEVICE
51	.Means to remove honey frame from hive
52	.Means to remove bees from hive
53	.Honey extraction device
54	.Honeycomb decapping device
55	..Having heater
56	.Hive or frame cleaning
57	.Assembling device
58	..Honeycomb foundation
59	...Honeycomb foundation wiring
60	.Honeycomb foundation former
61	RANDOMLY MANIPULATED DEVICE
62	.Plier type
63	.Honeycomb decapping device
64	.Hive body separating device

CLASS 450 FOUNDATION GARMENTS

DECEMBER 1990

1 BREAST OR CHEST, E.G., BRASSIERES
2 .With shoulder or back brace
3 .With midriff covering extension terminating adjacent waistline, e.g., "longline"
4 ..With additional means interiorly attached to extension to support the diaphragm area
5 ..Midriff extension includes overlapping relatively movable parts
6 ..With means to attach extension to subjacent body-supporter or garment, e.g., hold-downs
7 .Combined with subjacent body supporters, e.g., foundation garment
8 ..Including plural superimposed supporting panels or bands
9 ...With separable closure for each layer
10 ...Each layer separately encircles body
11 ..Including apparel-type garment
12 ..Vertically slidable overlapped portions between breast and torso support
13 ...With elastically extensible connector
14 ..Detachably secured to subjacent supporter by separable fastener
15 ..Subjacent supporter unattached at front
16 ..Subjacent supporter unattached at back
17 ..Front center separable closure for both breast and torso support
18 ..With size adjustment for both, e.g., maternity type
19 ..Including plural elastic panels or inserts with diversely oriented lines of elasticity
20 ..Including elastic portions with varying modulus of elasticity
21 ..Including elastic portion with stretch inhibitor of limit
22 ..Subjacent supporter includes crotch member
23 ..Wraparound overlapped type torso support
24 ..Including panels having pleats or folds to permit size increase
25 ..Stepwise girth adjustment
26 ..With separable fastener or connector for apparel-type garment
27 ..Low out at back
28 .With separable fastener or connector for apparel-type garment
29 ..For hosiery
30 .Combined with apparel-type garment
31 ..Breast supporting member within other garment
32 ...Removable breast supporter
33 ..Subjacent garment attached at front only
34 ..With means providing girthwise elasticity for brassiere
35 ...Portion of garment covers elastic connector at back
36 .Closable aperture permits access to breast i.e., nursing type
37 .With lacteal fluid receptor or shield
38 .With inflatable or liquid-containing chambers
39 .Molded preshaped shell-like cup, e.g., plastic latex
40 ..Strand-type fabric with thermoplastic fibers or filaments
41 .With stiffening strips, strands, or stays, e.g., wired
42 ..Cup form includes spirally arranged strip
43 ..Woven or braided strand-type fabric, e.g.,wire gauze
44 ..Cup form includes latticework of strips
45 ..Paired strips or stays for cup rims with connecting span
46 ...With separable joint between paired stays
47 ...Annular cup-rim-encircling stays
48 ...Stays with conneting span form U, V, H, or V shape between the breasts
49 ...Cup fabric has tunnels separably retaining joined stays
50 ..Plural separate stays diagonally crossing between cups
51 ..Annular cup-rim encircling stay individual to one cup
52 ..Single stay individual to one cup with arcuate portion along bottom rim of cup, e.g., U-shaped
53 .With stiffened supporting means contacting only lower half of breast
54 .With means to separably retain breast-form-supplementing pads
55 .With cup-supplementing means to add volume to breast, e.g., pads
56 ..Applied to only lower half of breast
57 ..Pads, per se.
58 .Separable at front center
59 .With cup supplementing uplift straps or slings diagonally crossing at front center
60 .With floatingly attached cup-supplementing breast supporting strip or panel
61 ..Forming breast-receiving pouch with cup bottom
62 ..Supplementary means includes body-girdling straps
63 ..Attaching means includes adjustment feature
64 .Straps narrow bands only, i.e., skeletal type
65 .Elastically expansible cup or cup rim
66 ..All-elastic cup
67 ..Expansible cup rim, e.g., elastic shirring
68 ..With means to vary size of breast cups
69 ..By vertical gathering of material between the cups
70 .Cups joined to common subjacent elastic strip of panel
71 .With variable length connector between cups
72 ..Elastic connector
73 ...With additional nonelastic connector means
74 .Including plural elastic panels or inserts with diversely oriented directions of elasticity
75 .Including elastic portions with variable modulus of elasticity
76 .Including elastic portion with stretch inhibitor or limiter
77 .With girthwise inelastic size adjustment additional to separable closure
78 .With means to gather peripheral edge, e.g., drawstring
79 .Body band has overlapping separately secured ends
80 .Resilient body-clasping band
81 .With adhesive means or vacuum cup to secure to body
82 .Body-embracing band includes detachable connector unit
83 .Body-embracing band means includes vertically spaced portions
84 ..One portion is narrow waist-encircling band

BREAST OR CHEST, E.G., BRASSIERES
85 .Extended length wraparound body bands
86 .Shoulder strap arrangements and connecting features
87 ..Connected by floating extension at or below horizontal mid-cup region
88 ..Detachable, e.g., convertible to strapless
89 .With compartment for carrying articles, e.g., coin pocket
90 .With reinforcing stitching
91 .Reversible
92 .Methods of making or assembling
93 .Materials
94 FOR LOWER TORSO INCLUDING THIGHS, E.G., CORSET, GIRDLES
95 .Combined with apparel type garment
96 .With shoulder or upper back brace
97 .Comprising sheet rubber or deposited rubber or latex
98 .With means bridging or filling out hollows in the body
99 .With individual buttock-receiving concavities
100 .With crotch or leg straps or leg-encircling parts
101 ..Upper-leg-encircling compressor, e.g., thigh reducers
102 ..With detachably connected crotch piece
103 ...Completely removable
104 ..Including crotch piece, e.g., panty girdle
105 ...With opening therethrough, e.g., overlapped panel
106 ..Leg anchors
107 .Comprising latticework of narrow strips or bands, e.g., skeletal
108 .With apertured insert-type panel for ventilation
109 .With stiffener for upper margin, terminating substantially above lower margin, e.g., waistline antiroll
110 .With means to supportingly engage apparel-type garment, e.g., skirt supporters
111 ..Hosiery supporter
112 .With means to resist vertical motion on body, e.g., friction grips
113 ..Over-shoulder straps
114 .With stiff or nonflaccid body-supporting plate or panel
115 .With elastic portions having means to limit or control stretching thereof
116 .Elastic in entirely (may include nonelastic closures or girth adjusters)
117 ..Edge joined multipanel
118 ...With nonparallel lines of elasticity
119 .Belt-operated lacing for closures or adjusters
120 .Vertically slidable overlapped portions, e.g., "telescoping"
121 .One portion laced through aperture in another portion
122 .With superimposed supporting panels or bands
123 ..At least one layer includes elastic feature
124 ...Superimposed elastic layers having nonparallel lines of elasticity
125 ..Layers are readily separable (detachable) one from another
126 ...With selectively different assembled positions
127 ..Each layer circumferentially separable, with closure
128 ..Each layer substantially separately encircles body
129 .Having pretensioning means bridging girthwise closure
130 .Elastic portions have nonparallel lines of elasticity
131 .Elastic bands or panels with varying modulus of elasticity or with stretch limiter
132 .With elastic band, panel, or portion, e.g., gussets
133 ..Detachably secured to garment
134 .Girth adjustment by predetermined increments
135 ..With insertable or removable girth-changing units
136 .Having girth adjuster and separate nonadjustable separable fastener for closure
137 .With plural separately acting girth dimension adjusters
138 ..Vertically spaced
139 .With stays at closure edges having nonflaccid interengaging fastening means
140 .Plural disconnectable panels with selectively different assembled positions
141 .Lacing-type closure with flaccid lace-receiving eyelet or loop
142 .Closures or girth adjusters with interiorly disposed chafing shield
143 .With stiffening strips or stays
144 ..Including stay-reinforcers at waistline or broken stay shields
145 ..Movably articulated directly one to another
146 ..Readily separable from supporter, e.g., from pockets
147 ..Having means to interengage with lacing cord
148 .With closure means for access opening at lower rear margin of buttock-girdling member
149 .With insertable or removble panel unit, e.g., "convertible"
150 .With article carrying pockets
151 .Panels reinforced by tapes or bands
152 .With loops for dooning
153 .Protective covers, liners, or shields
154 .Waistline type, i.e., limited vertical extent
155 .Abdominal uplifting sling type
156 .Materials and making, e.g., pattern layouts

CLASS 452 BUTCHERING

1 CRUSTACEAN (E.G., SHRIMP, CRAB, LOBSTER, CRAYFISH)
2 .Shrimp processing
3 ..Deveining
4 ..Beheader
5 ..Peeler
6 .Hand tool
7 .Vibratory meat removal
8 .Meat removal by pressure differential
9 .Squeezing meat out
10 .Meat removal by centrifugal force
11 .Claw lock
12 MOLLUSK (E.G., OYSTER, CLAM, SQUID, MUSSEL, OCTOPUS, SNAIL, SLUG, SCALLOP)
13 .Bivalve opener
14 ..With heat treatment
15 ..By pressure differential
16 ..Support and wedge
17 ..Hand tool
18 .Eviscerating
19 ..Pinching rollers
20 ..By fluid pressure
21 SHIRRING OF CASING
22 .Combined with sausage stuffing
23 .Multiple shirring devices operating simultaneously
24 .Shirring head
25 ..Moves about axis parallel to shirring mandrel
26 ..Combined with twisting of casing
27 .Fluid lubrication of casing
28 ..Inflation pressure control
29 .Severing into descrete lengths
30 SAUSAGE MAKING
31 .Automatic control
32 .Casing handling
33 ..Insertion on nozzle
34 ...Indexing onto stuffing horn
35 .Stuffing
36 ..Multiple head
37 ..Sausage sizing and shaping
38 ...Sizing ring
39 ...Casing insert (e.g., flat ended sausage)
40 ..Pump type
41 ...Rotary piston
42 ...Reciprocating piston
43 ....Fluid motor
44 ...Screw
45 ..Nozzle
46 .Linking
47 ..By twisting
48 ..By applying constricting member
49 .Delinking
50 .Peeling
51 .Sausage link handling
52 SLAUGHTERING
53 .Conveying live animals to slaughtering apparatus
54 .Restraint or immobilizer
55 ..Knocking pen
56 ..Fall directing device
57 .Stunning
58 ..Electric
59 ...Trough or tank
60 ...Hand held stunner
61 ..Spring loaded
62 ..Pneumatic
63 .Throat slitting or severing
64 ..Beheading
65 .Sticking
66 .Anesthetizing or gassing
67 .Bleeding
68 ..Suction assisted
69 ..Trocar and cannula
70 .Tongue protector
71 EPIDERMAL OUTGROWTH REMOVER
72 .Wax-type
73 .Singeing
74 .Scalding
75 ..With simultaneous scraping or defeathering
76 ...Spray type scalding
77 ..Spray type scalder
78 ..Tanks
79 ...Means for raising or lowering animals into or out of scalding tank (e.g., hoists)
80 ...Conveyed through scalding tank
81 .By fluid material impingement
82 .Gripping type
83 ..And further including rotary type remover
84 ..At least one surface rotates and moves cyclically towards and away from the other gripping surface
85 ...Pinched between roller nip
86 .Power driven
87 ..Beater (i.e., flexible end)
88 ...Rotary
89 ....Carcass conveyed past beater
90 .....Axis of rotation parallel to work path
91 .....Axis of rotation perpendicular to work path
92 ....Batch type
93 ....Beater element structure or mounting
94 ..Rotary scraper (i.e., rigid end)
95 ...Carcass conveyed past scraper
96 ...Batch (e.g., cradle)
97 ...Scraper element structure or mounting
98 ..Scaler (i.e., serrated or toothed end)
99 ...Rotary
100 ....Driven behind boat
101 ....Hand held
102 .Hand tool
103 ..Diverse tool
104 ..Scraper
105 ..Scaler
106 VISCERA PROCESSING
107 .Eviscerating including means to remove external portion of animal
108 ..Removal of head with viscera
109 ..Removal of vent with viscera
110 .Roe or ova
111 .Gizzard
112 ..Harvesting
113 ..Opener
114 ...With cleaning
115 .Oil gland removers
116 .Pressure differential type
117 .Gripper or hook type eviscerator
118 .Spoon type eviscerator
119 .Rotary scrubber type eviscerator
120 .Venting or opening preparatory to eviscerating
121 ..Of fish
122 ..By tubular rotary cutter
123 .Viscera cleaner
124 .Giblet inserter
125 SKINNING
126 .Temperature modification perfects skinning operation
127 .Peeling by movement of workpiece past cutter
128 .Gripper or hook type
129 ..Drum skinner type
130 ..Skin pinching roller type
131 .Fluid pressure type
132 .Skinning implement (e.g., hand tool)
133 ..Power type
134 DEFATTER
135 DEBONING
136 .Plow type
137 ..Hand-held tool
138 .Pressure type

	DEBONING
139	.Beater or abrader type
140	.Fluid impingement type
141	TENDERIZERS
142	.Coacting rolls
143	.Roll and plate
144	.Coacting toothed plates
145	.Hand roll
146	.Hand manipulated pounder
147	..With chopper
148	SCORING CUTTERS
149	CARCASS SUBDIVISION
150	.Automatic control
151	..Of cutters in series
152	..Of splitting
153	...Carcass oriented relative to cutter
154	..Of extremity cutter
155	..Of subdivision into portions
156	...Movement of cutter controlled
157	....By sensed dimensions of carcass
158	....By sensed color variation
159	.....By manually placed markings
160	.Cutting longitudinally through body or body portion (i.e., splitters)
161	..Fish filleting
162	...Coacting rotary disc cutters
163	..Means repositioning carcass relative to cutter
164	..Portable cutter
165	.While internally supported on a mandrel
166	.Extremity remover
167	..Carcass suspended during removing
168	...Neck puller
169	..Wing remover
170	..Carcass conveyed to cutter in horizontal position
171	.Loin remover
172	SINEW REMOVER
173	WASHER
174	MODELLING (E.G., SHAPING)
175	.Bacon stretcher
176	.Visceral cavity closure
177	CONVEYER
178	.Elevating
179	.Orienting
180	.Registering (i.e., aligning)
181	.Metering (e.g., from bulk supply)
182	.Transfer from one conveyor to another
183	.Loading or unloading
184	.Sorting
185	SUPPORT
186	.Smoke stick
187	.Carcass or portion suspended (i.e., hanger)
188	..Fowl
189	..Gambrel
190	...Grappling
191	...Weight of suspended carcass spreads carcass engaging means apart
192	...Foldable to facilitate transport
193	..Bacon hanger
194	.Underlying support
195	..With clamp (clipboard type)
196	..With prong (e.g., impaling means)
197	.Carcass spreader
198	MISCELLANEOUS

CLASS 453 COIN HANDLING

1 CHANGE COMPUTATION AND DELIVERY
2 .Electric computation
3 ASSORTER
4 .Photoelectric
5 .Largest first
6 ..Centrifugal device conveys coins through assorter
7 ..Belt or chain conveys coins through assorter
8 ..Agitator or vibrator conveys coins through assorter
9 .Smallest first
10 ..Centrifugal device conveys coins through assorter
11 ..Belt or chain conveys coins through assorter
12 ..Rotation device conveys coins through assorter
13 ...Rotation device is apertured plate
14 ..Stepped rail type assorter
15 ..Deflector type assorter
16 SUPPLY LEVEL DETECTOR
17 .Electric
18 DELIVERER
19 .Delivery from plural sources by a single actuation
20 ..Electric
21 ...Rectilinearly reciprocating
22 ..Compound movement
23 ..Rectilinearly reciprocating
24 ...Ejector
25 ....Integral
26 ....Lever operated
27 .....Finger actuated (e.g., key button)
28 ....Finger actuated (e.g., key button)
29 .Delivery of a distinct number of plural coins from a single source
30 ..With counter
31 ...And means to wrap delivered coins
32 ...Electric
33 ...Apertured coin mover
34 ...Notched coin mover
35 ...Star wheel
36 ..Compound movement
37 ..Rectilinearly reciprocating
38 ...Plural superposed ejectors
39 .Delivery of a single coin
40 ..Electric
41 ...Rectilinearly reciprocating
42 ..Compound movement
43 ..Rectilinearly reciprocating
44 ...Ejector
45 ....Lever operated
46 .....Finger actuated (e.g., key button)
47 ....Finger actuated (e.g., key button)
48 ....With follower
49 ..Rotary
50 ..Resilient outlet
51 ...With follower
52 ....Spring biased
53 ..With follower
54 ...Spring biased
55 .Vibratory
56 .Belt or chain
57 .Rotary
58 COUNTER OR INDICATOR
59 .With means to wrap coins
60 .Graduated markings
61 STACKER
62 .With tapered guide
63 MISCELLANEOUS

CLASS 455 TELECOMMUNICATIONS

1 INTERFERENCE SIGNAL TRANSMISSION (E.G., JAMMING)
2 AUDIENCE SURVEY AND USE ACCOUNTING
3 DISTRIBUTION SYSTEM (E.G., PLURAL CABLES)
4 .Remote control of distribution system
5 .Two-way
6 .Common antenna or cable
7 CARRIER WAVE REPEATER OR RELAY SYSTEM (I.E, RETRANSMISSION
8 .Failure compensation (e.g., spare channel)
9 .Monitoring
10 ..Fading compensation
11 .Portable or mobile repeater
12 ..Space satellite
13 ...With plural repeater or relay systems
14 .With transmission line
15 .Two separate way transmission
16 ..Simultaneous using plural repeaters at each location
17 .Plural modulated carriers
18 .With delay or recording
19 .Common antenna
20 .With frequency conversion
21 ..With demodulator
22 ..Plural conversion stages
23 .Frequency or phase modulation
24 .Transmitter/receiver feedback compensation
25 .Directive antenna
26.1 USE OR ACCESS BLOCKING (E.G., LOCKING SWITCH)
31 SYSTEM WITH RECEIVER SELECTION
32 .Receiver scans for address signal
33 .Zoned/cellular
34 .Exclusive assigned or seized channel
35 .Tone coded squelch
36 ..Plural tones
37 ...Difference frequency
38 .Coded sequence
39 TRANSMITTER AND RECEIVER AT SEPARATE STATIONS
40 .Earth or water medium
41 .Near field (e.g., inductive or capacitive coupling)
42 .Frequency or phase modulation
43 ..With modification of frequencies of analog signal passed (e.g., pre-emphasis or de-emphasis)
44 ..With stated modulation index
45 ..Via subcarrier
46 .Suppressed carrier wave system
47 .Single or vestigial sideband system
48 .Inverted sideband
49 .Plural transmitters or receivers (more than two stations)
50 ..Noise, distortion, or singing reduction
51 ...Synchronized stations
52 ...Fading compensation
53 ..With central station
54 ...To/from mobile station
55 ....Using radiating transmission line
56 ....Multiple base stations
57 ...Plural receivers tuned to common frequency
58 ..Break-in or lockout
59 .Single message via plural carrier wave transmission
60 ..Different phases of same frequency carrier
61 .Single message via plural modulaton of single carrier
62 .Optimum frequency selection
63 .Distortion, noise, or other interference prevention, reduction, or compensation
64 ..Plasma source or barrier
65 ..Anti-multipath
66 .With diverse art device
67 .With measuring, testing, or monitoring of system or part
68 .With control signal
69 ..Transmitter controlled by signal feedback from receiver
70 ..Receiver control signal originates at message transmitter
71 ...Frequency control
72 ...For compression and expansion of message signal (i.e., companding)
73 TRANSMITTER AND RECEIVER AT SAME STATION (E.G., TRANSCEIVER)
74 .Convertible (e.g., to diverse art device)
75 .With frequency stabilization (e.g., automatic frequency control)
76 ..Synthesizer
77 .With tuning
78 .With transmitter-receiver switching or interaction prevention
79 ..Automatic (e.g., voice operated)
80 ...With distributed parameter coupling
81 ....Waveguide
82 ...Common antenna
83 ..Single antenna switched between transmitter and receiver
84 .With a common signal processing stage
85 ..Transmitter oscillator used as detector
86 ..Transmitter oscillator used as local oscillator
87 ...Tunable or variable
88 .Transceiver controlling a separate transceiver or receiver
89 .Portable or mobile
90 .Housing or support
91 TRANSMITTER
92 .Remote control of a transmitter
93 .Convertible to different type (e.g., AM to FM)
94 .Alternator
95 .Mobile or portable
96 ..Transmitter ejected from moving vehicle
97 ..With antenna ejection or external support
98 ..With aircraft, satellite, or projectile
99 ..With vehicle
100 ..Body attached or connected
101 .Diversity
102 .Plural modulation
103 .Plural separate transmitters or channels
104 ..Carrier and sidebands separately transmitted
105 ..Common frequency
106 .Modulation by absorption, shielding, or reflecting
107 .With variation of antenna impedance or dimension for modulation
108 .Amplitude modulation
109 ..Vestigial or single sideband or suppressed carrier
110 .Angle modulation
111 ..Including distributed parameter structure
112 ..With frequency multiplication or division
113 ..With frequency control
114 .With harmonic radiation suppression
115 .Measuring, testing, or monitoring of transmitter
116 .Carrier amplitude control (e.g., voice operated on/off)

RECEIVER OR ANALOG MODULATED SIGNAL FREQUENCY CONVERTER
.Squelch
219 ..With automatic gain or volume control
220 ..Adjustable
221 ..Audio responsive
222 ..Noise controlled
223 ...Short duration (noise blankers)
224 ....Separate broadband detector channel
225 ..Plural paths
226 .Measuring or testing of receiver
227 .Responsive to an input signal of particular predetermined frequency
228 ..Responsive to specified modulation (e.g., call alarm, Conelrad)
229 ..Responsive to carrier absence or presence
230 .Local control of receiver operation
231 ..Applied at or for specific intervals or periods of time
232 ..Gain, level, or volume control
233 ...With diverse control (tone, etc.)
234 ...Automatic
235 ....Forward acting
236 ....Variable conversion efficiency (variable oscillator amplitude, etc.)
237 ....Responsive to locally injected pilot
238 ....Responsive to vehicle speed
239 ....Nonlinear automatic gain control
240 .....Variable automatic gain control loop gain
241 .....Different gain stages
242 .....Delayed
243 ......Radio frequency stage only delayed
244 .....Dual time constant
245 ....Automatic gain control signal derived from baseband
246 ....Plural inputs or conditions to generate automatic gain control signal
247 .....Separate automatic gain control signals
248 ....Constant or controlled input impedance
249 ....Variable attenuator type
250 ....Automatic gain control to improve strong signal handling
251 ....Different automatic gain control levels or bias to individual stages (partial automatic gain control)
252 ....Plural stages controlled with plates, screen grids, or cathodes connected in parallel
253 ...Semiconductor
254 ..Sensitivity control
255 ..Local oscillator frequency control
256 ...Combined with other control
257 ...Automatic
258 ....Utilizing particular local oscillator control
259 .....Reference oscillator or source
260 ......Phase lock loop or frequency synthesizer
261 .....Variable reactance (e.g., reactance tube)
262 ......Voltage controlled capacitor
263 .....Discriminator or detector
264 .....Voltage control of oscillator
265 ....With local oscillator synchronization or locking
266 ..Selectivity or bandwidth control
267 ..Tone control
268 ..Fidelity control
269 .With wave collector (e.g., antenna)
270 ..Power-line or receiver element used as wave collector
271 ..Suppression of radiation from receiver via wave collector
272 ..Plural separate collectors
273 ...With paticular output combining
274 ....Loop or coil antenna
275 ...With frequency changing or selecting in the output path of one or more collectors
276 ..With phase shifting, correcting, or regulating in the output path of one or more collectors
277 ...Selectively or alternately connected to receiver
278 ...Combined with noise or interference elimination
279 ....Plural antenna currents entering single transformer
280 ..With coupling to a stage of the receiver
281 ...Having distributed parameters
282 ....Transmission line
283 ...Undesired signal or noise control (e.g., antistatic)
284 ....Balancing or cancelling
285 ....With image frequency suppression
286 ....Wave filter, coil, or wave trap
287 ....Shunt or bypass
288 ....Particular composition (e.g., of cell or element)
289 ...With coupling varying, regulating, or control
290 ...Including passive tuned circuit
291 ...Using active device (e.g., as preamplifier or reactance)
292 ...Transformer or other passive inductance
293 ...Specified stage (e.g., mixer, amplifier, or demodulator)
294 ....With particular electron tube structure
295 .Modulation distortion or cross talk correction or elimination
296 .Noise or interference elimination
297 ..In vehicle
298 ..Originating in power supply
299 ...Filter or rectification in power supply energized by fluctuating or a.c. source
300 ..By shielding
301 ...Plural or compartmented shielding structure
302 ..Image frequency suppression
303 ..Using plural separate signal paths
304 ...Phase shift in at least one path
305 ...With balancing or neutralizing
306 ....Filter in at least one path
307 ..With specific filter structure
308 ..With amplitude limiter
309 ...In demodulator or low frequency (audio amplifier circuit)
310 ..Internally generated noise or oscillations
311 ..In radio frequency amplifier, intermediate frequency amplifier or converter circuit
312 ..In demodulator or low frequency (e.g., audio frequency)
313 .Frequency modifying or conversion
314 ..Plural separate successive conversions
315 ...With plural separate local oscillators
316 ....With frequency stabilization for at least one local oscillator
317 ..Unwanted oscillation or radiation prevention
318 ..With specified local oscillator structure or coupling
319 ...With particular coupling

RECEIVER OR ANALOG MODULATED SIGNAL FREQUENCY CONVERTER
.Frequency modifying or conversion
..With specified local oscillator structure or coupling
...With particular coupling
320 ....Lumped impedance
321 ...In a single envelope or with common active element (e.g., autodyne)
322 ....Plural common electrode
323 ..Particular frequency conversion structure or circuitry
324 ...Homodyne (i.e., zero beat or synchrodyne reception)
325 ...Including distributed electrical parameter structure
326 ....With balanced mixer
327 .....Stripline
328 .....Hollow waveguide
329 ....Electron beam tube
330 ....With nonlinear impedance (e.g., diode)
331 ...Crystal or electron tube diode
332 ...Push-pull
333 ...Transistor or integrated circuit
334 .With particular receiver circuit
335 ..Plural diverse function tube or stage (performs plural functions alternately or concurrently)
336 ..Superregenerative detector or discriminator
337 ..Discriminator or demodulator
338 ..Coupling or decoupling between stages
339 ...Band pass filter
340 ...Variably tunable or adjustable
341 ..Amplifier
342 ...Reflex type
343 ..With particular power or bias supply (includes battery saving means and includes self-powered)
344 .Combined with diverse art device
345 ..With vehicle
346 ...Detachable for portability
347 .Cabinet, housing, or chassis structure
348 ..With retractable or readily detachable chassis
349 ..Sectional or interconnectable (e.g., modules)
350 ..With particular speaker mounting
351 ..Transportable
352 .Remote control of receiver
353 ..Plural conditions from remote station
354 ...Mechanical
355 ..Amplitude, volume, or gain control
600 LIGHT WAVE COMMUNICATION
601 .Repeater or relay systems
602 .With signal isolation
603 .Remote control
604 .Distant object identification
605 .Modulation at passive station (e.g., reflecting)
606 .Complete station (i.e., transmitter and receiver at same location)
607 ..Plural
608 .By pulse or digital variation
609 .Including laser
610 ..Including optical waveguide
611 ..Including specified modulation
612 .Including optical waveguide
613 .Including light emitting diode
614 .Photophone
615 .Angle modulaton
616 .Polarization modulation
617 .Transmitter and receiver at separate locations
618 .Transmitter
619 .Receiver
620 MISCELLANEOUS (E.G., PROTONS, MUONS, NEUTRINOS)

CLASS 460 CROP THRESHING OR SEPARATING

1 MEANS RESPONSIVE TO A SENSED CONDITION
2 .Foreign material
3 ..Drive interrupt
4 .Grain loss
5 ..By detector at sieve or screen or grain pan
6 .Machine load
7 .Moisture
8 HAVING MEANS TO DISTRIBUTE OR LEVEL CROP MATERIAL
9 .In association with shaking table
10 ..And baffle for grain
11 WITH RECYCLING OF PROCESSED MATERIAL
12 .With means to recycle processed material from sieve, grate, or screen
13 .Rethreshing
14 ..By separate diverse threshing means
15 CLOVER HULLER
16 WITH FEEDER
17 .Having grasping system for shelling or cutting
18 .Feeder for husker (e.g., feeder table)
19 .With band cutter
20 .And cooperating means for feeder
21 CONVERTIBLE
22 COMBINED WITH DIVERSE ART DEVICE (E.G., HOISTING, DIGGING)
23 WITH HOPPER
24 FLAX THRESHER
25 CORN PROCESSING APPARATUS
26 .With corn snapping or husking means
27 ..Compound roll having snapping and husking surface
28 ..Diverse functioning multiple roll pairs
29 ..Including a husking or snapping roll
30 ...Including roll mounting means
31 ...Including particular roll construction
32 ....With rib or bar
33 ....With teeth
34 ....With abrasive surface, e.g., rubber surface
35 ..With cooperating member
36 ..Including roll adjusting means
37 ..By suction means (e.g., husking by suction, per se)
38 ..With cutting
39 ...Shredding
40 ...Debutting
41 ...Slitting
42 ..With separating system (e.g., removing husked trash)
43 ...With trash container
44 ...With blower means
45 .With shelling
46 ..Concave and cylinder
47 ..Disk
48 ..Knife
49 ...Slitter
50 ...Tipper
51 ...Reciprocatable knife
52 ...Stationary knife
53 ...Rotary knife
54 ...Pivotable mount
55 ....Longitudinally of cob axis
56 ...Radially mounted
57 ...Having adjustment means
58 ..Peripheral action
59 THRESHING
60 .With relief valve in rotor section
61 .Flail machine
62 .With adjusting means for threshing cylinder
63 .With prethreshing cylinder
64 .Vertical axle type
65 .Centrifugal
66 .Axial flow through threshing section
67 ..Flared cylinder
68 ..Rotor formed with integral feed section
69 ..With axial flow separator
70 .With feed means for threshing section
71 .With bar (e.g., rasp bar, inclined blade)
72 ..Adjustable
73 .With beater
74 .With accelerator roll
75 .Transverse threshing section
76 ..Multiple threshing cylinders
77 ..With axial flow to opposed ends
78 .With cutting
79 SEPARATOR
80 .Axial
81 .Separating cylinder
82 ..Foraminous periphery without associated concave
83 ..Multiple cylinders
84 .Including deflector means
85 .Straw walker
86 .Endless apron
87 .Overhung rake
88 ..Rotary rake
89 ...Mounted on crank shaft
90 .Shaking table
91 ..Oscillating
92 ...And reciprocating
93 ..Reciprocating
94 ..Mounting of
95 ...Suspended
96 .With material vibrator
97 CLEANER
98 .Rotary cleaner
99 .Air control affecting air flow
100 .With fan feature
101 .Sieve or grate
102 ..Screen
103 WITH MEANS TO CLEAN MACHINE
104 .Concave cleaner
105 WITH STONE TRAP
106 .Pivoting trap
107 CONCAVE
108 .Grid or grate
109 ..Adjustable
110 ..Teeth, bars, blades, etc.
111 STRAW CHAFF SPREADER OR HANDLING (DISCHARGE)
112 .With chopper
113 BEATER
114 TRANSPORT CONVEYOR
115 .Pneumatic
116 DRIVE RELATED FEATURES
117 DUST HANDLING
118 DRIER
119 MACHINE COMPONENT ARRANGEMENT AND STRUCTURE, E.G., ENGINE PLACEMENT, GRAIN BIN
120 RACK, GRATE BAR EXTENSION
121 TOOTH STRUCTURE
122 .Mounting means
123 FRUIT OR VEGETABLE PROCESSING APPARATUS
124 .Pre-stripper
125 .Declustering
126 .Including picking or plucking (peanuts, hops or similar material)
127 ..Spike tooth
128 ..Spring biased
129 ..Combing
130 .Pressure roller (e.g., snapping-cucumber)
131 .Shelling pressure roller (e.g., peas, beans, per se)
132 .With adjusting means for roller or cylinder
133 .Including agitator
134 .Stripper or stemmer

FRUIT OR VEGETABLE PROCESSING APPARATUS
.Stripper or stemmer
135 ..With rotary cutter
136 ..With cutter encompassing stalk
137 ..With stationary cutter
138 ..With oscillating cutter
139 ..With vibrating cutter
140 ..With roller
141 .With cylinder and concave (for nongrain products)
142 .Drum and beater
143 .Blower assisted
144 .Endless separating conveyer
145 .Shaker or shaking table (for nongrain products)
146 ..Reciprocating
147 ..Oscillating
148 ..Vibratory
149 PROCESS
150 MISCELLANEOUS
****
CROSS-REFERENCE ART COLLECTIONS
****
901 MATERIAL DISTRIBUTOR
902 GRAIN CLEANER
903 GRAIN SAVER
904 POTATO DIGGER
905 STRAW OR CHAFF STACKER

CLASS 464 ROTARY SHAFTS, GUDGEONS, HOUSINGS AND FLEXIBLE COUPLINGS FOR ROTARY SHAFTS

1 SPEED RESPONSIVE DEVICE FOR ADJUSTING RELATIVE ROTATIONAL POSITION OF COUPLED MEMBERS

2 .Actuated by fluid or electricity

3 .Pivoted weight

4 ..Gear segment on pivoted weight

5 ..Pivotal movement opposed by compression of coil spring along its axis

6 ..Pivotal movement opposed by expansion of coil spring along its axis

7 HAVING LUBRICATING MEANS

8 .Lubricant impregnated into material

9 ..Metallic material

10 .For overload release coupling

11 .For coupling having torque transmitted via radially directed pin received in conforming aperture

12 ..Lubricant supplied to plural pins via common ring which encapsulates pins

13 ...Pin includes longitudinally extending internal passage

14 ..Pin includes longitudinally extending internal passage

15 .For coupling having torque transmitted via a ball

16 .For coupling having torque transmitted via intermeshing teeth

17 HAVING HEATING OR COOLING MEANS

18 FLEXIBLE COUPLING BETWEEN FLUID-CONDUCTING ROTARY SHAFTS (E.G., COUPLING BETWEEN SECTIONS OF DRILL STRING, ETC.)

19 .Relative angular displacement of axes of shafts

20 .Including member deformable by relative movement between shafts

21 ..Member is coiled spring

22 HAVING CLEANING MEANS

23 WITH AUXILLIARY INDICATOR OR ALARM

24 FLUID COUPLING

25 .For transmitting limited pulsating torque (e.g., fluid drive coupling for impulse tool)

26 .Including piston axially movable in cylinder having axis coextensive with axis of rotation of coupled members

27 .Including multiple piston-cylinder devices radially spaced from axis of rotation

28 .Fluid confined in enclosure having flexible walls

29 ELECTRICAL OR MAGNETIC COUPLING

30 OVERLOAD RELEASE COUPLING

31 .Including thermally responsive element

32 .Torque transmitted via frangible element

33 ..Axially extending pin

34 .Torque transmitted via radially spaced deformable roller

35 .Torque transmitted via a ball

36 ..Axially biased

37 .Torque transmitted via resiliently biased positive drive connection (e.g., cam and follower)

38 ..Axially biased

39 ...By spring coiled about axis of rotation

40 .Torque transmitted via frictional engagement of coil spring

41 .Torque transmitted via plural circumferentially spaced friction elements

42 .Torque transmitted via frictional engagement of conical or frustoconical surfaces

43 ..With separate resilient member for biasing surfaces into engagement

44 ...Coil spring

45 .Torque transmitted via frictional engagement of planar radially extending surfaces

46 ..With separate resilient member for biasing surfaces into engagement

47 ...Coil spring

48 ....Plural, circumferentially spaced coil springs

49 COUPLING DEVICE INCLUDES ENDLESS CHAIN ENGAGED WITH CIRCUMFERENTIAL TEETH ON COUPLED MEMBERS

50 COUPLING DEVICE INCLUDES ANGLED OR HINGED ROD HAVING OPPOSITE ENDS RELATIVELY RECIPROCABLE AXIALLY IN BORES IN SPACED COUPLED MEMBERS

51 TORQUE TRANSMITTED VIA FLEXIBLE ELEMENT

52 .With stationary housing

53 ..And threaded annulus surrounding terminal end of housing for attachment to auxiliary housing

54 .Element coiled sinusoidally about axially spaced driving and driven members

55 .Element is flaccid and operates in tension during torque transmission (e.g., belt, cable, etc.)

56 ..Element has circular cross section

57 .Element has plural convolutions wound about rotational axis

58 ..Plural radially overlapping convoluted elements

59 ..Single element has plural radially overlapping convolutions

60 ..Convoluted element has noncircular cross section

61 .Element is a spring coiled about centerline angularly related to or radially spaced from rotational axis

62 ..Plural springs

63 ...Centerline of springs axially spaced from each other along rotational axis

64 ...Plural superposed springs on common centerline

65 ...Centerline of springs radially spaced from and parallel to rotational axis

66 ...Opposite ends of spring are equidistant from rotational axis

67 ....Springs on circumferentially extending curved centerline

68 ....Springs positioned between axially spaced plates of one member and driven by other member extending radially between said plates

69 .Plural flexible links connected to circumferentially spaced axially directed pins on drive and driven members

70 .Element is annular liner within radially spaced pin-receiving opening

71 ..Axially directed pin

72 ...Plural axially spaced liners

73 .Element positioned between intermeshing teeth on driving and driven members

74 ..Teeth on radially overlapping surfaces

75 ...Element is a continuous annulus extending around rotational axis

76 ..Plurality of disparate elements

77 .Element is an open loop spring curved about rotational axis

78 .Element is tube with slot through wall to provide flexibility

TORQUE TRANSMITTED VIA FLEXIBLE ELEMENT
79 .Element includes diverging wall portions defining annular groove completely surrounding rotational axis (e.g., bellows)
80 ..Nonmetallic
81 .Plural circumferentially spaced elements
82 ..Extending between radially overlapping surfaces on driving and driven members
83 ...Nonmetallic
84 ..Elements are bowed leaf springs
85 ..Nonmetallic
86 ..Axially extending torsion bars
87 .Nonmetallic element
88 ..Element is hollow sleeve surrounding rotational axis and connected at opposite ends to axially spaced torque transmitting surfaces on driving and driven members
89 ..Extending between radially overlapping surfaces on driving and driven members
90 ...Plural elements radially overlapping
91 ...Plural elements axially spaced along rotational axis
92 ..Annular element between and coincident with drive and driven members
93 ...Including means to receive radially spaced axially extending projection on drive and driven members
94 ....Laminated element or plural elements abutting or spaced along rotational axis
95 .....With disparate spacer between plural separable elements
96 ...Laminated element or plural elements abutting or spaced along axis of rotation
97 .Element is a torsion bar having a longitudinal axis coincident with the rotational axis
98 .Element is plate with external edge completely surrounding rotational axis (e.g., disc)
99 ..Plural axially spaced plates
100 .Element is leaf spring
101 ..Bowed
102 SEPARATE COUPLING DEVICE MOVABLE RADIALLY OF AXES OF TORQUE TRANSMITTING MEMBERS TO ACCOMMODATE PARALLEL, MISALIGNED AXES (E.G., OLDHAM COUPLING)
103 .Coupling device includes rolling body for transmitting torque
104 .Coupling device has aperture or groove for receiving complemenatry driving projection on torque transmitting members
105 ..Projection-receiving slot extends completely through thickness dimension of coupler
106 COUPLING ACCOMMODATES DRIVE BETWEEN MEMBERS HAVING MISALIGNED OR ANGULARLY RELATED AXES
107 .Coupling between wheel and vertically oriented shaft (e.g., millstone)
108 ..Wheel mounted on rolling body
109 .Coupling includes relatively movable gear segments
110 .Coupling transmits torque via semicylindrical segments separated by pivot pin (e.g., slipper bearing)
111 .Tripod coupling
112 .Coupling transmits torque via radially directed pin
113 ..With additional axiallly spaced torque-transmitting coupling which facilitates relative movement between members
114 ...Radially directed pin in each coupling
115 ....Pin slidable axially in slot
116 .....Axially spaced pin-carrying parts interconnected by pivotal head and socket centering joint
117 ....Plural pins in each coupling with pin ends spaced 90 degrees apart
118 .....Axially spaced pin-carrying parts interconnected by pivotal head and socket centering joint
119 ....Pins in sequential couplings oriented at right angles to each other
120 ..Pin slidable axially in slot
121 ...Pin carried by intermediate element and slidable axially in slots in both coupled members
122 ...Pin carries disparate sleeve engaged with slot walls
123 ....Sleeve rotatable about pin axis
124 .....Sleeve has spherical or semi-spherical bearing surface
125 ..Plural pins received in conforming apertures in ring
126 ...Split ring
127 ..With particular balancing means
128 ..With particular bearing cup surrounding pin end
129 ...Spherical or semi-spherical cup
130 ...And disparate device for securing cup to pin or receiver
131 ...And flexible seal
132 ..With particular bearing or bushing mounted on pin
133 ..With particular flexible seal
134 ..With particular yoke providing pin-receiving aperture
135 ...Split yoke
136 ..Plural pins carried by intermediate member with pin ends spaced 90 degrees apart
137 .Coupling transmits torque via axially directed pin radially spaced from rotational axis
138 ..Particular pivotal mounting for pin
139 .Coupling transmits torque via radially spaced ball
140 ..With additional axially spaced torque-transmitting coupling which facilitates relative movement between members
141 ..Ball mounted in groove for relative axial movement with respect to coupled member
142 ...Mounted for relative axial movement with respect to both coupled members
143 ....Grooves formed in radially overlapping elements
144 .....Intersecting grooves
145 .....With intermediate positioning cage for ball
146 ......Bottom wall of groove in outer member is parallel to axial centerline of outer member (e.g., internally grooved cylinder)
147 .Torque transmitted via intermediate element

COUPLING ACCOMMODATES DRIVE BETWEEN MEMBERS HAVING MISALIGNED OR ANGULARLY RELATED AXES
.Torque transmitted via intermediate element
148 ..Element carries or receives hook on opposite ends for connection to drive and driven members (e.g., link chain)
149 ..Axially intermeshing teeth
150 ..Intermediate element located between overlapping surfaces on drive and driven members
151 ...Intermediate element is externally grooved or ribbed sphere
152 ...Plural circumferentially spaced intermediate elements
153 ..Intermediate element includes internal openings at opposite ends for receiving axially spaced ends on drive and driven members
154 ...Intermeshing teeth on element and members
155 ..Intermediate element includes external surface at opposite ends received in complementary openings in axially spaced ends of driving and driven members
156 ...Intermeshing teeth on element and members
157 .Torque transmitted via intermeshing teeth on drive and driven members
158 ..Teeth on radially overlapping surfaces
159 ...Spherical or semispherical surfaces
160 COUPLING FACILITATES RELATIVE ROTARY DISPLACEMENT BETWEEN COUPLED MEMBERS
161 .Members coupled via axially movable, resiliently biased intermediate element
162 COUPLING FACILITATES RELATIVE AXIAL MOTION BETWEEN COUPLED MEMBERS
163 .Coupling between rotary drive table and axially movable drill string
164 ..Coupler includes endless belt or chain run engageable with drill string and moveable in direction of axial advance
165 ..Coupler includes antifriction rolling body engageable with drill string
166 ...With screw device for adjusting radial position of rolling body
167 .Coupler includes antifriction rolling body engageable with axially moveable member
168 ..Recirculating rolling bodies
169 .Including spring to bias member in axial direction
170 HOUSING
171 .Rigid semispherical surface on one housing part slidably engaged with surface on mating housing part
172 .Telescoping cylindrical housing members
173 .Flexible housing
174 ..Helically coiled member
175 ..Corrugated structure
176 .Pivotally mounted housing supported for movement between open and closed positions
177 .Separably connected housings for separably connected shafts
178 .With rolling body supporting shaft in housing
179 SHAFTING
180 .Particular vibration dampening or balancing structure
181 .Nonmetalic shaft or component
182 .With disparate device for coupling shaft to additional shaft or rotary body
183 .Hollow or layered shaft
184 GUDGEONS
185 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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900 ELECTRICALLY INSULATIVE MEMBER
901 RAPID ATTACHMENT OR RELEASE
902 PARTICULAR MATERIAL
903 .Nonmetal
904 HOMOKINETIC COUPLING
905 .Torque transmitted via radially extending pin
906 .Torque transmitted via radially spaced balls

CLASS 474 ENDLESS BELT POWER TRANSMISSION SYSTEMS AND COMPONENTS

DECEMBER 1990

1 CONTROL FOR FORWARD AND REVERSE
2 .Cyclical or sequential (e.g., machine controlled, etc.)
3 ..Including device for shifting belt laterally of its direction of run
4 .Including separate belts for forward and reverse
5 ..Belt selection by shifting or tightening belt
6 ...Including device for shifting belt laterally of its direction of run
7 .Including coaxial pulleys rotated in opposite directions by single endless belt simultaneously engaging both pulleys
8 PULLEY WITH BELT-RECEIVING GROOVE FORMED BY DRIVE FACES ON RELATIVELY AXIALLY MOVABLE COAXIAL CONFRONTING MEMBERS (E.G., EXPANSIBLE CONE PULLEY, ETC.)
9 .Members are gripping jaws actuated during each rotation of pulley
10 ..Via relatively rotating cam and follower
11 .Speed responsive
12 ..And load responsive
13 ..To centrifugal force
14 ...Via pivoted weight
15 ...Via ball
16 ...Via liquid
17 .Load responsive
18 ..With actuator driven by electrical or fluid motor
19 ..Via relatively rotating cam and follower
20 ...Including interengaged threads
21 ...Including plural separate cam and follower pairs for adjusting plural members
22 .Temperature responsive
23 .Adjusted by power from pulley drive train
24 .And member has plural, relatively axially movable drive faces
25 .And pulley shiftable laterally of its axis of rotation
26 ..Mounted on laterally shiftable motor
27 ..Mounted on laterally shiftable countershaft
28 .Fluid pressure actuator for adjustment of member
29 .Including actuator interconnecting plural pulleys on spaced shafts for simultaneous adjustment
30 ..For axial adjustment of each member on each pulley
31 ...By dual lever mechanism
32 .Plural members forming plural belt-receiving grooves on common axis
33 ..With member common to plural grooves
34 ...Plural members common to plural grooves
35 ..Axially spaced members simultaneously adjustable
36 ...On bolt radially spaced from pulley axis
37 .By manual actuator for one or both confronting members
38 ..With neutral condition of drive
39 ..Screw actuated
40 ...With additional linkage in actuator drive train
41 ...By opposite-handed screw threads engaging adjacent members
42 ...With means to positively lock members in adjusted position
43 .Including lubrication or particular guide or bearing for movable member
44 ..Self-lubricated bearing
45 ..With lubrication of support for movable member
46 .With spring device
47 PULLEY WITH EXPANSIBLE RIM MEANS OR PULLEYS WITH ALTERNATELY USEABLE NESTABLE RIMS
48 .Nestable rims of diverse kind (e.g., one grooved and the other cylindrical, etc.)
49 .Structure for variably adjusting radius of rim section
50 ..By actuator responsive to speed or load
51 ..By fluid pressure actuator or inflatable rim
52 ..Including means interconnecting plural pulleys for simultaneous adjustment
53 ...Pulleys on spaced axes
54 ..By actuator having collar concentric with, and movable axially on, pulley axis
55 ...Collar interconnected with rim sections via pivoted link
56 ..By actuator having collar concentric with, and rotatable in plane perpendicular to pulley axis
57 ...Collar interconnected with rim sections via pivoted link
58 POWER OUTPUT PULLEY SELECTIVELY SHIFTABLE TO DIFFERENT POWER OUTPUT LOCATIONS RELATIVE TO INPUT PULLEY
59 .Pivotable about plural axes
60 ..Nonparallel axes
61 POWER INPUT AND OUTPUT PULLEYS ON NONPARALLEL AXES
62 .With common belt engaging both pulleys
63 ..And shiftable guide roll engaging belt run
64 PLURAL TURNS OF SAME BELT ABOUT PULLEY AXIS
65 .With flexible belt-tracking guide helically coiled about pulley
66 .Plural turns of same belt about axis of each of laterally spaced pulleys
67 ..With guide roll
68 ...Plural guide rolls
69 CONTROL FOR VARIABLE INPUT TO OUTPUT SPEED-RATIO
70 .Condition responsive (e.g., responsive to speed, load, etc.)
71 .Cyclical or sequential (e.g., machine controlled, etc.)
72 .Including intermeshing gears in one drive train
73 .Including separate belt on each of coaxial pulleys selectively engaged in drive train
74 ..With overrunning clutch
75 ..Selection by tightening belt on selected pulley
76 ..Selection by axially movable pin engaged in opening through selected pulley
77 .Including coaxial pulleys shiftable axially to align selected pulley with drive belt
78 .Including belt shiftable axially from one to another surface of stepped pulley or coaxial pulleys of different diameter
79 ..And pulley pivotally mounted to facilitate belt shift
80 ..And including belt-shifter mechanism
81 ...For shifting belt from both power input and power output pulleys
82 ...Shifter mechanism including parallelogram linkage

CONTROL FOR VARIABLE INPUT TO OUTPUT SPEED-RATIO
83 .Including mechanism for shifting belt axially on spaced pulleys with tapering drive face
84 PLURAL BELTS OR PLURAL OUTPUT LOADS
85 .Plural belts having interengaged drive surfaces
86 .Plural output loads
87 ..With common belt concurrently engaging input and plural output pulleys
88 .Plural belts in series via countershaft
89 ..Countershaft laterally shiftable
90 STATIC ELECTRICITY ELIMINATOR
91 STRUCTURE FACILITATING LUBRICATION OF BELT, PULLEY, OR GUIDE ROLL
92 CLEANING DEVICE FOR BELT, PULLEY, OR GUIDE ROLL
93 FLUID-IMPELLING MEANS (E.G., FOR COOLING, ETC.)
94 RESILIENT CONNECTION BETWEEN PULLEY OR GUIDE-ROLL RIM AND MOUNT
95 HUB FORMED IN SECTIONS AND SEPARABLE BY MOVING SECTIONS RADIALLY APART (E.G., SPLIT PULLEY TO FACILITATE INSTALLATION, ETC.)
96 .And severance lines for separable rim sections diametrically opposite each other
97 ..With spokes connecting hub section and rim section
98 ...Plural integral spokes
99 ....With discrete means connecting outer ends of integral spokes to rim
100 AUXILIARY ENDLESS BAND FOR GUIDING BELT OR HOLDING BELT ENGAGED WITH PULLEY
101 MEANS FOR ADJUSTING BELT TENSION OR FOR SHIFTING BELT, PULLEY OR GUIDE ROLL
102 .With sensor for controlling operation of shifter to correct belt training deviation
103 ..Shifter driven by electrical or fluid motor
104 ...Fluid motor
105 ..Sensor actuates pawl-and-rachet mechanism to operate shifter
106 ..Sensor includes rotatable belt-engaging surface
107 ...Rotatable on same axis as shiftable guide roll or pulley
108 ....To initiate relative axial movement of belt-engaging surfaces of guide roll or pulley
109 .Load responsive tension adjuster or shifter
110 .Tension adjuster or shifter driven by electrical or fluid motor
111 .Tension adjuster has surface in sliding contact with belt
112 .Pulley or guide roll has eccentric mount for shifting or tensioning movement
113 .Pulley shifter
114 ..Pulley on shaft of adjustably mounted drive motor
115 ...Spring biased in belt-tensioning direction
116 ..Pulley is vehicle drive pulley (e.g., bicycle sprocket, etc.)
117 ..Spring biased in belt-tensioning direction
118 ..Pulley shiftable into engagement with exterior of belt surface
119 .Belt shifter for shifting belt laterally or for selective engagement and supported disengagement of belt with pulley
120 ..Pulley has slot in groove-forming flange facilitating belt installation or removal
121 ..For shifting exterior surface of belt into engagement with pulley
122 ..For shifting belt laterally
123 ...By adjusting axial inclination of belt guide roll
124 ...With idler support having circumferentially spaced rollers to receive shifted belt
125 ...Including means for selectively clutching coaxial idler support to pulley
126 ...Shifter actuated by screw or gear drive
127 ...Shifter actuated by flexible cable
128 ...Shifter actuated by handle pivoted about fixed axis
129 ....And connector link between handle and shifter pivotable about spaced fixed axis
130 ..Portable hand tool for removing or installing belt
131 .Guide roll forms belt-thickness gap with pulley
132 .Gravity actuated guide roll for tensioning belt
133 .Guide roll mounted for movement of its axis along arcuate path to tension belt
134 ..Plural guide rolls engaging single belt
135 ..Guide roll spring biased in belt-tensioning direction
136 .Guide roll mounted for movement of its axis along rectilineal path to tension belt
137 ..Plural guide rolls engaging single belt
138 ..Guide roll spring biased in belt-tensioning direction
139 PULLEY ENGAGES EXTERIOR SURFACE OF BELT
140 BELT GUIDE HAS SURFACE IN SLIDING CONTACT WITH BELT
141 PULLEY HAVING CIRCUMFERENTIALLY SPACED PORTIONS OF DRIVE FACE SPACED UNEQUAL DISTANCES FROM PULLEY AXIS OF ROTATION (E.G., ELLIPTICAL PULLEY, ETC.)
142 MAGNETIC ATTRACTION BETWEEN BELT AND PULLEY
143 FABRIC DRIVE FACE ON BELT AND PULLEY
144 GUARD OR HOUSING FOR BELT OR PULLEY
145 .Connected to belt
146 .Extending along entire length of belt run
147 ..Individual tubular housings for opposite belt run
148 SYSTEM INCLUDING SPACED PULLEYS INTERCONNECTED BY A BELT
149 .Positive drive pulley and friction drive pulley connected by same belt
150 .With frame or mount for system
151 AUXILIARY MEMBER REMOVABLY ATTACHED TO PULLEY OR GUIDE ROLL FOR PREVENTING LATERAL DISPLACEMENT OF BELT
152 POSITIVE DRIVE PULLEY OR GUIDE ROLL
153 .With particular belt
154 ..Belt has spherical or hemispherical drive faces
155 ..Belt formed of rigid links
156 ...With sequential links pivoted about discrete pivot pin
157 ....And each link has integral surfaces forming inwardly opening groove

POSITIVE DRIVE PULLEY OR GUIDE ROLL

158 .And additional coaxial surface for engaging same belt in shifted condition or for engaging auxiliary belt, brake, or clutch member

159 ..Coaxial surface is belt-engaging surface on friction drive pulley

160 ..Coaxial surface is belt-engaging surface on positive drive pulley of different circumference

161 .Having nonmetallic component

162 .Having belt-engaging surfaces on discrete circumferentially spaced, relatively movable or replaceable members

163 ..Movable with respect to each other during operation

164 .Having axially spaced sets of belt-engaging surfaces

165 .With stationary support for pulley or guide roll

166 FRICTION DRIVE PULLEY OR GUIDE ROLL

167 .With particular belt

168 .Including plural, coaxial, circumferential belt-receiving grooves

169 ..Plural grooves of different circumferences

170 ..Plural grooves formed in unitary member

171 .And additional coaxial surface for engaging same belt in shifted condition or for engaging auxiliary belt, brake, or clutch member

172 .Guide roll on axis perpendicular to top surface of belt for engaging side of belt

173 ..And additional guide roll for engaging top or bottom surface of belt

174 .Pulley or guide roll including circumferential belt-receiving groove

175 ..Groove formed by rugate or circumferentially spaced drive surfaces

176 ..Groove formed by multiple, abutting, circumferentially connected members

177 ..And circumferentially continuous belt-engaging layer or insert of diverse material added on or between groove-forming flanges

178 ...Layer or insert of resilient material

179 ..Including connected discrete axially spaced groove-forming flanges

180 ...Connected via nesting cylindrical or conical surfaces integral with the flanges

181 ...And abutting radial surfaces integral with the flanges

182 ....Including connector extending through opening in abutting surfaces

183 .....Connector comprises tang integral with one of the surfaces

184 .Pulley or guide roll having plural, discrete belt-engaging faces for engaging flat belt

185 ..Circumferentially spaced faces

186 ...And axially spaced faces

187 ..Each face has continuous circumferential periphery

188 .Including grooves or openings in cylindrical belt-engaging surface (e.g., for escape of air, etc.)

189 ..Circumferentially extending grooves

190 .Including nonmetallic belt-engaging surface portion

191 ..Rubber

192 ...With embedded metal layer

193 ..Leather

194 ..Wood or paper

195 .With spokes connecting rim to hub

196 ..Plural spoke sets axially spaced

197 .Cylindrical rim interconnected to axially spaced support members

198 .With stationary support for pulley or guide roll

199 ..And ball or roller bearing for mounting pulley or guide roll on support

200 MOBIUS BELT

201 BELT HAVING DRIVE SURFACES ON OPPOSITE SIDE EDGES OF STACKED PLATES HAVING PLANAR FACES PERPENDICULAR TO DIRECTION OF BELT MOVEMENT

202 POSITIVE DRIVE BELT

203 .Drive surfaces on belt formed by spherical or hemispherical elements

204 .Drive surfaces on belt formed in or interconnected by continuous flexible member

205 ..Drive surfaces on longitudinally spaced teeth formed integral with flexible member

206 .Belt formed of rigid links

207 ..Including nonmetallic part

208 ..Including wire member coiled about pivotal axis between links

209 ..Including ball or roller bearing circumferentially spaced about pivotal axis between links

210 ..Links pivotable about diverse axes during operation (e.g., "universal" connection facilitating alignment with sprockets in diverse planes)

211 ...Ball-and-socket connection

212 ..Link including integral surfaces forming inwardly opening groove (e.g., silent chain, etc.)

213 ...Plural links having laterally aligned groove-forming surfaces

214 ....Connector or bearing member extending through or positioned in laterally aligned openings in adjacent links is noncircular in transverse cross section

215 .....Multiple connector or bearing members extend through or positioned in common opening

216 ......Concave surface of one connector or bearing member abuts convex surface of another connector or bearing members

217 ....Plural connector or bearing members with concave surface abut convex surface or surfaces on another connector or bearing member

218 ..Including diverse member for interconnecting opposite ends to complete loop (e.g., repair link for broken chain, etc.)

219 ..Including separate locking member for retaining link-connector in laterally aligned openings through adjacent links

220 ...Common locking member retains longitudinally spaced connectors

221 ....Strandlike locking member (e.g., wire, etc.)

222 ...Threaded connection between connector and locking member

223 ...Locking member received in annular groove extending entirely around circumference of connector

POSITIVE DRIVE BELT
.Belt formed of rigid links
..Including separate locking member for retaining link-connector in laterally aligned openings through adjacent links
224 ...Locking member includes portion disposed within opening which receives connector
225 ....Locking member extends through all aligned openings
226 ..Link including discrete members forming laterally spaced sides of opening for pulley tooth
227 ...With particular structure facilitating disassembly of adjacent links
228 ...With discrete connector extending through laterally aligned apertures in adjacent links
229 ....Connector has bearing surface which is noncircular in transverse cross section
230 ....Connector connects sequential links each having discrete members forming laterally spaced sides
231 .....With sleeve rotatable with respect to each link for engaging pulley tooth
232 ..Link including common member forming laterally spaced sides of opening for pulley tooth
233 ...With discrete member interconnecting sequential pulley-tooth-receiving links
234 ....Connector member inserted through lateral opening in pulley-tooth-receiving links
235 ...Common member surrounds opening for pulley tooth on all sides
236 ....Member formed from sheet metal
237 FRICTION DRIVE BELT
238 .Including plural interconnected and transversely spaced pairs of oppositely facing side-drive surfaces (e.g., plural "V-belts", etc.)
239 .Having drive surface on helically coiled wire or cord
240 .Including plural interconnected members each having a drive surface facing in a common direction
241 ..Forming imbricate structure
242 ..Belt has oppositely facing side drive surfaces (e.g., "V-belt", etc.)
243 ...Surfaces on ball or roller elements
244 ...Oppositely facing surfaces are on pair of discrete elements
245 ....And sequential pairs are interconnected longitudinally by distinct pivot elements
246 ..Plural, inwardly facing drive surfaces along the direction transverse to longitudinal extent of belt
247 ...And plural, inwardly facing drive surfaces along the direction parallel to longitudinal extent of belt
248 .Including link-chain coextensive with continuous surface belt
249 .Including groove, openings or pockets formed in belt surface and arranged along entire length of belt (e.g., for flexibility, air escape, etc.)
250 ..Grooves transversely extending on belt surface
251 ...And additional groove on opposite surface
252 ..Groove continuous and longitudinally extending
253 .Including particular means connecting opposite ends to form loop
254 ..Connected by adhering surface on one end to surface on other end (e.g., by adhesive, heat, seal, etc.)
255 ..Including discrete connector
256 ...Connector comprises element inserted into longitudinal openings in belt ends
257 ...Connector comprises plate clamped externally of belt ends
258 ...Connector comprises cord sewn through belt ends
259 .Drive surface on single sheet or web wound in plural, completely overlying convolutions
260 .Including embedded elongated strand having multiple components or layers of diverse materials
261 .Including plural superposed layers each having strands particularly oriented relative to belt dimension
262 ..Strands in the layers are oblique to longitudinal run of belt (e.g., plural layers of bias fabric, etc.)
263 .Including discrete embedded fibers
264 .Including plural layers of different elastomeric materials
265 .Having trapezoidal cross section (e.g., "V-belt", etc.)
266 .Including fabric web (e.g., knit, woven, etc.)
267 ..Fabric having particular knit or weave
268 ..And additional coating, layer, or reinforcement of diverse kind of material
269 ...Additional material is leather
270 ...Additional material is metal
271 ...Additional material is rubber
272 .Including metallic drive face
273 MISCELLANEOUS

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CROSS-REFERENCE ART COLLECTIONS

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900 PHASE VARIATOR
901 PULLEY OR GUIDE ROLL FOR TRACK OF ENDLESS TRACK VEHICLE
902 PARTICULAR CONNECTION BETWEEN RIM AND HUB
903 PARTICULAR CONNECTION BETWEEN HUB AND SHAFT

CLASS 475 PLANETARY GEAR TRANSMISSION SYSTEMS AND COMPONENTS

DECEMBER 1990

1 INPUT FROM INDEPENDENT POWER SOURCES
2 .Condition responsive motor control
3 .Including manual input
4 ..And electric motor input
5 .Including electric motor input
6 .Plural outputs
7 .Worm gear in drive train
8 .One-way clutch or brake in drive train
9 .Bevel planet pinion in drive train
10 .Intermeshing planet pinions in drive train
11 ROTARY PLANETATING OUTPUT
12 REVERSAL OF DIRECTION OF POWER FLOW CHANGES POWER TRANSMISSION TO ALTERNATE PATH
13 .Input and output exchange functions
14 CYCLICAL OR INTERMITTENT DRIVE
15 .Plural outputs
16 .With means to adjust cycle or drive during operation
17 .Multilated or noncircular gear in drive train
18 STEERING BY DRIVING
19 .With condition responsive steer control
20 .With cooling or lubrication
21 .With infinitely variable drive
22 ..Variable drive is fluid drive
23 ...Hydrostatic type
24 ....Plural pump-motor sets
25 ..Belt type
26 ..Variable drive is friction drive
27 .Fluid steer control
28 .With plural power paths to a planetary transmission at each output
29 .With planetary reaction brake steering
30 ..And carrier input to planetary gearing
31 FLUID DRIVE OR CONTROL OF PLANETARY GEARING
32 .Diverse fluid drives
33 .Plural impeller-turbine type fluid circuits
34 ..Fill and empty type
35 .Single impeller-turbine type fluid circuit divides or combines plural power paths
36 ..Planetary gearing divides paths
37 ..Three fluid outputs
38 ...And stator
39 ..Two fluid outputs and stator
40 ...With variable fluid drive control
41 ...And mechanical drive path
42 ..Control of or by fluid drive
43 ..With speed or torque responsive clutch or brake control
44 ..Stator rotatable in reverse direction to provide drive
45 ...Turbine braked, stator provides reverse drive
46 ....And adds torque in forward drive
47 .Impeller-turbine type fluid circuit and mechanical path in parallel
48 ..With control of or by the fluid circuit
49 ...Gearing controlled by fluid circuit condition
50 ...Fill and empty type fluid circuit
51 ..With speed responsive control
52 ..And nonplanetary gearing
53 ..Planetary gearing divides paths
54 ..Sun, orbit and carrier braked
55 ..Sun and orbit braked
56 ..Sun and carrier braked
57 ..Orbit and carrier braked
58 ..Orbits braked
59 .Impeller-turbine type fluid circuit in series with planetary gearing
60 ..And condition responsive control
61 ...Control of or by fluid circuit
62 ....Control responsive to relative impeller and turbine speeds
63 .....System or servo fluid pressure controlled
64 ....Fluid circuit controlled
65 .....By lock-up clutch actuation
66 ..And nonplanetary gearing
67 ..With synchronizing of positive clutch or brake
68 ..With nonratio brake
69 ..Fluid circuit controlled
70 ...Pressure controlled
71 ..And differential in series
72 .Fluid pump and motor in one of plural paths to or from planetary gearing
73 ..Plural fluid power paths to planetary gearing
74 ..Plural outputs
75 ..Three pumps or motors
76 ..Speed responsive control
77 ...Constant speed output
78 ..Interrelated fluid unit and gear control
79 ...With constant speed ratio between input and one fluid unit
80 ..Plural speed ranges
81 ...With constant speed ratio between input and one fluid unit
82 ....Having single planet carrier
83 .Pump and motor in series with planetary gearing
84 .Control of differential planetary gearing
85 ..Special fluid
86 ..By fluid operated mechanical clutch
87 ...Operated by viscous drag
88 ...Operated by a pump responsive to differential action
89 ..Fluid resistance controls relative rotation of outputs
90 ...Fluid pumped by differential gears
91 .Fluid resistance inhibits relative rotation
92 ..Fluid damper for reaction element
93 ..Valve inhibits fluid flow
94 ...Speed or torque responsive valve control
95 ....Centrifugally actuated valve controls fluid clutch
96 .....Clutch connects planet pinion and carrier
97 .....With fluid brake control
98 ....Centrifugally actuated valve controls fluid brake
99 ...Interrelated valve control and mechanical clutch or brake
100 ....Valve control and mechanical clutch
101 .....Pump pressure engages mechanical clutch
102 ...Fluid brake(s) for plural planetary elements
103 ...Plural fluid clutches
104 ...Fluid brake for planetary element
105 ....And fluid clutch
106 ....Bevel gearing
107 ....Sun or orbit braked
108 ...Fluid clutch includes gear type pump
109 ...Planet clutched to carrier
110 ....With reversing means
111 ..Planet clutched to fluid flywheel
112 ..Fluid container connected to planet pinion
113 ..Impeller-turbine type fluid unit used as brake
114 .Fluid control of friction planetary gearing
115 ..Stepless ratio change controlled

FLUID DRIVE OR CONTROL OF PLANETARY GEARING
116 .Fluid controlled mechanical clutch or brake
117 ..Temperature responsive control
118 ..Speed responsive control
119 ...Safety device
120 ...Pressure control
121 ...Ratio change
122 ....Speed responsive valve control
123 .....Electrical control
124 .....Centrifugal control
125 ..Torque responsive control
126 ...Responsive to torque reversal
127 ..Pressure regulation
128 ...Valving controls shift timing
129 ....With fluid accumulator
130 ...Manual regulator
131 ..Manually actuated ratio selector
132 ...Electrical
133 ...With safety valve
134 ...Plural selector valves
135 ...Rotary valve
136 ..With ancillary pump or governor drive
137 ...Plural pumps
138 ..With positive clutch or brake
139 ...And friction synchronizer
140 ..Spring engaged, fluid released clutch or brake device
141 ...Plural devices simultaneously spring engaged
142 ...Single fluid motor engages one device and releases other
143 ..Expanding fluid motor chamber mechanically contracts second motor
144 ..Fluid controlled one-way devices
145 ..Fluid motor controls device through cam or lever
146 ..Fluid motor structure
147 ...Radially expanding motor
148 ...With one-way device
149 ELECTRIC OR MAGNETIC DRIVE OR CONTROL
150 .Differential drive or control
151 .Plural power paths
152 ..With nonplanetary drive to electric or magnetic path
153 .With condition responsive control
154 .With electric or magnetic controlled brake
155 ..And manual speed selector
156 ..Electric or magnetic device disengages brake
157 ..Electric or magnetic engaged brake and spring engaged lockup clutch
158 WITH INDICATOR OR ALARM
159 WITH LUBRICATON
160 .For differential planetary gearing
161 WITH TRANSMISSION COOLING OR HEATING MEANS
162 PLANET PERIPHERY SURROUNDS AXIS OF INTERACTING GEAR (E.G., ECCENTRICALLY DRIVEN TRANSMISSON)
163 .Wabbler transmission
164 ..Single member has oppositely axially facing tooth sets
165 .Friction gearing
166 ..Variable speed
167 .Link chain gearing
168 .Gear teeth comprise rolling bodies
169 .Means to change speed ratio between input and output
170 ..Variable eccentricity
171 ..Plural power paths to planetary gearing
172 ..Condition responsive control
173 ..Plural planetary elements braked
174 .Plural outputs
175 .With releasable clutch or brake
176 .Gear has plural circumferential tooth sets
177 ..Internal and external tooth sets
178 .Circumferentially spaced connector pins
179 ..Roller bearing surrounds pin
180 .Particular gear tooth
181 .Particular counterweight
182 PLANET PINION ENGAGES FLEXIBLE BELT OR CHAIN
183 PLANET PINION IS FRICTION GEAR
184 .Plural outputs (e.g., differential)
185 .Variable speed ratio (without slippage)
186 ..Condition responsive ratio change
187 ..Releasably braked element
188 ...Plural elements releasably braked
189 ..Planet pinion is a ball
190 ..Planet pinion rotatable about axis at angle to axis of input or output gear
191 ...Planet pinion is member having axis fixed or adjustable to position perpendicular to axis of input or output gear
192 ....Pinion engages facing concave surfaces (e.g., mounted in torus)
193 ...Conical or frusto-conical planet pinion
194 ....Torque responsive means to increase contact pressure
195 .Torque responsive means to increase contact pressure
196 .Planet pinion is ball
197 .Planet pinion rotatable about axi8at angle to axis of input or output gear
198 VARIABLE SPEED OR DIRECTION TRANSMISSION COMBINED WITH DIFFERENTIAL
199 .Condition responsive
200 .Differential is beneath prime mover or transmission
201 .Differential is between prime mover and transission in the path of power flow
202 .With universal joint in drive train
203 .Plural selectively driveable gears surround differential
204 .Variable speed or direction is planetary transmission
205 ..Plural planetary units combined with differential
206 .Transmission output shaft parallel to differential output shafts
207 NONPLANETARY VARIABLE SPEED OR DIRECTION TRANSMISSION COMBINED WITH PLANETARY TRANSMISSION
208 .Condition repsonsive
209 .Interrelated control of in series transmissions
210 .Nonplanetary transmission is belt or chain gearing
211 ..Plural power paths to planetary gearing
212 ...Nonplanetary transmission is chain gearing
213 ..Nonplanetary transmission is chain gearing
214 .Nonplanetary transmission is friction gearing
215 ..Plural power paths to planetary gearing
216 ...Friction gear engages facing concave surfaces
217 ...Nonplanetary transmission is disc and wheel
218 .Plural power paths to planetary gearing
219 .Plural planetary units
220 DIFFERENTIAL PLANETARY GEARING
221 .Differential or nondifferential planetary combined with differential (e.g., two differentials)

DIFFERENTIAL PLANETARY GEARING
222 .With universal joint in drive train
223 .Including means to selectively apply rotational power to only one output
224 ..By braking other output
225 .With additional gearset between differential output and load
226 .Planet pinion is worm gear
227 ..And spur gear on pinion
228 .Worm drive on input shaft
229 ..And roller bearing supporting worm from casing
230 .Bevel gear differential
231 ..With means to limit overspeed of one output (e.g., lock-up clutch)
232 ...Centrifugal actuator
233 ...Lock-up clutch between pinion and pinion carrier
234 ...By axial movement of output gear
235 ....With spring bias on gear or clutch
236 ...Particular gear shape or tooth interaction limits overspeed
237 ...Manual actuator
238 ....Friction clutch
239 .....Plate clutch
240 ...Spring bias on overspeed limiting means
241 ....Helically coiled spring
242 ..Separate planet pinions or separate tooth set on same pinion for each output
243 ..Output gear rotatable relative to axial support shaft
244 ...Support shaft coupled to other output gear
245 ...With roller bearing between output gear and shaft
246 ..With roller bearing between gear and its support
247 ...Ball bearing
248 .Spur gear differential
249 ..With means to limit overspeed of one output
250 ...Manual actuator
251 ..Pinion axis at angle intersecting axis of output
252 ..Intermeshing planet pinions
253 ..With roller bearing between gear and its support
254 CONDITION RESPONSIVE CONTROL
255 .Eccentrically weighted planet
256 .Downshift responsive to high speed limit
257 .Speed responsive control adjusted or opposed by torque
258 .Centrifugally controlled clutch or brake
259 ..One-way clutch or brake
260 ..Centrifugal brake control
261 ..Positive clutch
262 ..Axially engaged friction clutch
263 .Overload release
264 ..Spring applied friction drive establishing means
265 ...Drive establishing means is friction brake
266 .Stepped, torque responsive ratio change
267 .With flywheel or centrifugal weight control
268 ..With planet pinion axis at angle to axis of mating gear (e.g., bevel gears)
269 WITH MEANS TO VARY DRIVE RATIO OR DISCONNECT DRIVE (E.G., BRAKE OR CLUTCH)
270 .Manual force provides reaction during drive
271 .Plural elements selectively braked
272 ..With preselection
273 ..Axis of planet pinion at angle to axis of mating gear (e.g., bevel gears)
274 ...And additional planetary gearset having axis of pinion parallel to axis of mating gear
275 ..Transmission includes three relatively rotatable sun gears
276 ...With brake for sun, carrier and orbit
277 ...With brake for plural sun gears
278 ....And brake for carrier
279 ...With brake for plural orbits
280 ..Brake for sun, carrier and orbit
281 ...Including one-way clutch or brake
282 ..Brake for sun and orbit
283 ...Including one-way clutch or brake
284 ..Brake for sun and carrier
285 ...Including one-way clutch or brake
286 ..Brake for orbit and carrier
287 ...Including one-way clutch or brake
288 ..Plural suns braked
289 ...Including one-way clutch or brake
290 ..Plural orbits braked
291 ...Including one-way clutch or brake
292 ..Including one-way clutch or brake
293 .Speed responsive clutch or brake
294 .Ratio shift initiated by reverse rotation of input shaft
295 .Plural outputs
296 .Plural drive ratios other than unity
297 ..Including one-way clutch or brake
298 .Gear shiftable axially to disconnect or vary ratio
299 ..Orbit shiftable relative to sun and carrier
300 ..Sun shiftable relative to orbit and carrier
301 .Brake or clutch on surface of helically coiled member
302 .Nonplanetary gearing combined with planetary
303 .With synchronizing clutch or brake
304 .Planet pinion is worm gear
305 .Including releasable clutch directly between planet pinion and carrier
306 .Brake for planetary transmission having axis of planet pinion at angle to axis of mating gear (e.g., bevel gears)
307 ..Including one-way clutch or brake
308 ..And lock-up clutch
309 ...Friction clutch
310 ....Plate clutch
311 .Sun braked
312 ..Including one-way clutch or brake
313 ..Intermeshing planet pinions on single carrier
314 ..And lock-up clutch
315 ...Friction clutch
316 ....Plate clutch
317 .Orbit braked
318 ..Including one-way clutch or brake
319 ..Intermeshing planet pinions on single carrier
320 ..And lock-up clutch
321 ...Friction clutch
322 ....Plate clutch
323 .Carrier braked
324 ..Including one-way clutch or brake
325 ..Intermeshing planet pinions on single carrier
326 ..And lock-up clutch
327 ...Friction clutch
328 ....Plate clutch
329 PLURAL POWER PATHS TO PLANETARY GEARING
330 .Plural planetary units
331 PLANETARY GEARING OR ELEMENT
332 .Plural outputs

PLANETARY GEARING OR ELEMENT
333 .Planet pinion is worm gear
334 .Floating support annulus in rolling contact with planet pinion
335 .Toothed planet pinion has smooth bearing surface engaging raceway on sun or orbit gear
336 .Axis of planet pinion at angle intersecting rotational axis of mating gear (e.g., bevel gears)
337 .Plural planet carriers in series move at different speeds
338 .Coaxial teeth around planet pinion engage axially spaced relatively rotatable gears
339 ..Engage plural relatively rotatable sun gears
340 ...And orbit gear
341 ..Engage plural relatively rotatable orbit gears
342 ...And sun gear
343 .Nonplanetary gearing combined with planetary
344 .Particular gear tooth feature
345 ..Nonmetallic or resilient
346 .Floating or flexible coupling or support
347 ..Resilient member
348 .Planet pinion supported by roller bearings
349 .With manual input

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CROSS-REFERENCE ART COLLECTIONS

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900 BRAKE FOR INPUT OR OUTPUT SHAFT
901 PARTICULAR MATERIAL
902 .Nonmetallic
903 STACKED PLANETARY GEARING
904 PARTICULAR MATHEMATICAL EQUATION

CLASS 493 MANUFACTURING CONTAINER OR TUBE FROM PAPER; OR OTHER MANUFACTURING FROM A SHEET OR WEB

1 CONTROL OF OPERATION BY USE OF TEMPLET, TAPE CARD, OR OTHER REPLACEABLE INFORMATION SUPPLY
2 .With sensing of numerical information and regulation with mechanical connection between sensing means and regulated means (i.e., Numerical Control)
3 CONTROL MEANS ENERGIZED IN RESPONSE TO ACTIVATOR STIMULATED BY CONDITION SENSOR
4 .Cigarette filter making
5 .Responsive to temperature
6 .Responsive to assembling or coating operation
7 ..Responsive to flowable material (e.g., glue, ink for printer, etc.)
8 .Responsive to work material, the product or means engaging the work material or the product
9 ..By use of pneumatic sensor
10 ..By use of photocell condition sensor
11 ...Responsive to mark or indicia on work
12 ...Responsive to defective or missing work
13 ...Plural sensors
14 ....Plural interrelated sensors
15 .....Photocell and diverse-type sensor
16 ..To eject defective work material or product
17 ..By use of plural sensors
18 ...Plural interrelated sensors
19 ....Sensing opposite edges of planar work
20 .....Opposite side edges
21 ..To actuate timer
22 ..To actuate cutting, breaking, tearing, or abrading means
23 ..To actuate folder
24 ..Sensing indeterminate length work supply
25 ..Responsive to size of work or product
26 ..Responsive to weight of work or product
27 ..To stop machine
28 ..Responsive to count
29 ..To actuate material advancing means
30 .Responsive to machine element
31 ..Malfunctioning machine element
32 ...Responsive to stress of machine element
33 ....To stop machine
34 ..To adjust machine element to preselected position
35 ..Responsive to count of machine element
36 ..Responsive to timer
37 WITH MEASURING OR TESTING
38 SAFETY
39 CIGARETTE FILTER MAKING
40 .Filter having indicator or inspection means
41 .With application of heat to secure wrapper
42 .With shaping or compacting of filter material
43 ..Including heating
44 ..Including fluid contact for forming
45 ..Cutting continuous length rod into determinate lengths
46 ..Prior to assembly with other cigarette filter material
47 .By assembling dissimilar filter materials (e.g., fiber and powdered charcoal, etc.)
48 ..With application of forced air, vacuum or vibration to assist handling
49 ..Including plasticizer, adhesive, coating, or impregnant
50 .Filter of fibrous material
51 CONTAINER MAKING
52 .Rigid container (e.g., box, carton, cap, cup, etc.)
53 ..With printing or photographic reproduction
54 ...On material prior to assembly with container
55 ...On material to be erected to become container
56 ..With cutting, breaking, tearing, or abrading
57 ...By randomly manipulated implement
58 ...And embossing
59 ...And form-scoring
60 ....Rotary cutting, breaking, tearing, abrading, or form-scoring tool
61 ....Reciprocatory cutting, breaking, tearing, abrading, or form-scoring tool
62 .....Severing of web into blanks
63 ...Perforating
64 ...By rotary tool
65 ....On travelling carrier
66 ....Flexibly mounted rotary tool
67 ....Including assembling of distinct members
68 .....And folding
69 ....Including folding
70 .....Of flap
71 .....With means to advance work or product
72 ......Continuous advance
73 ...By reciprocatory tool
74 ....Severing of web into blanks
75 ....Including assembling of distinct members
76 .....Comprising bringing two members together
77 ......Indeterminate length member
78 ....Member comprising adhesive backed tape
79 ....Including folding
80 .....Of flap
81 .....With means to advance work or product
82 ...With scrap material separation or removal
83 ..With scrap material separation or removal
84 ..Assembling of distinct members
85 ...With extruding, drawing, or attenuating
86 ...Including cutting or tearing edge to container
87 ...Including discharge assist means (e.g., valve, pour spout, etc.)
88 ...Including handle or suspension means
89 ...Including structural reinforcement
90 ...Including internal partition
91 ....Intersecting partitions
92 ....Single shaped partition adapted to touch packaged material on three sides
93 ...Liner
94 ....Partial liner (e.g., fly liner, bottom gasket, etc.)
95 ....Liner permanently secured to wall
96 .....Prior to erecting of container
97 ......With indeterminate length work supply
98 .....Assembling by wrapping container about premade liner
99 .....Secured at container seam
100 ....Premade liner and premade container

CONTAINER MAKING
.Rigid container (e.g., box, carton, cap, cup, etc.)
..Assembling of distinct members
...Liner
....Premade liner and premade container
101 .....With venting or vacuumizing of container to allow assembly with liner
102 ...Including application of distinct closure
103 ....Closure having metallic portion
104 ....Nonrectangular cross section container
105 .....By use of turret mandrel carrier
106 ......And frustoconical form
107 ....Rotary form
108 .....Circular cross section container
109 ......With bending to secure closure
110 ...Including laminating or coating of container blank
111 ...Including wrapping of container
112 ....Including use of rotary container support
113 ....Including use of reciprocatory container support
114 ...Securing
115 ....By application of distinct securing member
116 .....Tape
117 ......Applied to moving work
118 .....Material penetrating member
119 ......Bifurcated member
120 ...Including use of work supply hopper
121 ..Securing
122 ...Including use of work blank supply hopper
123 ....And use of vacuum to handle work
124 .....To place blank onto folder
125 .....With conveyor for advance to folder
126 .....And means to transfer blank to folder
127 .....Comprising folder
128 ...With application of adhesive
129 ....And heat sealing
130 ....With work advance between application of adhesive and securing
131 .....Application of adhesive to moving work
132 ......By applicator having surface engaging and moving with work
133 ...Including heat sealing
134 ....By direct application of fluid
135 ....Of moving work
136 ...By interfitting of container portions
137 ....Interlocking tab and slot
138 .....Including integral internal partition
139 .....Integral interlocking closure
140 ....Inwardly folded flange
141 ...Including means to press work while adhesive sets or dries
142 ....Work advancing during pressing
143 .....Plunger- and die-type press
144 .....Roller-type press
145 ....Manually actuated press
146 .....Manually driven
147 ...With means to advance work or product
148 ..With coating
149 ...On nonrectangular cross section container
150 ...Adhesive
151 ....And folding
152 ..Nonrectangular cross section container
153 ...Noncircular cross section
154 ...By use of conical former (e.g., pleating, etc.)
155 ....Rotary former
156 ...End closing
157 ....By folding over end of tube
158 ...Edge crimping or curling
159 ....By relative rotation of work and tool about work axis
160 ..Including form-scoring
161 ...Continuous advance with form-scoring tool moving with work
162 ..Folding
163 ...By mandrel on endless carrier
164 ....Assembly of plural mandrels turning about fixed axis
165 .....To form gable top on container
166 .....Folder driven by stationary cam
167 ...By plunger
168 ....Forming hollow wall or 270 degree folded edge
169 ....Plural interrelated plungers (e.g., making separate cover and container)
170 ....Flowable plunger or reaction member
171 ....Expandable or contractable plunger or reaction member
172 ....Orbitally moving plunger or reaction member
173 .....Continuously orbiting
174 ....And reciprocatory reaction member
175 ...By mandrel
176 ....And reciprocatory arm like tool
177 ...Work moving transversely to fold line during folding
178 ...Work moving parallel to fold line during folding
179 ....On endless conveyor belt or chain
180 ...With means to advance work or product
181 ....Of flattened tubular blank
182 ....By endless conveyor belt or chain
183 ....End flap folding
184 ....Forming gable top
185 ..Including crushing or crumpling
186 .Pliable container (e.g., bag, envelope, etc.)
187 ..With printing or photographic reproduction
188 ...On work material
189 ..Including heat sealing
190 ...And cooling
191 ....Heating or cooling by direct application of fluid
192 ...By direct application of fluid
193 ...Including supplying indeterminate length work
194 ....And cutting, breaking, tearing, or abrading
195 .....At separate station from heat sealing
196 ......With means to advance work or product
197 ....Including work advance during heat sealing
198 ....With means to receive interconnected products
199 ...And cutting, breaking, tearing, or abrading
200 ....At separate station from heat sealing
201 .....With means to advance work or product
202 ......Including work advance during heat sealing
203 ....Composite heat sealing and severing
204 .....With vertical stacking of product
205 ...Heat sealing by means moving with work

CONTAINER MAKING
.Pliable container (e.g., bag, envelope, etc.)
..Including heat sealing
206 ...By oppositely moving work gripping means
207 ...By yieldable, heated means
208 ...By rotary heat sealer
209 ...By reciprocatory heat sealer
210 ..Assembling of distinct members
211 ...With extruding, drawing, or attenuating
212 ...Means to facilitate opening of container
213 ....Reclosable means (e.g., valve)
214 ...Closure securing element
215 ....Plastically deformable
216 ...Return envelope or message card and main envelope
217 ...Liner
218 ...Bottom to square-bottom-folded bag
219 ...Bottom to satchel-bottom-folded bag
220 ...With coating
221 ....Application of adhesive to secure handle or suspension means
222 ...Means to permit visual inspection of content (e.g., window, etc.)
223 ...With cutting, breaking, tearing, or abrading
224 ....Subdividing web of material
225 ...Drawstring to close container
226 ...Handle or suspension means
227 ..With cutting, breaking, tearing, or abrading
228 ...Including form-scoring
229 ....Notching of work edge
230 ....Partial severance to form interconnected products
231 ...Including folding
232 ....Notching of work edge
233 ....Partial severance to form interconnected products
234 .....With application of tension to tear container from web
235 ....Severing of container or container blank from web
236 .....By severing means moving with work
237 ...Notching on work edge
238 ...Partial severance to form interconnected products
239 ...Severing of container or container blank from web
240 ..Including form-scoring
241 ...By rotary tool
242 ...By reciprocatory tool
243 ..Including folding
244 ...Of previously folded material (e.g., refolding, etc.)
245 ....Flap
246 ...Plural folding stations folding noncontinuously advancing work
247 ....With work turret
248 ...By infeeding work to passive folder
249 ...By buckling
250 ...By mandrel or plunger
251 ....Three point, continuous 180 degree folding
252 ....Mandrel having rectangular surface
253 ....Forming triangularly folded container surface
254 ...Central fold
255 ...Tube opening and closing
256 ....Including application of fluid pressure or vacuum to work
257 ....By roller having gripper engaging end edge of tube
258 .....And having side fold gripper
259 ....By means engaging end edge of tube
260 ...Closing of flap
261 ....Multiple flaps
262 .....Container moving transersely to fold
263 ......And parallel to another fold
264 ..With application of adhesive or securing by adhesive
265 ...And drying
266 ...Application by work contacting applicator (e.g., roller, brush, etc.)
267 ..Method
268 ..Means to assist manual manipulation
269 TUBE MAKING
270 .With printing or photographic reproduction
271 .With minute size change of formed tube
272 .With coating
273 ..Applied externally of formed tube
274 ..And heating or drying
275 ..By immersion
276 ..Adhesive
277 ...By work engaging applicator
278 ....Rotary applicator
279 .....Having adhesive transferring roller
280 ......Nondriven roller
281 ......And having scraper
282 .....Coacting with opposed work engaging roller
283 ......Nondriven roller
284 .....Brush
285 .....Plural applicators
286 ......And plural sources of adhesive
287 .With cutting, breaking, tearing, or abrading
288 ..Severing of formed tube to length
289 ...By severing means moving with work
290 ...During relative rotation between work and severing means about work axis
291 .With surface treatment (e.g., polishing, burnishing, etc.)
292 .Tube including metal component
293 .With extruding, drawing, or attenuating
294 .With lining of tube
295 .Polygonal cross section tube
296 .Frustoconical tube
297 .Assembling of distinct members
298 ..With plural, orbiting work supply reels
299 .Spiral winding
300 ..Orbiting work supply reels
301 ..And advancing by wrapping belt
302 .With advancing of tube axially
303 .Convolute winding
304 ..By use of external guide member
305 ..By use of plural mandrels
306 ...On turret
307 ..By manually driven or manipulated means
308 .Including closing end of tube
309 CONTAINER OR TUBE ERECTING, OPENING, OR COLLAPSING
310 .Including overfolding or reverse bending
311 .Collapsing
312 .Cellular container
313 .By direct application of vacuum or fluid pressure
314 ..Internal fluid pressure to erect container or tube
315 ..Orbital movement of work contacting vacuum applying means
316 ..Oscillating movement of work contacting vacuum means
317 ...Compound movement
318 .By orbital means

CONTAINER OR TUBE ERECTING, OPENING, OR COLLAPSING
.By orbital means
319 ..Endless belt or chain
320 WITH PRINTING OR PHOTOGRAPHIC REPRODUCTION
321 .By rotary printer
322 .By bed and travelling cylinder printer
323 .Selective type printer
324 .And cutting, breaking, tearing, or abrading
325 ..With securing
326 WITH OR INCLUDING SURFACE PREPARATION FOR COATING
327 .Removal of previously applied coating
328 WITH COATING
329 .By immersion
330 .Plural diverse materials
331 .Adhesive
332 ..With heating or drying
333 ..Applied in a repeating pattern
334 ..With assembling of distinct members
335 ...Indeterminate length work
336 ..By work contacting applicator
337 ...Comprising roller
338 WITH EXTRUDING, DRAWING, OR ATTENUATING
339 .Method
340 WITH CUTTING, BREAKING, TEARING, OR ABRADING
341 .Including application of heat
342 .With scrap material separation or removal
343 .Including assembling or disassembling of distinct members
344 ..Comprising bringing two members together
345 ...Indeterminate length member
346 ....Plural indeterminate length members
347 ....Member comprising adhesive backed tape
348 ....Including use of work supply hopper
349 ...Wrapping one member about another member
350 ...And securing by interfitting
351 ....Work penetrating member
352 .And with bending
353 ..By use of composite cutting, breaking, tearing, or abrading tool and folding tool
354 ..By use of composite cutting, breaking, tearing, or abrading tool and form-scoring or crushing tool
355 ..Form-scoring
356 ..Folding
357 ...With means to advance work or product
358 ....Continuous advance with endless belt folder surface moving with work
359 ....Continuous advance with rotary folder surface moving with work
360 ....Folding by roller
361 .Plural cutting, breaking, tearing, or abrading stations
362 ..With advancing work from first to second station
363 .Making plural, separate cuts by distinct cutting edges
364 ..Engaging work on opposite sides
365 ...Rotary cutter
366 ..By relatively adjustable cutting edges or cutting and scoring edges
367 ...On rotary tool support
368 ....Adjustable circumferentially
369 .Of moving work
370 .By rotary tool
371 ..With flexibly mounter cutter
372 .By reciprocatory tool
373 WITH SCRAP MATERIAL SEPARATION OR REMOVAL
374 ASSEMBLING OR DISASSEMBLING OF DISTINCT MEMBERS
375 .Of tag or label to tether or to article
376 ..By passing tether through tag or label and article in single stroke
377 .Including tear strip
378 .Including cutting or tearing edge
379 .Comprising bringing two members together
380 ..Indeterminate length member
381 ...Plural indeterminate length members
382 ...Member comprising adhesive backed tape
383 ..Including distinct securing member
384 ...Work penetrating member
385 ....Bifurcated securing member
386 ..Wrapping one member about another member
387 ...Including convex or recessed surface (e.g., eyeglass case)
388 ...By use of rotary work support
389 ...By use of reciprocatory work support
390 ..And securing by interfitting
391 ...Assembling container partitions
392 ...Work penetrating member
393 .Securing
394 SECURING
395 BENDING
396 .Form-scoring
397 ..With folding
398 ...Plural work stations
399 ....Folding along score line
400 ..With means to advance or position work or product
401 ...Continuous advance
402 ....By rotary tool having surface moving with work
403 .....Roller
404 ..Form-scoring along intersecting lines
405 .Folding
406 ..And tautening or smoothing
407 ..With crushing or crumpling
408 ..Overfolding
409 ..Refolding or unfolding
410 ...Of indeterminate length work
411 ....Including use of swinging work guiding means (e.g., zigzag folding, etc.)
412 ....With elevating work support
413 ..Folding of indeterminate length work by swinging work guiding means (e.g., zigzag folding, etc.)
414 ...Swinging passage
415 ....Defined by feed roll pair
416 ..With means to advance work or product
417 ...And provision to precisely align for folding
418 ...Folding by direct application of vacuum or fluid
419 ...Folding by buckling
420 ....Buckle chute folding
421 .....Plural folding operations making multiple folds
422 ...Continuous advance with folder moving with work
423 ....Folding by endless belt
424 ....Rotary folder
425 .....Having radial folding blade
426 ......Radially moving folding blade
427 ....Fold off-roll-type folder
428 ....And cooperating, registering cylinder
429 ....Plural folding blades
430 ....For zigzag folding
431 ....Planetary blade

	BENDING
	.Folding
	..With means to advance work or product
	...Continuous advance with folder moving with work
	....Rotary folder
	.....Having radial folding blade
432	......And cooperating, registering cylinder
433	.......For zigzag folding
434	.....Folding by roller
435	......Roller couple
436	...Continuous advance past folder
437	....Reciprocatory folder
438	....Folding by passive reaction member
439	.....Folding indeterminate length work
440	......Plural folding actions
441	...Folding by endless belt
442	...Folding by roller
443	....Roller passive reaction member
444	.....With reciprocatory folding knife
445	......Reaction member comprising roller pair yieldably biased together
446	...Folding by passive reaction member
447	....Including multiple reaction members each presenting one or more shaping edges
448	.....And provision to allow one reaction member to move relative to another (e.g., zigzag folding, etc.)
449	....And cooperating plunger
450	..By direct application of vacuum or fluid
451	..By plural relatively movable folding edges approaching work from same side (e.g., zigzag folding, etc.)
452	..Forming gable top
453	..Including folding end flap
454	..By rotary member
455	..By passive reaction member
456	...Including multiple shaping edges on reaction member
457	...And cooperating reciprocatory folder
458	..Sequential, diverse folds
459	.Pulling over an edge (e.g., curling, etc.)
460	.Deflecting
461	..Of longitudinally moving work
462	...To form convolute coil (e.g., paper "log", etc.)
463	.Corrugating
464	.Crushing or crumpling
465	FLEXING
466	.To present part of workpiece for securing to another part
467	SURFACE TREATMENT
468	TOOL OR TOOL SUPPORT
469	.Adapted to be magnetically manipulated
470	.Adapted to be heated or cooled
471	.Rotary
472	.With ejector or stripper
473	.Plural tools or tool supports
474	.Expandable or collapsible
475	.Adjustable
476	..Folder
477	MACHINE FRAME
478	.Adjustable
479	..Plural, simultaneous adjustments
480	MISCELLANEOUS
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
901	RIGID CONTAINER
902	.Dished
903	.Insulated thermally
904	.Cushioned
905	.Having window
906	.Having multilayer wall
907	..Lined
908	..Covered
909	.Having handle or suspension means
910	.Cigarette container
911	..Flip-top
912	.Having internal partition
913	..Egg container
914	.Eyeglass container
915	.Match container
916	PLIABLE CONTAINER
917	.Envelope
918	..Expandable
919	..Having window
920	..Having plural compartments
921	..Having integrally formed insert
922	..Having liner
923	..With opening means (e.g., tear strip, valve, etc.)
924	.Requiring external support during filling
925	.Having mesh or window opening
926	.Having handle or suspension means
927	.Reclosable
928	..With draw string
929	..With valve
930	.Having tear strip
931	.Having plural compartments
932	.Having plural openings
933	.Having multilayer wall
934	.Parallelepiped or tetrahedron shape
935	.Covering bag (e.g., garment protector, etc.)
936	.Square bottom
937	TEXTILE
938	.Apparel
939	APPAREL SUPPORT
940	BELLOWS
941	FILTER
942	CLEANING IMPLEMENT (E.G., BRUSH, DUST MOP, ETC.)
943	CANDY STICK
944	APERTURE CARD OR DISPLAY DEVICE WITH WINDOW
945	COIN HOLDER
946	PHONOGRAPH RECORD JACKET
947	FILE FOLDER
948	IGNITING FUSE
949	ELECTRICAL INSULATION
950	LAMP SHADE
951	SEEDLING CONTAINER
952	PHOTO CORNER MOUNT
953	STENCIL OR OUTLINE GUIDE
954	SPOOL
955	DECORATION ARTICLE
956	.Having appearance of living plant (e.g., Christmas tree, etc.)
957	.Festoon
958	.Garland
959	TOY OR AMUSEMENT ARTICLE
960	TOILET ARTICLE
961	TAG, MARKER, OR LABEL
962	CLOSURE (E.G., TIE STRING, VALVE, ETC.)
963	OPENER (E.G., TEAR STRIP, ETC.)
964	PALLET
965	.Flat or "Boat" (for candy, crakers, etc.)
966	HONEYCOMB STRUCTURE
967	DUNNAGE, WADDING, STUFFING, OR FILLING EXCELSIOR
968	STRUCTURAL SHAPE

CLASS 494 IMPERFORATE BOWL, CENTRIFUGAL SEPARATORS

DECEMBER 1990

1 WITH CONDITION RESPONSIVE MEANS
2 .For controlling outlet valve
3 ..In response to location of inner boundary of heavy component
4 ..In response to centrifugal force
5 .For controlling inlet valve
6 ..In response to level of liquid-type material in bowl or in reservoir for supplying bowl
7 .For controlling drive of (a) bowl or (b) driven means within bowl
8 ..In response to load imposed upon driven means
9 ..In response to speed of bowl or rotarily-driven means therewithin
10 WITH MEANS FOR INDICATING, INSPECTING, MEASURING, SIGNALING OR TESTING
11 WITH CYCLIC OR TIME CONTROL MEANS
12 INCLUDING MEANS OR STRUCTURE FOR PROMOTING SAFETY
13 WITH MEANS FOR EXCHANGING HEAT
14 .Comprising or including means for cooling
15 WITH MEANS FOR LUBRICATING
16 INCLUDING PLURALITY OF MINIATURE BOWLS (E.G., TEST TUBES) DISTRUBUTED ABOUT ROTATABLE CARRIER AND READILY REMOVABLE THEREFROM
17 .And means for introducing either material or auxiliary fluid into bowls
18 ..Including conduit of flexible umbilical cable type
19 .And means for rotating each bowl about own axis
20 .Having bowls, or holders therefor, pivotaby attached to carrier for tilting during rotation of carrier
21 .Comprising flexible bowls embraced by pockets provided therefor in carrier
22 INCLUDING INTRODUCTION OF DIFFERING-WEIGHT FLUIDS (E.G., LIQUIDS) FOR COUNTERCURRENT FLOW
23 WITH MEANS FOR FURNISHING AUXILIARY FLUID TO MATERIAL OR APPARATUS
24 .Energy of fluid utilized for driving bowl
25 .Gas other than air
26 .Air at atmospheric, or greater, pressure
27 .Liquid
28 ..Moving radially inwardly toward axis of rotation of bowl
29 ..Furnished at plural locations
30 ..Including one or more valves in incoming path
31 INCLUDING PLURALITY OF SEPARATE AND DISTINCT BOWLS
32 .And means external of bowls for conducting material therebetween
33 .Having bowls equally spaced from a central axis of rotation for orbiting thereabout
34 .Having bowls spaced along common axis of rotation
35 BOWL AND MEANS EXTERNAL THEREOF FOR RECIRCULATING MATERIAL
36 WITH MEANS FOR FILTERING
37 PROCESS
38 INCLUDING SEALING MEANS
39 .For protecting evacuated, bowl-enclosing housing against gaseous infiltration
40 .Comprising seal, or element cooperating therewith, movable axially for controlling outlet on periphery of bowl
41 .For sealing between stationary and moving elements
42 INCLUDING DRIVEN MEANS AT LEAST PARTIALLY EXTERNAL OF BOWL FOR MOVING MATERIAL THERETO OR THEREFROM
43 ROTATABLE BOWL
44 .Comprising plurality of bowls partly or wholly within one another
45 .Including flexible, removable lining therein
46 .Including bearing means adapted to enable bowl to establish dynamic axis of rotation
47 .Including means for imparting other movement to bowl in whole or in part before, during or after its axial rotation
48 ..Axial movement of one portion of bowl wall relative to another (e.g., for discharging)
49 .Driven by energy of material supplied
50 .Including driven material-moving means therein
51 ..Plural driven means
52 ..Rotatably driven coaxially with bowl, but differing as to direction or speed
53 ...Including element having helical blade
54 ....Modified blade
55 ...Including plurality of discrete pushing or scraping elements moving proximate to material collecting surface of bowl
56 .Including discharge-related structure in nature of (a) outlet having device for controlling quantity of flow, (b) element associated with pickup of material and adjustable for varying quality of flow, or (c) static scraper or the like for engaging material in moving bowl
57 ..Element associated with pickup of material and adjustable for varying quality of flow
58 ..Static scraper or the like for engaging material in moving bowl
59 ...And structure to receive or guide material loosened
60 .Including housing for bowl
61 ..And means for reducing, and maintaining, pressure in housing below that of environment
62 ..Serving to support bowl from above
63 ..For vertically-oriented bowl, and having plural receivers at top for separated components
64 .Having structural provision for facilitating cleaning (e.g., quick take-apart)
65 .Vertically-oriented, and including structural provision for bottom entry of material
66 .Including structure located within bowl and defining axially-extending, helical flow path
67 .Including structure located within vertically-oriented bowl and extending outwardly from central region (e.g., axis) thereof
68 ..Comprising plurality of elements, each concentrically encircling axis of bowl and spaced therealong
69 ...Each extending generally normally to region, and having surface displaying three-dimensional configuration

	ROTATABLE BOWL
	.Including structure located within vertically-oriented bowl and extending outwardly from central region (e.g., axis) thereof
	..Comprising plurality of elements, each concentrically encircling axis of bowl and spaced therealong
70	...Each extending away from region with significant downward, as well as significant outward, component (e.g., nested cones)
71	....And the plurality divided vertically into two or more, physically separate or functionally distinct groups
72	....And extending therebeyond generally downwardly
73	....And one or more elements having surface displaying three-dimensional configuration
74	..Comprising plurality of axially-extending, plate-like elements, each having its inner edge lying along central region
75	...And each extending outwardly in curve of changing or constant radius
76	.Including plurality of axially-extending, tubular elements located within vertically-oriented bowl
77	..Each element concentric with axis of bowl
78	...And at least one element having other-than-circular periphery
79	.Including plurality of axially-extending, plate-like elements located within vertically-oriented bowl
80	.Including plurality of shelf-like elements located within vertically-oriented bowl and extending generally horizontally inwardly from wall thereof
81	.Material of bowl wall
82	INCLUDING VIBRATION DAMPING MEANS
83	INCLUDING BEARING STRUCTURE
84	INCLUDING SPECIFIC DEVICE OR STRUCTURE FOR DRIVING OR CONTROLLING BOWL
85	MISCELLANEOUS
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	CROSS-REFERENCE ART COLLECTIONS
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900	INVOLVING MIXTURE CONTAINING ONE OR MORE GASES
901	INVOLVING MIXTURE CONTAINING OIL
902	INVOLVING THE USE OF MERCURY

1 CERAMIC COMPOSITIONS
2 .Devitrified glass-ceramics
3 ..Halogen containing crystalline phase (e.g., fluormica, etc.)
4 ..Silica containing crystalline phase (e.g., stuffed quartz, crystobalite, etc.)
5 ..Binary, ternary, quaternary, etc., metal silicate crystalline phase (e.g., mullite, diopside, sphene, plagioclase, slagcerams free of alumina, etc.)
6 ...Alkali metal aluminosilicate crystalline phase
7 ....Lithium aluminosilicate (e.g., spodumeme, eucryptite, petalite, etc.)
8 ...Divalent metal oxide aluminosilicate crystalline phase (e.g., anorthite, slagcerams, etc.)
9 ....Magnesium aluminosilicate (e.g., cordierite, etc.)
10 ..Nonsilica and nonsilicate crystalline phase (e.g., spinel, barium titanate, etc.)
11 .Glass compositions, compositions containing glass other than those wherein glass is a bonding agent, or glass batch forming compositions
12 ..Made by gel route
13 ..Radiation color change responsive
14 ..Enamels, glazes, or fusion seals (e.g., raw, fritted, or calcined ingredients)
15 ...Fusion seals (frit plus material other than glass)
16 ...Plural diverse frits
17 ...Frit plus material other than glass (e.g., color, opacifier, mill additions, etc.)
18 ....Titanium or zirconium compound as other material
19 ....Free metal as other material
20 ....With vehicle or suspending agent (i.e., slip)
21 ...Chemically specified frit compositions
22 ....Lead containing
23 .....And titanium or zirconium
24 ....Phosphorous containing
25 ....Halogen containing
26 ....Zinc containing
27 ..Glass batch forming compositions (i.e., glass batch compositions)
28 ...Slag containing
29 ...Pellet or agglomerate containing
30 ...Halogen containing
31 ...Uncombined silica containing (e.g., sand)
32 ..Glass and material other than glass (e.g., crystal glass, opal glass, etc.)
33 ..Beads
34 ...Reflective
35 ..Fibers
36 ...Mineral fibers (e.g., slag wool, rock wool, mineral wool, etc.)
37 ...Optical fibers
38 ...Titanium or zirconium containing
39 ..Pore-forming
40 ..Nonoxide glasses (e.g., fluoride glasses, etc.)
41 ..Nonsilicate oxide glasses
42 ...Germanium containing
43 ...Halogen containing
44 ....Fluorine and phosphorus containing
45 ...Phosphorus containing
46 ....And titanium, zirconium, vanadium, tungsten, or molybdenum
47 ....And boron
48 ....And aluminum or beryllium
49 ...Boron containing
50 ....And yttrium or rare earth (i.e., elements with atomic numbers 39, 57-71, or 89+)
51 .....And zirconium, titanium, tantalum, or niobium
52 ....And aluminum or beryllium
53 ..Silica containing
54 ...More than 90 percent by weight silica
55 ...40 percent - 90 percent by weight silica
56 ....And halogen or nitrogen
57 .....Fluorine
58 ......And boron
59 ....And aluminum
60 ....And lead
61 .....And boron
62 .....And aluminum
63 ....And phosphorus, niobium, or tantalum
64 ....And yttrium or rare earth (i.e., elements with atomic numbers 39 or 57-71)
65 ....And boron
66 .....And aluminum
67 ......And zinc or zirconium
68 ....And aluminum or iron compound
69 .....And divalent metal oxide (e.g., oxides of zinc, cadmium, beryllium, alkaline earth metal, magnesium, etc.)
70 ......Calcium oxide containing
71 ....And chromium, nickel, or cobalt
72 ....And divalent metal oxide (e.g., oxides of zinc, cadmium, beryllium, alkaline earth metal, magnesium, etc.)
73 ...Less than 40 percent by weight silica
74 ....And lead
75 .....And boron
76 ......And zinc
77 ....And boron
78 .....And rare earth (i.e., elements with atomic number 39 or 57-71)
79 .....And zinc
80 .Pore-forming
81 ..By use of organic combustible material
82 ...Of resin or vegetable origin material
83 ....Of cellulosic material
84 ..By gas blowing, foaming agent, or in situ reactive gas generation
85 ..By volatilizing or heat expansion of water or other noncombustible material
86 .Synthetic precious stones (e.g., single crystals, etc.)
87 .Carbide or oxycarbide containing
88 ..Silicon carbide
89 ...And aluminum compound
90 ...And carbonaceous material
91 ...And different carbide
92 ...And boride, silicide, nitride, or oxynitride
93 ..Plural carbides (i.e., carbides of plural metals) containing
94 .Refractory
95 ..Fiber or fiber containing
96 ..Boride, silicide, nitride, or oxynitride containing
97 ...Silicon nitride or silicon oxynitride containing
98 ...And trivalent metal compound containing (e.g., clay, yttrium oxide, sialon, etc.)
99 ..Elemental carbon containing

	CERAMIC COMPOSITIONS
	.Refractory
	..Elemental carbon containing
100	...And aluminum compound (e.g., clay, aluminum oxide, etc.)
101	...And alkaline earth metal or magnesium compound (e.g., dolomite, magnesium oxide, etc.)
102	..Zirconium compound containing
103	...Zirconium oxide
104	....And alkaline earth metal or magnesium compound
105	....And aluminum compound (e.g., clay, aluminum oxide, etc.)
106	...Zirconium silicate
107	....And aluminum compound (e.g., clay, aluminum oxide, etc.)
108	..Magnesium compound containing
109	...With organic material in starting mixture
110	....And iron or chromium compound
111	...And phosphorus compound
112	...And iron compound
113	....Dolomite containing
114	....And chromium compound
115	.....Fused cast or fused material containing
116	.....Chemical binder containing
117	...And chromium compound
118	...And aluminum compound
119	....Aluminum compound other than clay
120	.....Spinel or other aluminate
121	...Less than 90 percent by weight magnesium compound
122	...And silicon compound
123	..Alkaline earth metal compound containing
124	...Hydraulic cement containing
125	...And aluminum compound
126	..Trivalent metal compound (e.g., iron oxide, chromium oxide, trivalent rare earth oxide, etc.) containing
127	...Aluminum compound (e.g., clay, aluminium oxide, etc.)
128	....And silicon compound other than clay
129	.....And silica-clay mixtures
130	.....And clay containing
131	......Less than 40 percent by weight clay
132	...Chromium compound containing
133	..Silica containing
134	.Titanate, zirconate, stannate, niobate, or tantalate or oxide of titanium, zirconium, tin, niobium, or tantalum containing (e.g., dielectrics, etc.)
135	..Alkaline earth or magnesium containing
136	...Titanate containing
137	....Barium titanate
138	.....And divalent metal oxide other than alkaline earth oxide or magnesium oxide
139	.....And trivalent metal oxide
140	.Elemental sulfur containing
141	.Clay containing (e.g., porcelain, earthenware, etc.)
142	..And phosphorus (e.g., bone china, etc.)
143	..And flint or feldspar
144	...Kaolin (e.g., ball clay, fire clay, etc.) containing
145	..Clay pretreatment
146	...Chemical pretreatment
147	....Using alkaline compound treating agent
148	....Using organic substance as treating agent
149	...Water pretreatment
150	...Heat pretreatment
151	.Fluorine containing
152	.Yttrium, lanthanide, actinide, or transactinide containing (i.e., atomic numbers 39 or 57-71 or 89+)
153	.Aluminum compound containing
154	.Silicon compound containing
155	.Composed of waste material
	*******************************
	CROSS-REFERENCE ART COLLECTIONS
	*******************************
900	.Optical glass (e.g., silent on refractive index and/or Abbe number)
901	..Having R.I. at least 1.8
902	..Having Abbe number at least 70
903	..Having refractive index less than 1.8 and Abbe number less than 70
904	..Infrared transmitting or absorbing
905	..Ultraviolet transmitting or absorbing
906	..Thorium oxide containing

CLASS 502 CATALYST, SOLID SORBENT, OR SUPPORT THEREFOR, PRODUCT OR PROCESS OF MAKING

NOTE:

In this schedule, many subclasses are based on the groupings of elements in the periodic chart. Below are listed elements in the groups as used in the schedule. Obsolete and archaic names and synonyms for elements are to be found in the class definition.

Group I metals : Li(Lithium), Na(Sodium), K(Postassium), Rb(Rubidium), Cs(Cesium), Fr(Francium), Cu(Copper), Ag(Silver), and Au(Gold)

Group II metals : Be(Beryllium), Mg(Magnesium), Ca(calcium), Sr(strontium), Ba(Barium), Ra(Radium), Zn(Zinc), Cd(Cadmium), and Hg(Mercury)

Group III metals : Sc(Scandium), Y(ttrium), Al(Aluminum), Ga(Gallium), In(Indium), and Tl(Thallium)*

Group IV metals : Ti(Titanium), Zr(Zirconium), Hf(Hafnium), Ge(Germanium), Sn(Tin), and Pd(Lead)

Group V metals : V(Vanadium), Nb(Niobium) Ta(Tantalum), As(Arsenic), Sb(Antimony), and Bi(Bismuth)

Group VI metals : Cr(Chromium), Mo(Molybdenum), W(Wolfram), T(Tungsten), and Po(Polonium)

Group VII metals : Mn(Manganese), Tc(Technetium), and Re(Rhenium)

Group VIII metals : Iron group metals Fe(Iron), Co(Cobalt), Ni(Nickel), and the platinum group metals Ru(Ruthenium), Rh(Rhodium), Pd(Palladium), Os(Osmium), Ir(Iridium), and Pt(Platinum)

Lanthanides : Elements with atomic numbers 57-71 inclusive, La(Lanthanum), Ce(Cerium), Pr(Praseodynium), Nd(Neodymium), Pm(Promethium), Sm(Samarium), Eu(Europium) Gd-(Gadolinium), Tb(Terbium), Dy(Dysprosium), Ho(Holmium), Er(Erbium), Tm(Thulium), Yb(Ytterbium and Lu(Luthetium)*

Alkaline Earth Metals: Ca(Calcium), Sr(Strontium), Ba(Barium), and Ra(Radium)

Alkali metals : Li(Lithium), Na(Sodium), K(Postassium), Rb(Rubidium), Cs(Cesium), and Fr(Francium)

Actinides : Elements with atomic numbers 89 and above inclusive, Ac(Actinium), Th(Thorium) Pa(Protactinium), U(Uranium), Np(Neptunium) Pu(Plutonium), Am(Americium), Cm(Curium), Bk(Berkelium), Cf(Californium), Es(Einsteinium), Fm(Fermium), Md(Mendelevium), No(Nobelium), and Lw(Lawrencium)*

Halogens : F(Fluorine), Cl(Chlorine), Br(Bromine), I(Iodine), and At(Astatine)

Rare Earth : Lanthanides, Scandium and Yttrium

* La is grouped with the lanthanides and Ac with the Actinides and not with Group III

1 HAVING FOREIGN OR DIVERSE FUNCTION (E.G., PREVENT CORROSION, ETC.)
2 .With structure having utility in addition to support or carrier
3 TO BE USED AS A MELT
4 IN FORM OF A MEMBRANE
5 IRRADIATION BY, OR APPLICATION OF, ELECTRICAL, MAGNETIC OR WAVE ENERGY
6 CONTROL RESPONSIVE TO SENSED CONDITION
7 BIOSPECIFIC MATERIAL, OR PRODUCED BY ENZYME OR MICROORGANISM
8 FORMING OR TREATING A SPHERE, PROCESS ONLY
9 .Forming other than by liquid immersion
10 .Treating preformed sphere only
11 INCLUDING ION EXCHANGING, EXCEPT ZEOLITES OR PRODUCT THEREOF
12 .For regenerating or rehabilitating catalyst or sorbent
20 REGENERATING OR REHABILITATING CATALYST OR SORBENT

REGENERATING OR REHABILITATING CATALYST OR SORBENT
21 .Including segregation of diverse particles
22 .Treating with a liquid or treating in a liquid phase, including dissolved or suspended
23 .."Wet air combustion" oxidation of material submerged in liquid
24 ..Including intended dissolution or precipitation of a substantial amount of an ingredient of the ultimate composition
25 ..Using salt or alkaline substance
26 ...Ammonia or derivative thereof
27 ..Using acid
28 ...Organic
29 ..Organic liquid
30 ...And gas addition thereto
31 ...Hydrocarbon
32 ...Halogen containing
33 ...Oxygen containing
34 .Gas or vapor treating
35 ..Using halogen containing substance including liquids vaporizable upon contacting spent catalyst or sorbent
36 ...Fluorine containing
37 ...Simultaneously or subsequently adding free oxygen or use of oxyhalogen compound
38 ..Treating with free oxygen containing gas
39 ...And forming useful by-product
40 ...And adding heat by admixing solid heat carrier
41 ...In gaseous suspension (e.g., fluidized bed, etc.)
42 ....And substantially complete oxidation of carbon monoxide to carbon dioxide within regeneration zone
43 ....Plural distinct serial combustion stages
44 ....Indirectly heating or cooling spent material within regeneration zone or prior to entry into regeneration zone
45 ...Moving bed (e.g., vertically or horizontally, etc., moving bulk material)
46 ....Generally concurrent flow of oxygen containing gas and material
47 ....Generally countercurrent flow of oxygen containing gas and material
48 ....Generally transverse (i.e., lateral) flow of oxygen containing gas relative to material
49 ...Plural distinct oxidation stages
50 ...Reactive gas treating after oxidation
51 ...Oxidation gas comprises essentially steam and oxygen
52 ...With control of oxygen content in oxidation gas
53 ..Elemental hydrogen
54 ..Ammonia or derivative thereof
55 ..Steam
56 .By heat
60 ZEOLITE OR CLAY, INCLUDING GALLIUM ANALOGS
61 .Gallium containing
62 .Including organic component
63 .And additional AL or Si containing component
64 ..Zeolite
65 ...And rare earth metal (Sc, Y or Lanthanide)containing
66 ...And Group VIII (Iron Group or Platinum Group) metal containing
67 ...Mixed zeolites
68 ...Mixed with clay
69 ...Heterogeneous arrangement
70 ...Gelling in presence of zeolite
71 ...ZSM Type
72 ..Mixed clays
73 .And Group III or rare earth metal (Al, Ga, In, Tl, Sc, Y) or Lanthanide containing
74 .And Group VIII (Iron Group or Platinum Group) containing
75 .Including chemical reduction of exchanged cation
76 .Coprecipitation
77 .ZSM type
78 .Mordenite type
79 .Faujasite type (e.g., X or Y, etc.)
80 .Clay
81 ..Acid treating
82 ...Plural acid treatment
83 ...Sulfuric or hydrochloric acid
84 ..And metal, metal oxide, or metal hydroxide
85 .Activating treatment
86 ..Utilizing ammonium ions
87 .Support per se
100 CATALYST OR PRECURSOR THEREFOR
101 .Making catalytic electrode, process only
102 .Plural component system comprising A - Group I to IV metal hydride or organometallic compound - and B - Group IV to VIII metal, lanthanide or actinde compound - (i.e., alkali metal, Ag, Au, Cu, alkaline earth metal, Be, Mg, Zn, Cd, Hg, Sc, Y, Al, Ga, In, Tl, Ti, Zn, Hf, Ge, Sn or Pb hydride or organometallic compound and Ti, Zr, Hf, Ge, Sn, Pb, V, Nb, Ta, As, Sb, Bi, Cr, Mo, W, Po, Mn, Tc, Re, Iron group, Platinum group, atomic number 57 to 71 inclusive or atomic number 89 or higher compound)
103 ..Component A metal is Group IA, IIA or IIIA and component B metal is Group IVB to VIIB or VIII (i.e., alkali metal, alkaline earth Metal, Be, Mg, Al, Ga, In or Tl and Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn, Tc, Re, iron Group or Platinum group) (e.g., Ziegler Catalyst, etc.)
104 ...Preparing catalyst or precursor
105 ....Including comminuting (e.g., milling, grinding, etc.)
106 ....Fluidized bed feature
107 ....Including heating to higher temperature
108 ....Utilizing hydrocarbon containing unsaturation not part of benzene ring
109 ....Utilizing high molecular weight synthetic polymer
110 ....Including plural additions of Component A
111 ....Utilizing water or compound containing hydroxy bonded to carbon
112 ...Containing iodine
113 ...Containing two or more different Component B metals
114 ...Containing hydrides or organometallic of two or more different Component A metals
115 ....Magnesium containing
116 .....And compound containing Silicon-Hydrogen or Silicon-Carbon bond

CATALYST OR PRECURSOR THEREFOR
.Plural component system comprising A - Group I to IV metal hydride or organometallic compound - and B - Group IV to VIII metal, lanthanide or actinde compound - (i.e., alkali metal, Ag, Au, Cu, alkaline earth metal, Be, Mg, Zn, Cd, Hg, Sc, Y, Al, Ga, In, Tl, Ti, Zn, Hf, Ge, Sn or Pb hydride or organometallic compound and Ti, Zr, Hf, Ge, Sn, Pb, V, Nb, Ta, As, Sb, Bi, Cr, Mo, W, Po, Mn, Tc, Re, Iron group, Platinum group, atomic number 57 to 71 inclusive or atomic number 89 or higher compound)
..Component A metal is Group IA, IIA or IIIA and component B metal is Group IVB to VIIB or VIII (i.e., alkali metal, alkaline earth Metal, Be, Mg, Al, Ga, In or Tl and Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn, Tc, Re, iron Group or Platinum group) (e.g., Ziegler Catalyst, etc.)
117 ...Component B metal is other than titanium or vanadium
118 ...And a third component C (i.e., an additive other than a saturated hydrocarbon or an aromatic hydrocarbon free of aliphatic or cycloaliphatic unsaturation)
119 ....Non-metallic inorganic halogen containing
120 ....Elemental oxygen or nonmetallic inorganic oxygen-containing material, other than water
121 ....Nonmetallic organic phosphorus containing
122 ....Nonmetallic organic sulfur containing
123 ....Nonmetallic organic nitrogen containing
124 .....Including element in addition to carbon, hydrogen, and nitrogen (e.g, nitro, etc.)
125 ....Nonmetallic organic oxygen containing
126 .....Ether
127 .....Ester
128 ....Nonmetallic organic halide
129 ....Metal compound other than which could be produced in situ by reaction of a Group IA, IIA, or Group IIIA metal compound present with a titanium or vanadium compound present
130 .....Lead compound
131 .....Tin compound
132 .....Aluminum compound
133 .....Magnesium compound
134 ......Halogen containing
150 .Organic compound containing
151 ..Method of making including comminuting of solid material (e.g., grinding, crushing, etc.)
152 ..Organic compound including carbon-metal bond
153 ...Diverse metals bonded to carbon
154 ...Including metal compound containing different metal than that bonded to carbon
155 ...Including phosphorus or sulfur or compound containing nitrogen or phosphorus or sulfur
156 ...Including alcohol, phenol, or ether
157 ...Alkali metal bonded to carbon
158 ..Compound with Silicon-hydrogen bond or organic compound with silicon-carbon bond
159 ..Resin, natural or synthetic, polysaccharide or polypeptide
160 ..Peroxygen compound containing
161 ..With metal carbonyl or carbon monoxide complex
162 ..Organic phosphorus or nitrogen, except the ammonium ion
163 ...Phthalocyanine
164 ...Quaternary ammonium or phosphonium
165 ...Copper containing
166 ...Rhodium containing
167 ...Organic nitrogen containing
168 ..Organic sulfur compound
169 ..With metal halide
170 ..With metal carboxylate or metal compound and carboxylic acid or anhydride
171 ..Organic compound contains metal (e.g., Na-O-Ethyl, etc.)
172 ..Alcohol, phenol, ether, aldehyde or ketone
173 ..Elemental metal in organic dispersing medium
174 .Inorganic carbon containing
175 ..Cyanide
176 ..Hydroxycarbonate
177 ..Carbide
178 ...Silicon carbide
179 ....Group VA (N, P, As, Sb, Bi) containing
180 ..Elemental carbon
181 ...And halogen containing
182 ...And metal, metal oxide, or metal hydroxide
183 ....Of Group II (i.e., alkaline earth, Be, Mg, Zn, Cd or Hg)
184 ....Of Group I (i.e., alkali, Ag, Au or Cu)
185 ....Of Group VIII (i.e., iron or platinum group)
200 .Nitrogen compound containing
201 ..Nitrate
202 .Boron or compound containing same
203 ..Boron halide
204 ..And Group VI metal containing (i.e., Cr, Mo, W or Po)
205 ...And bismuth containing
206 ...Molybdenum containing
207 ..And Group VIII metal containing (i.e., iron or platinum group)
208 .Phosphorus or compound containing same
209 ..And vanadium containing
210 ..And Group VI metal (i.e., Cr, Mo, W or Po,)
211 ...Molybdenum
212 ....And bismuth containing
213 ...And Group VIII metal containing (i.e., iron or platinum group)
214 ..And silicon containing
215 .Selenium or tellurium or compound containing same
216 .Sulfur or compound containing same
217 ..Sulfate
218 ...And Group I metal containing (i.e., alkali, Ag, Au or Cu)
219 ..And Group VI metal containing (i.e., Cr, Mo, W or Po)
220 ...Molybdenum containing
221 ...And Group VIII metal containing (i.e., iron or platinum group)
222 ..And Group VIII metal containing (i.e., iron or platinum group)
223 ...Platinum group (i.e., Ru, Rh, Pd, Os, Ir, Pt)

CATALYST OR PRECURSOR THEREFOR

224 .Halogen or compound containing same
225 ..Copper halide
226 ..And Group II metal (i.e., alkaline earth, Be, Mg, Zn Cd or Hg)
227 ..And Group IV metal (i.e., Ti, Zr, Hf, Ge, Sn or Pb)
228 ..And Group VI metal (i.e., Cr, Mo, W or Po)
229 ..And Group VIII metal (i.e., iron or platinum group)
230 ...Platinum group (i.e., Ru, Rh, Pd, Os, Ir or Pt)
231 ..And Group III metal (i.e., Sc, Y, Al, Ga, In or Tl)
232 .Silicon containing or process of making
233 ..Forming silica gel
234 ...Coprecipitating
235 ....Group III or rare earth metal, metal oxide, or metal hydroxide containing (i.e., Sc, Y, Al, Ga, In, Tl or lanthanide)
236 ....Group IV metal, metal oxide, or metal hydroxide, (i.e., Ti, Zr, Hf, Ge, Sn or Pb)
237 ...Metal, metal oxide, or metal hydroxide containing
238 ....Of Group III metal (i.e., Sc, Y, Al, Ga, In or Tl)
239 ....Of Group IV metal (i.e., Ti, Zr, Hf, Ge, Sn or Pb)
240 ..With metal, metal oxide, or metal hydroxide
241 ...Of Group VII (i.e., Mn, Tc or Re)
242 ...Of Group IV (i.e., Ti, Zr, Hf, Ge, Sn or Pb)
243 ...Of Group I (i.e., Alkali, Ag, Au or Cu)
244 ....Of copper
245 .....And group VIII metal containing (i.e., iron or platinum group)
246 ...Of Group V (i.e., V, Nb, Ta, As, Sb or Bi)
247 ....Of vanadium
248 .....And Group VI metal (i.e., Cr, Mo., W or Po)
249 ....Of antimony or bismuth
250 ...Of Group II (i.e., alkaline earth, Be, Mg, Zn, Cd or Hg)
251 ....Magnesium
252 .....And Group VIII metal containing (i.e., iron or platinum group)
253 ....Of zinc, cadmium, or mercury
254 ...Of Group VI (i.e., Cr, Mo, W or Po)
255 ....Molybdenum
256 ....Chromium
257 .....And Group VIII metal containing (i.e., iron or platinum group)
258 ...Of Group VIII (i.e., iron or platinum group)
259 ....Nickel
260 ....Cobalt
261 ....Platinum group (i.e., Ru, Rh, Pd, Os, Ir or Pt)
262 .....Platinum or palladium
263 ...Of Group III or lanthanide group (i.e., Sc, Y, Al, Ga, In, Tl, or atomic number 57 to 71 inclusive)
300 .Metal, metal oxide or metal hydroxide
301 ..Raney type
302 ..Of lanthanide series (i.e., atomic number 57 to 71 inclusive)
303 ...Lanthanum
304 ...Cerium
305 ..Of Group VI (i.e., Cr, Mo, W or Po)
306 ...And Group II metal containing (i.e., alkaline earth, Be, Mg, Zn, Cd or Hg)
307 ....Zinc
308 ...And Group IV metal containing (i.e., Ti, Zr, Hf, Ge, Sn or Pb)
309 ....Titanium containing
310 ....Tin containing
311 ...And Group V metal containing (i.e., V, Nb, Ta, As, Sb or Bi)
312 ....Vanadium containing
313 ...And Group VIII metal containing (i.e., iron or platinum group)
314 ....Iron group metal and Group III metal containing (i.e., Fe, Co or Ni and Sc, Y, Al, Ga, In or Tl)
315 ....Nickel containing
316 ....Iron containing
317 ...And Group I containing (i.e., alkali, Ag, Au or Cu)
318 ....Copper containing
319 ...Of chromium
320 ....And Group III metal containing (i.e., Sc, Y, Al, Ga, In or Tl)
321 ...Of molybdenum
322 ....And Group III metal containing (i.e., Sc, Y, Al, Ga, In or Tl)
323 ...And Group III metal containing (i.e., Sc, Y, Al, Ga, In or Tl)
324 ..Of manganese
325 ..Of Group VIII (i.e., iron or platinum group)
326 ...Of platinum group metal and of iron group (i.e., Ru, Rh, Pd, Os, Ir, or Pt and Fe, Co or Ni)
327 ....And Group III metal containing (i.e., Sc, Y, Al, Ga, In or Tl)
328 ...And Group II metal containing (i.e., alkaline earth, Be, Mg, Zn, Cd or Hg)
329 ....Zinc containing
330 ...And Group I metal containing (i.e., alkali, Ag, Au or Cu)
331 ....Copper containing
332 ...And Group III metal containing (i.e., Sc, Y, Al, Ga, In or Tl)
333 ....Of palladium
334 ....Of platinum
335 ....Of nickel
336 ....Of iron
337 ...Of nickel
338 ...Of iron
339 ...Of palladium or platinum
340 ..Of Group II (i.e., alkaline earth, Be, Mg, Zn, Cd or Hg)
341 ...And Group III metal containing (i.e., Sc, Y, Al, Ga, In or Tl)
342 ....Of zinc
343 ...Of zinc
344 ..Of Group I (i.e., alkali, Ag, Au or Cu)
345 ...Of copper
346 ....And Group III metal containing (i.e., Sc, Y, Al, Ga, In or Tl)
347 ...Of silver
348 ....And Group III metal containing (i.e., Sc, Y, Al, Ga, In or Tl)
349 ..Of Group IV (i.e., Ti, Zr, Hf, Ge, Sn or Pb)
350 ...Of titanium
351 ....And Group III metal containing (i.e., Sc, Y, Al, Ga, In or Tl)
352 ...Of tin
353 ..Of Group V (i.e., V, Nb, Ta, As, Sb or Bi)
354 ...And Group III metal containing (i.e., Sc, Y, Al, Ga, In or Tl)

CATALYST OR PRECURSOR THEREFOR
.Metal, metal oxide or metal hydroxide
355 ..Of Group III (i.e., Sc, Y, Al, Ga, In or Tl)
400 SOLID SORBENT
401 .Organic
402 ..Synthetic resin
403 ..Protein
404 ..Carbohydrate
405 .Inorganic gel containing
406 .Having specifically intended extraneously added iron group (i.e., Fe, Co, Ni) component
407 .Silicon containing
408 ..Acid treated
409 ..Quartz
410 ..Magnesium silicate (e.g., abestos, vermiculite, etc.)
411 ..Having extraneously added alkali metal, or alkaline earth metal
412 ..Diatomaceous earth
413 ..Free carbon containing
414 .Aluminum containing
415 ..Alumina (i.e., dialuminum trioxide)
416 .Free carbon containing
417 ..And specified adde active sorbent material
418 ..Process utilizing solid or liquid source carbonizable material, or product thereof
419 ...Producing diverse useful byproduct
420 ...Temperature vs. time factor
421 ...Including recycling product or intermediate thereof to prior stage of process
422 ...Including diverting part of source to provide fuel for process
423 ...Adding nongaseous inorganic, or inorganic yielding component, prior to or during process
424 ....Zinc containing
425 ....Phosphorus containing
426 ....Acid
427 ....Alkali metal, alkaline earth metal, or magnesium containing
428 ...Including pelletizing or briquetting and subsequently comminuting
429 ....Using carbonaceous binder
430 ...Treating with gas
431 ....Fluidized bed having specified parameter
432 ....Specified atmosphere
433 .....Including free oxygen
434 ......And subsequent diverse gas
435 .....Exposure to hot flue or exhaust gas
436 ...Diverse temperatures
437 ...Specified source (e.g., peach pit, etc.)
438 ..Chemically reducing an oxide or product thereof
439 MISCELLANEOUS (E.G., CARRIER OR SUPPORT PER SE OR PROCESS OF MAKING, ETC.)

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CROSS-REFERENCE ART COLLECTIONS

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500 STABILIZED
501 .For multi-regenerability
502 .Cystallinity
503 .Crush strength
504 .Abrasion resistance
506 METHOD OF MAKING INORGANIC COMPOSITION UTILIZING ORGANIC COMPOUND (EXCEPT FORMIC, ACETIC, OR OXALIC ACID OR SALT THEREOF)
507 .Synthetic resin, natural resin, polysaccaride, or polypeptide
508 .Sulfur containing organic compound
509 .Nitrogen containing organic compound
510 ..Also containing hydroxyl bonded to carbon, e.g., carboxylic acid, etc.
511 ..Two or more nitrogen atoms bonded to different carbon atoms
512 .Carboxylic acid or salt thereof other than formic, acetic, or oxalic acid
513 .Alcohol, phenol, or ether or metallate thereof
514 PROCESS APPLICABLE EITHER TO PREPARING OR TO REGENERATING OR TO REHABILITATING CATALYST OR SORBENT
515 SPECIFIC CONTAMINANT REMOVAL
516 .Metal contaminant removal
517 .Sulfur or sulfur compound removal
518 .Carbonaceous contaminant
519 REAGENT GRADE (E.G., ULTRA PURE)
520 SUPPRESSED SIDE REACTIONS
521 METAL CONTAMINANT PASSIVATION
522 RADIANT OR WAVE ENERGY ACTIVATED
523 MISCELLANEOUS SPECIFIC TECHNIQUES OF GENERAL APPLICABILITY
524 SPINEL
525 PEROVSKITE
526 SORBENT FOR FLUID STORAGE, OTHER THAN AN ALLOY FOR HYDROGEN STORAGE
527 PECULIAR STRUCTURE OR PHYSICAL FORM

CLASS 503 RECORD RECEIVER HAVING PLURAL LEAVES OR A COLORLESS COLOR FORMER, METHOD OF USE OR DEVELOPER THEREFOR

200 HAVING A COLORLESS COLOR-FORMER, DEVELOPER THEREFOR, OR METHOD OF USE
201 .Method of use, kit, or combined with marking instrument or organ
202 .Color developed by mere decomposition of color-former
203 .Duplicating master
204 .Plural colors or plural diverse systems
205 .Having a color desensitizer
206 .Component noncoextensive with substrate
207 .Having nonreactant particles of defined size
208 .Having constituent defined in terms of melting temperature
209 .Having nonchromogenic liquid spread-control or transfer-improving agent or component, color modifier, stabilizer or preservative
210 .Heavy metal reactant
211 ..Metal of atomic number 22-30
212 ...Zinc
213 .Identified solvent or dispersant for color-former, other than mere mineral oil
214 .Identified reactant isolating material or capsule wall material or binder resin
215 ..Synthetic resin capsule walls
216 .Identified organic electron acceptor (developer) other than phenolic resin
217 ..And identified color-former
218 .Identified color-former
219 ..And identified inorganic electron acceptor (developer), other than mere clay
220 ..Furanone moiety-containing
221 ...Fluoran or derivative
222 ....Molecule having plural fluorans or more than three rings fused together
223 ..Azole moiety-containing
224 ..Polyphenylmethane moiety-containing
225 .Identified electron acceptor (developer)
226 .Spatial relationship specified between color-former and developer
227 HAVING PLURAL INTERACTIVE LEAVES

CLASS 505 SUPERCONDUCTOR TECHNOLOGY - APPARATUS, MATERIAL, PROCESS

DECEMBER 1990

1 MATERIAL, PROCESS, APPARATUS, FUNCTIONING ABOVE 30 K

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CROSS-REFERENCE ART COLLECTIONS

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A. Involving High Temperature Material (Tc above 30 degree K)

700 HIGH Tc (ABOVE 30 DEGREE K) SUPERCONDUCTING DEVICE, ARTICLE OR STRUCTURED STOCK

701 .Coated or thin film device (i.e., active or passive)

702 ..Josephson junction present

703 ..Microelectronic device with superconducting conduction line

704 .Wire, fiber or cable

705 ..Magnetic coil

706 .Contact pads or leads bonded to superconductor

725 PROCESS OF MAKING OR TREATING HIGH Tc (ABOVE 30 DEGREE K) SUPERCONDUCTING SHAPED MATERIAL, ARTICLE OR DEVICE

726 .Measuring or testing of superconducting property

727 .Using magnetic field

728 .Etching

729 .Growing single crystal (e.g., epitaxy, bulk)

730 .Vacuum treating or coating

731 ..Sputter coating

732 ..Evaporative coating with superconducting material

733 .Rapid solidification (e.g., quenching, gas-atomizing, melt-spinning, roller-quenching)

734 .From organometallic precursors (e.g., acetylacetonates)

735 ..By sol-gel process

736 .From free metal precursors

737 .From inorganic salt precursors (e.g., nitrates)

738 ..By precipitating

739 .Molding, coating, shaping or casting of superconducting material

740 ..To form wire or fiber

741 ..Coating or casting onto a substrate (e.g., screen printing, tape casting)

742 .Annealing

775 HIGH Tc (ABOVE 30 DEGREE K) SUPERCONDUCTING MATERIAL

776 .Containing transition metal oxide with rare earth or alkaline earth

777 ..Lanthanum (La)-(e.g., La2Cu04)

778 ...Alkaline earth (i.e., Ca,Sr,Ba,Ra)- e.g., La(2-x)Ba(x)Cu04

779 ..Other rare earth (i.e., Sc,Y,Ce,Pr,Nd,Pm,Sm,Eu,Gd,Tb,Dy,Ho,Er,Tm,Yb,Lu) and alkaline earth (i.e., Ca,Sr,Ba,Ra)

780 ...Yttrium(Y) and barium(Ba)-(e.g., YBa2Cu307)

781 ....Noble metal (i.e., Ag,Au,Os,Ir,Pt.Ru,Rh,Pd) or chromium(Cr), manganese(Mn), iron(Fe), cobalt(Co), or nickel(Ni)- e.g., YBa2Cu(3-x)Fe(x)0(y)

782 ..Bismuth(Bi)-(e.g., BiCaSrCu0)

783 ..Thallium(Tl)-(e.g., Tl2CaBaCu308)

784 .Bismuth(Bi)-(e.g., BaKBi0)

785 .Composition containing superconducting material and diverse nonsuperconducting material

B. Involving Low Temperature Superconductors (Tc at or below 30 degree K)

800 MATERIAL, PER SE, PROCESS OF MAKING SAME

801 .Composition: (Classes 75, 252, 501)

802 ..Organic

803 ..Magnetic

804 ..Amorphous alloy

805 ..Alloy or metallic: (Class 420,420/901)

806 ...Niobium base (Nb)

807 ..Powder: (Class 75)

808 ..Liquid crystal: (Class 252)

809 ..Ceramic: (Class 501)

810 .Compound: (Class 423)

811 ..Organic: (Classes 520-570)

812 .Stock: (Class 428, 428/930)

813 ..Wire, tape, or film

814 ..Treated metal: (Class 148/400+)

815 .Process of making, per se

816 ..Sputtering, including coating, forming, or etching (Class 204/192.24)

817 ...Forming Josephson element

818 ..Coating: (Classes 204, 427/62)

819 ...Vapor deposition

820 ...And etching

821 ...Wire

822 ..Shaping: (Classes 148, 264)

823 ..Powder metallurgy: (Class 419)

824 ..Battery, thermo or photo-electric: (Class 136)

825 APPARATUS, per se, DEVICE, per se, OR PROCESS OF MAKING OR OPERATING SAME

826 .Coating: (Class 118)

827 .Code converter: (Class 340)

828 .Modulator: (Class 332), demodulator, or detector: (Class 329)

829 .Electrical computer or data processing system (Class 364)

830 .Electrical pulse counter, pulse divider or shift register: (Class 377)

831 .Static information storage system or device: (Class 365, 365/160)

832 ..Josephson junction type: (Class 365/162)

833 ..Thin film type: (Class 365/161)

834 ...Plural (e.g., memory matrix, etc.): (Class 365/161)

835 ....Content addressed (i.e., associative memory type): (Class 365/49, 161)

836 ....Location addressed (i.e., word organized memory type (Class 365/161)

837 ....Random access (i.e., bit organized memory type): (Class 365/161)

838 ..Plural (e.g., memory matrix, etc.): (Class 365/160)

839 ...Content addressed (i.e., associative memory type): (Class 365/160)

840 ...Location addressed (i.e., word organized memory type): (Class 365/160)

841 ...Random access (i.e., bit organized memory type): (Class 365/160)

842 .Measuring and testing: (Classes 73, 324, 356, and 374)

843 ..Electrical: (Class 324)

844 ...Nuclear magnetic resonance (Nmr) system or device: (Class 324)

845 ...Magnetometer: (Class 324/248)

846 ....Using superconductive quantum interference device (i.e., SQUID): (Class 324/248)

847 ..Thermal: (Class 374)

848 .Radiant energy application: (Class 250)

849 ..Infrared responsive electric signalling: (Class 250/338+)

850 .Protective circuit: (Class 361/19)

851 .Control circuit for electromagnetic device: (Class 361/141)

852 .Electric motor control: (Class 318)

853 .Oscillator: (Class 331)

APPARATUS, per se, DEVICE, per se, OR PROCESS OF MAKING OR OPERATING SAME
.Oscillator: (Class 331)
854 ..With solid state active element: (Class 331/107S)
855 .Amplifier: (Class 330)
856 .Electrical transmission or interconnection system: (Class 307)
857 ..Nonlinear solid state device system or circuit: (Class 307/200+)
858 ...Digital logic: (Class 307/476)
859 ....Function of AND, OR, NAND, NOR or NOT: (Class 307/462)
860 ...Gating (i.e., switching) circuit: (Class 307/245)
861 ....With Josephson junction: (Class 307/245)
862 ....With thin film device: (Class 307/245)
863 ...Stable state circuit for signal shaping, converting, or generating: (Class 307/277)
864 ....With Josephson junction: (Class 307/277)
865 ...With Josephson junction: (Class 307/306)
866 .Wave transmission line, network, waveguide, or microwave storage device: (Class 333/99S)
867 .Electric power conversion system: (Class 363)
868 ..Current conversion: (Class 363/14)
869 .Power supply, regulation, or energy storage system: (Class 323)
870 ..Including transformer or inductor: (Class 323/360)
871 .Magnetic lens: (Class 250/396)
872 .Magnetic field shield: (Class 307/91)
873 .Active solid state device: (Class 357)
874 ..With Josephson junction (e.g., SQUID, etc.): (Class 375/5)
875 ..Combined with housing and cryogenic fluid cooling: (Class 357/83)
876 .Electrical generator or motor structure: (Class 310)
877 ..Rotary dynamoelectric type: (Class 310/40+)
878 ...With cooling: (Class 310/52+)
879 .Magnet or electromagnet: (Class 335/216)
880 .Inductor: (Class 336/DIG1)
881 .Resistance device responsive to magnetic field: (Class 338/32S)
882 .Circuit maker or breaker: (Class 200)
883 .Housing and mounting assembly with plural diverse electrical components: (Class 361/331+)
884 .Conductor: (Class 174)
885 ..Cooling, or feeding, circulating, or distributing fluid; in superconductive apparatus: (Class 174/15CA)
886 ...Cable: (Class 174/15S)
887 ..Conductor structure: (Class 174/126S and 128S)
888 .Refrigeration: (Class 62)
889 ..Utilizing rare earth material
890 ..Heat pipe device
891 ..Magnetic or electrical effect cooling
892 ..Magnetic device cooling
893 ...Spectrometer
894 ..Cyclic cryogenic system (e.g., Sterling, Gifford-McMahon, etc.)
895 ...With regenerative heat exchanger
896 ..Special refrigerant compound
897 ..Cryogenic media transfer
898 ..Cryogenic envelope
899 ..Method of cooling
900 .Heat exchange: (Class 165)
901 ..Heat pipe
902 .Railway (e.g., rapid transit, etc.): (Class 104)
903 ..Suspension (e.g., magnetic, electrodynamic, etc.)
904 ...Guidance means (i.e., in addition to the track)
905 ...Motor structure
906 ...Switching device (i.e., electrical not railway stock diverting)
907 ...Support structure
908 ...Method of operation
909 .Power plant: (Class 60)
910 .Pump: (Class 417)
911 .Fluid reaction surface (i.e., impeller): (Class 416)
912 .Metal founding: (Class 164)
913 ..Casting process
914 ...Using magnetic or electric field
915 ...Making composite product
916 ...Continuous casting
917 .Mechanically manufacturing superconductor: (Classes 29, 72, and 228)
918 ..With metallurgical heat treating
919 ...Reactive formation of superconducting intermetallic compound
920 ....Utilizing diffusion barrier
921 ....Metal working prior to treating
922 ..Making Josephson junction device
923 ..Making semiconductor device (e.g., integrated circuit, etc.)
924 ..Making superconductive magnet or coil
925 ..Making superconductive joint
926 ..Mechanically joining superconductive members
927 ..Metallurgically bonding superconductive members
928 ..Metal deforming
929 ...By extruding
930 ...By drawing
931 .Classifying, separating, and assorting solids using magnetism: (Class 209)
932 ..Separating diverse particulates
933 ...In liquid slurry

CLASS 512 PERFUME COMPOSITIONS

1 PERFUME COMPOSITIONS
2 .With preservative, stabilizer, or fixative
3 .With specified extender
4 .Nonliquid or encapsulated
5 .Animal or plant extract active ingredient
6 .Cyano containing active ingredient
7 .Boron, metal, or acyclic sulfur containing active ingredient
8 .Ring containing active ingredient
9 ..Spiro
10 ..Nitrogen in the ring
11 ..Chalcogen in the ring
12 ...Plural chalcogens in the ring
13 ...Polycyclo ring system having the chalcogen containing ring as one of the cyclos
14 ..Polycyclo carbocyclic ring system
15 ...Oxygen double bonded directly to the ring system
16 ...Carbonyl bonded directly to the ring system
17 ....The ring system is bicyclo
18 ...Carbonyl attached indirectly to the ring system by nonionic bonding
19 ...Oxygen single bonded directly to the ring system
20 ..Benzene ring
21 ...Acyclic carbonyl containing
22 ..Six-membered alicyclic ring
23 ...Oxygen bonded directly to the ring
24 ...Carbonyl bonded directly to the ring
25 .Oxygen containing active ingredient
26 ..The oxygen is part of a carbonyl group
27 ...The carbonyl is part of an aldehyde or ketone group

CLASS 514 DRUG, BIO-AFFECTING AND BODY TREATING COMPOSITIONS

Class 514 is to be considered an integral part of Class 424 (after subclass 197.1) and follows the schedule hierarchy, retaining all pertinent definitions and class lines of Class 424.

1 DESIGNATED ORGANIC ACTIVE INGREDIENT CONTAINING (DOAI)
2 .Peptide containing (e.g., protein, peptones, fibrinogen, etc.) DOAI
3 ..Insulin or derivative
4 ...With an additional active ingredient
5 ..Iodine containing
6 ..Heavy metal containing (e.g., hemoglobin, etc.)
7 ..Phosphorus containing
8 ..Glycoprotein (carbohydrate containing)
9 ..Cyclopeptides
10 ...Bicyclic
11 ...Monocyclic
12 ..25 or more peptide repeating units in known peptide chain structure
13 ..16 to 24 peptide repeating units in known peptide chain
14 ..12 to 15 peptide repeating units in known peptide chain
15 ..9 to 11 peptide repeating units in known peptide chain
16 ..7 or 8 peptide repeating units in known peptide chain
17 ..5 or 6 peptide repeating units in known peptide chain
18 ..3 or 4 peptide repeating units in known peptide chain
19 ..2 peptide repeating units in known peptide chain
20 ...Guanidine containing
21 ..Produced by or extracted from animal tissue

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NOTE: See subclasses 800-809
for art collections pertain-
ing to subclasses 1-21. ....
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22 .Lignin or derivative DOAI
23 .Carbohydrate (i.e., saccharide radical containing) DOAI
24 ..S-glycoside
25 ..O-glycoside
26 ...Cyclopentanohydrophenanthrene ring system
27 ...Oxygen of the saccharide radical bonded directly to a nonsaccharide hetero ring or a polycyclo ring system which contains a nonsaccharide hetero ring
28 ....The hetero ring has 8 or more ring carbons
29 .....The hetero ring has exactly 13 ring carbons (e.g., erythromycin, etc.)
30 .....The hetero ring has exactly 15 ring carbons
31 .....The hetero ring has 20 or more ring carbons (e.g., nystatin, etc.)
32 ...Oxygen of the saccharide radical bonded to a nonsaccharide hetero ring by acyclic carbon bonding
33 ...Oxygen of the saccharide radical bonded directly to a polycyclo ring system of three or more carbocyclic rings
34 ....Oxygen of the saccharide radical bonded directly to a polycyclo ring system of four carbocyclic rings (e.g., daunomycin, etc.)
35 ...Oxygen of the saccharide radical bonded directly to a cyclohexyl ring
36 ....Two or more nitrogen atoms bonded directly to the cyclohexyl ring
37 .....The nitrogen atoms are in N-C(=N)-N groups (e.g., streptomycin, etc.)
38 .....Two saccharide radicals bonded through only oxygen to adjacent ring carbons of the cyclohexyl ring
39 ......Three or more saccharide radicals (e.g., neomycin, etc.)
40 .....Two saccharide radicals bonded through only oxygen to 4- and 6-positions of the cyclohexyl ring
41 ......Kanamycin or derivative
42 ..N-glycoside
43 ...Nitrogen containing hetero ring
44 ....Polynucleotide (e.g., RNA, DNA, etc.)
45 ....Purines (including hydrogenated) (e.g., adenine, guanine, etc.)
46 .....Adenosine or derivative
47 ......Phosphorus containing
48 .....Phosphorus containing
49 ....Pyrimidines (including hydrogenated) (e.g., cytosine, etc.)
50 .....2,4-diketone pyrimidine or derivative (e.g., uracil, etc.)
51 ......Phosphorus containing
52 ....Phosphorus containing (e.g., Vitamin B12, etc.)
53 ..Dissacharide
54 ..Polysaccharide
55 ...Chitin or derivative
56 ...Heparin or derivative
57 ...Cellulose or derivative
58 ...Dextrin or derivative
59 ...Dextran or derivative
60 ...Starch or derivative
61 ...Tri- or tetrasaccharide
62 ..Glucosamine or derivative
63 .Silicon containing DOAI
64 .Boron containing DOAI
65 .Pyrethrum plant derived material or plant derived rotenone compound containing DOAI
66 ..With heterocyclic compound
67 ...Methylenedioxyphenyl group containing (e.g., piperonyl butoxide, etc.)
68 ..With carbocyclic acid ester
69 ..With carboxylic acid metal salt
70 ..With organic nitrogen containing compound
71 ...Sulfur containing organic nitrogen compound
72 ..With organic oxygen containing compound
73 ...Phosphorus or halogen containing organic oxygen compound
74 ..With hydrocarbon or halohydrocarbon
75 .Phosphorus containing other than solely as part of an inorganic ion in an addition salt DOAI
76 ..Amine addition salt of organic phosphorus containing acid
77 ..Inner salt (e.g., betaine, etc.)
78 ...Lecithins
79 ..Nitrogen containing hetero ring
80 ...Polycylo ring system having a ring nitrogen in the system
81 ....Nonshared hetero atoms in at least two rings of the polycyclo ring system

.Phosphorus containing other than solely as part of an inorganic ion in an addition salt DOAI
..Nitrogen containing hetero ring
...Polycylo ring system having a ring nitrogen in the system
82 ....Quinolinyl or isoquinolinyl (including hydrogenated)
83 .. Hetero ring is three-membered consisting of one nitrogen and two carbons
84 ...Hetero ring is six-membered consisting of three nitrogens and three carbons
85 ...Hetero ring is six-membered consisting of two nitrogens and four carbons
86 ....Nitrogen atoms occupy 1 and 3-positions
87 .....PX- bonded directly to 1,3-diazine at 2- position (X is chalcogen)
88 .....Two or more PX- groups attached to the same 1,3-diazine (X is chalcogen)
89 ...Hetero ring is six-membered and includes only one ring nitrogen
90 ....Chalcogen in the six-membered hetero ring
91 ...Hetero ring is five-membered
92 ....Two or more hetero atoms in the five-membered ring
93 .....Triazoles (including hydrogenated)
94 .....Diazoles (including hydrogenated)
95 ..Sulfur containing hetero ring
96 ...Polycyclo ring system having the hetero ring as one of the cyclos
97 ...Two or more sulfurs in the hetero ring
98 ...Oxygen in the hetero ring
99 ..Oxygen containing hetero ring
100 ...Polycyclo ring system having the hetero ring as one of the cyclos
101 ...Two or more oxygen in the hetero ring
102 ..Two or more phosphorus atoms directly or indirectly bonded together by only covalent bonds
103 ...Phosphorus acid ester of polyhydric alcohol or thioalcohol (e.g., P-X-R-X-P group, etc., wherein X is chalcogen and R is the residue of the polyhydric alcohol or thioalcohol)
104 ....Benzene ring in the alcohol moiety
105 ...Phosphorus is part of a ring
106 ...P-O-P or P-S-P containing (e.g., anhydrides, etc.)
107 ...Benzene ring containing
108 ...Acyclic and contains at least one carbon atom between the phosphorus atoms
109 ..P-X-X containing (X is chalcogen)
110 ..Phosphorus is part of a ring
111 ...Polycyclo ring system having the phosphorus containing ring as one of the cyclos
112 ..Cyano or isocyano containing
113 ...Cyano or isocyano bonded directly to a benzene ring
114 ..Nitrogen, other than nitro or nitroso, bonded indirectly to phosphorus
115 ...N-C(=X)-N containing (X is chalcogen)
116 ...Sulfur single bonded directly to nitrogen
117 ....N-(O=)S(=O) containing (i.e., sulfonamides)
118 ...Phosphorus single bonded directly to nitrogen
119 ...C(=O)N containing
120 ..C=O other than as ketone or aldehyde, attached directly or indirectly to phosphorus
121 ...Plural C=O groups, other than as ketone or aldehyde
122 ....Malathion
123 .....With N-C(=O)-O containing compound
124 ...C=O, other than as ketone or aldehyde, attached to a benzene ring
125 ..Ketone or aldehyde containing
126 ..Sulfur not bonded directly to phosphorus
127 ...Thioether, sulfoxide or sulfone
128 ....Sulfur bonded directly to a benzene ring
129 ..Oxygen bonded directly to a carbon or hydrogen and wherein the oxygen is not bonded directly to phosphorus
130 ...The oxygen is bonded directly to a benzene ring
131 ..Nitro group bonded to a carbon
132 ...Nitro group is directly bonded to a benzene ring which benzene ring is either bonded directly bonded to phosphorus or indirectly bonded to phosphorus through a chalcogen
133 ....Two or more such benzene rings
134 ..Acyclic carbon to carbon unsaturation
135 ...Alkyne
136 ...Phosphate ester having three ester groups (e.g., DDVP, etc.)
137 ..Nitrogen bonded directly to phosphorus
138 ...N-P-N or N-N-P containing
139 ..Phosphorus bonded directly to halogen
140 ..(C)(R)P=X(-XC) containing (i.e., Phosphinate (X is chalcogen; R is C or H)
141 ..(CX-) (C)P=X(XH) or (CX-) (R)P=X(XC) containing (e.g., phosphonate, etc.) (X is chalcogen; R is C or H)
142 ..(CX-)(C)P(C),(CX-)(RX-)P(C),(C X-)P(XH)(XH) or (CX-)(CX-)P(-XR) containing (X is chalcogen; R is C or H) (e.g., phosphinite, phosphite, etc.)
143 ..Ester of (HX)P=X(XH)(XH) (X is chalcogen) (e.g., phosphate, etc.)
144 ...Triester
145 ....Three benzene rings bonded directly to chalcogen
146 ....Two benzene rings bonded directly to chalcogen
147 ....One benzene ring bonded directly to chalcogen
148 ...Diester
149 .Azoxy DOAI
150 .Acyclic nitrogen double bonded to acyclic nitrogen, acyclic nitrogen triple bonded to acyclic nitrogen or azide DOAI
151 ..Acyclic C-N=N-N containing
152 .3,10-dihydroxy-2-naphthacene carboxamide or derivative (e.g., tetracycline, etc.) DOAI
153 ..With stabilizer or preservative
154 ..With an additional active ingredient (excludes reaction product or complex)
155 .Para-N-benzene - sulfoxy-N containing DOAI, and said benzene ring is not part of a polycyclo ring system
156 ..Hetero ring containing
157 ...The hetero ring is six-membered and includes at least two nitrogens and no other hetero atoms
158 ...The hetero ring is five-membered

159	.Ortho-hydroxybenzoic acid (i.e., salicyclic acid) or derivative DOAI
160	..With additional ortho-hydroxybenzoic acid compound
161	..With heterocyclic compound
162	..With organic nitrogen containing compound
163	..With carboxylic acid, ester or metal salt thereof
164	..With organic oxygen containing compound
165	..Aspirin per se (i.e., 2-(acetyloxy)benozic acid)
166	..Nitrogen containing (e.g., anilides, etc.)
167	.9,10-seco-cyclopentanohydrophenanthrene ring system (e.g., vitamin D, etc.) DOAI
168	..With a vitamin type active ingredient
169	.Cyclopentanohydrophenanthrene ring system DOAI
170	..Plural Compounds containing cyclopentanohydrophenanthrene ring systems
171	..With additional active ingredient
172	..Hetero ring containing
173	...Spiro ring system
174	...-O-C-O- is part of a hetero ring (e.g., acetonide, etc.)
175	...-C(=O)-O-is part of a hetero ring (e.g., lactone, etc.)
176	...Nitrogen containing hetero ring
177	..Oxygen double bonded to a ring carbon of the cyclopentanohydrophenanthrene ring system
178	...Oxygen single bonded to a ring carbon of the cyclopentanohydrophenanthrene ring system
179	....Modified C-ring (except methyl in 13-position) (e.g., double bond containing, substituted, etc.)
180	.....9-position substituted
181	....21-position substituted
182	..Oxygen single bonded to a ring carbon of the cyclopentanohydrophenanthrene ring system
183	.Heterocyclic carbon compounds containing a hetero ring having chalcogen (i.e., O,S,Se or Te) or nitrogen as the only ring hetero atoms DOAI
184	..Heavy metal containing (including salts)
185	...Polycyclo ring system
186	....Bicyclo ring system
187	.....Quinolines or isoquinolines (including hydrogenated)
188	...Hetero ring is six-membered consisting of one nitrogen and five carbons
189	...Tin
190	...Mercury
191	..Aluminum (including salts)
192	..1-thia-4-aza-bicyclo (3.2.0) heptane ring containing (including dehydrogenated) (e.g., penicillins, etc.)
193	...Spiro or additional polycyclo ring system
194	...6,6-di-substituted
195	...3-position substituent contains -COOC- group
196	...6-position substituent contains hetero ring
197	...6-position substituent contains carbocyclic ring
198	....Ampicillin per se or salt thereof
199	....Penicillin G per se or salt thereof (e.g., procaine pencillin G, etc.)
200	..1-thia-5-aza-bicyclo (4.2.0) octane ring containing (including dehydrogenated) (e.g., cephalosporins, etc.)
201	...7,7-di-substituted
202	...Additional hetero ring
203	....3-position substituent contains pyridine ring
204	....3-position substituent contains sulfur
205	.....The additional hetero ring is part of a polycyclo ring system
206	.....7-position substituent contains hetero ring
207	.....Alkyl, hydroxyalkyl, alkoxyalkyl, or alkanoyloxyalkyl bonded directly to 3-position
208	...Sulfur containing substituent
209	...Alkyl, hydroxyalkyl, alkoxyalkyl, or alkanoyloxyakyl bonded directly to 3-position
210	..Hetero ring is four-membered and includes at least one nitrogen
211	..Hetero ring is seven-membered and includes at least one nitrogen and at least one hetero atom other than nitrogen
212	..Hetero ring is seven-membered consisting of one nitrogen and six carbon atoms
213	...Polycyclo ring system having the seven-membered hetero ring as one of the cyclos
214	....Ring nitrogen is shared by two or three of the cyclos
215	....Additional hetero atom in the polycyclo ring system
216	....Two of the cyclos share at least three ring carbons (i.e., bridged)
217	....Tricyclo ring system having the seven-membered hetero ring a one of the cyclos
218	..Hetero ring is seven-membered consisting of two nitrogens and five carbon atoms
219	...Polycyclo ring system having the seven-membered hetero ring as one of the cyclos
220	....Tricyclo ring system having the seven-membered hetero ring as one of the cyclos
221	....Bicyclo ring system having the seven-membered hetero ring as one of the cyclos
222.2	..Hetero ring is six-membered and includes at least nitrogen and sulfur as ring members
222.5	...Three or more ring hetero atoms in the six-membered hetero ring
222.8	....Polycyclo ring system having the six-membered hetero ring as one of the cyclos
223.2	.....1,2,4 - Benzothiadiazine - 1,1 - dioxides (including hydrogenated)
223.5	......With additional active ingredient
223.8	....1,3,5-Thiadiazines
224.2	...Polycyclo ring system having the six-membered hetero ring as one of the cyclos (e.g., 1,3- and 1,4-benzothiazines, etc.)
224.5	....At least three cyclos in the polycyclo ring system
224.8	.....Phenothiazines (including hydrogenated)

.Heterocyclic carbon compounds containing a hetero ring having chalcogen (i.e., O,S,Se or Te) or nitrogen as the only ring hetero atoms DOAI
..Hetero ring is six-membered and includes at least nitrogen and sulfur as ring members
...Polycyclo ring system having the six-membered hetero ring as one of the cyclos (e.g., 1,3- and 1,4-benzothiazines, etc.)
....At least three cyclos in the polycyclo ring system
.....Phenothiazines (including hydrogenated)
225.2 ......Hetero ring attached directly or indirectly to the phenothiazine ring nitrogen by acyclic nonionic bonding
225.5 ....The hetero ring is monocyclic piperidine
225.8 ....The hetero ring contains plural ring nitrogens
226.2 ......Chalcogen or nitrogen attached indirectly to the phenothiazine ring nitrogen by acyclic nonionic bonding
226.5 ....One of the cyclos is a 1,2-thiazine (e.g.,1,2-benzothiazines, etc.)
226.8 ...1,3-Thiazines
227.2 ....Chalcogen or nitrogen bonded directly to ring carbon of the six-membered hetero ring
227.5 ...1,4-Thiazines
227.8 ....Additional hetero ring attached directly or indirectly to the 1,4-thiazine by nonionic bonding
228.2 .....Polycyclo ring system having the additional hetero ring as one of the cyclos
228.5 ......Three or more ring hetero atoms in the polycyclo ring system
228.8 ..Hetero ring is six-membered and includes at least nitrogen and oxygen as ring hetero atoms (e.g., monocyclic 1,2- and 1,3-oxazines, etc.)
229.2 ...Three or more ring hetero atoms in the six-membered hetero ring
229.5 ...Polycyclo ring system having the six-membered hetero ring as one of the cyclos (e.g., maytansinoids, etc.)
229.8 ....Tricyclo ring system having the six-membered hetero ring as one of the cyclos
230.2 .....Ring nitrogen shared by two of the cyclos
230.5 ....Bicyclo ring system having the six-membered hetero ring as one of the cyclos (e.g., 1,4-benzoxazines, etc.)
230.8 ...Chalcogen bonded directly to ring carbon of 1,4-oxazine ring
231.2 ...Morpholines (i.e., fully hydrogenated 1,4- oxazines)
231.5 ....Additional hetero ring attached directly or indirectly to the morpholine ring by nonionic bonding
231.8 .....Plural morpholine rings attached directly or indirectly to each other by nonionic bonding
232.2 ......Additional hetero ring attached directly or indirectly to the morpholines by nonionic bonding
232.5 ....Polycyclo ring system having the additional hetero ring as one of the cyclos
232.8 .....Polycyclo ring system having the additional hetero ring as one of the cyclos
233.2 ......Ring nitrogen shared by two of the cyclos
233.5 ......Bicyclo ring system having the additional hetero ring as one of the cyclos
233.8 ....Plural ring hetero atoms in the bicyclo ring system
234.2 ....Three or more ring hetero atoms in the bicyclo ring system
234.5 ....Plural ring nitrogens in the bicyclo ring system
234.8 ....Quinoxalines (including hydrogenated)
235.2 ....Ring nitrogen in the bicyclo ring system
235.5 .....Ring nitrogen in the additional hetero ring
235.8 ......Plural ring nitrogens in the additional hetero ring (e.g., imidazole, pyrazine, etc.)
236.2 ....Three or more ring hetero atoms in the additional hetero ring
236.5 ....The ring nitrogens are bonded directly to each other (e.g., pyridazine, etc.)
236.8 ......Ring chalcogen in the additional hetero ring (e.g., oxazole, etc.)
237.2 ......The additional hetero ring is attached indirectly to the morpholine ring by an acyclic chain having a hetero atom as a chain member
237.5 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the morpholine ring
237.8 ....Nitrogen attached indirectly to the morpholine ring by acyclic nonionic bonding
238.2 .....Chalcogen attached directly to the nitrogen by nonionic bonding
238.5 .....The nitrogen is double or triple bonded directly to carbon
238.8 ....Chalcogen attached indirectly to the morpholine ring by acyclic nonionic bonding
239.2 .....The chalcogen is bonded directly to two carbon atoms
239.5 ....Carbocyclic ring attached indirectly to the morpholine ring by nonionic bonding
241 ..Hetero ring is six-membered consisting of three nitrogens and three carbon atoms
242 ...Asymmetrical (e.g., 1,2,4-triazine, etc.)
243 ....Polycyclo ring system having the hetero ring as one of the cyclos
244 ...Hexamethylenetetramines
245 ...Nitrogen bonded directly to ring carbon of the hetero ring
246 ...Polycyclo ring system having a 1,3,5-triazine as one of the cyclos
247 ..Hetero ring is six-membered consisting of two nitrogens and four carbon atoms (e.g., pyridazines, etc.)
248 ...Polycyclo ring system having a 1,2- or 1,4-diazine as one of the cyclos
249 ....1,4-diazine as one of the cyclos
250 .....At least three rings in the polycyclo ring system

.Heterocyclic carbon compounds containing a hetero ring having chalcogen (i.e., O,S,Se or Te) or nitrogen as the only ring hetero atoms DOAI
..Hetero ring is six-membered consisting of two nitrogens and four carbon atoms (e.g., pyridazines, etc.)
...Polycyclo ring system having a 1,2- or 1,4-diazine as one of the cyclos
....1,4-diazine as one of the cyclos
.....At least three rings in the polycyclo ring system
251 ......Isoalloxazine (e.g., riboflavins, Vitamin B2, etc.)
252 ...1,2- or 1,4-diazine compound having two or more hetero rings
253 ....Hetero ring other than 1,2- or 1,4-diazine is part of a polycyclo ring system
254 .....Diazine is bonded directly to the polycyclo ring system
255 ...1,4-diazines
256 ...1,3-diazines (e.g., pyrimidines, etc.)
257 ....Polycyclo ring system having 1,3-diazine as one of the cyclos
258 .....Bicyclo ring system having 1,3-diazine as one of the cyclos
259 ......Quinazolines (including hydrogenated)
260 ....Nitrogen bonded directly to the 1,3-diazine at 2-position
261 ......Purines (including hydrogenated)
262 ....Chalcogen bonded directly to a ring carbon of the purine
263 ....At both 2- and 6-positions (e.g., theophilline, etc.)
264 ....With an additional active ingredient or stabilizer
265 ....Additional hetero ring
266 ....Additional hetero ring
267 .....Tricyclo ring system having 1,3-diazine as one of the cyclos
268 ......Perimidine (including hydrogenated)
269 ....Pyrimidines with chalcogen bonded directly to a ring carbon of said pyrimidine moiety
270 .....Barbituric acid or derivative (including thioanalogs)
271 ......Two or more barbituric acid compounds or with an additional active ingredient or stabilizer
272 .....Nitrogen bonded directly to the 1,3-diazine at 2-position
273 ......The nitrogen is part of a hetero ring
274 .....Chalcogen bonded directly to pyrimidine at 2-position
275 ....Nitrogen bonded directly to the 1,3-diazine at 2-position by a single bond
276 ....Thiamines (e.g., vitamin B1, etc.)
277 ..Hetero ring is six-membered consisting of one nitrogen and five carbon atoms
278 ...Spiro ring system
279 ...Polycyclo ring system having the six-membered hetero ring as one of the cyclos
280 ....Pentacyclo ring system having the six-membered hetero ring as one of the cyclos
281 .....Two of the cyclos share at least three ring members (i.e., bridged)
282 ......One of the five cyclos is five-membered and includes ring chalcogen (e.g., codeine, morphine, etc.)
283 .....Ring nitrogen in the pentacyclo ring system is shared by five-membered cyclo and six-membered cyclo (e.g., vincamine, etc.)
284 ....Tetracyclo ring system having the six-membered hetero ring as one of the cyclos
285 .....Plural hetero atoms in the tetracyclo ring system (e.g., acronycines, etc.)
286 ......Two of the cyclos share at least three ring members (i.e., bridged)
287 ......Three or more hetero atoms in the tetracyclo ring system
288 ......Ring carbon is shared by three of the cyclos
289 .....Two of the cyclos share at least three ring members (i.e., bridged) (e.g., morphinans, etc.)
290 ....Tricyclo ring system having the six-membered hetero ring as one of the cyclos
291 .....Plural hetero atoms in the tricyclo ring system
292 ......Plural ring nitrogens in the tricyclo ring system
293 ....Three or more hetero atoms in the tricyclo ring system
294 .....Ring nitrogen is shared by two of the cyclos
295 .....Two of the cyclos share at least three ring carbons (i.e., bridged) (e.g., benzomorphans, etc.)
296 .....Ring carbons shared by each of the three cyclos (e.g., 1,8-naphthalimides, etc.)
297 .....Acridines (including hydrogenated)
298 .....Phenanthridines (including hydrogenated)
299 ....Bicyclo ring system having the six-membered hetero ring as one of the cyclos
300 .....Plural hetero atoms in the bicyclo ring system
301 ......Ring sulfur in the bicyclo ring system
302 ......Ring oxygen in the bicyclo ring system
303 ......Exactly three ring nitrogens in the bicyclo ring system
304 .....Tropanes (including nor or dehydro form)
305 .....Quinuclidines (including unsaturation)
306 .....Quinolizines (including hydrogenated)
307 .....Isoquinolines (including hydrogenated)
308 ......Plural isoquinoline ring systems attached directly or indirectly to each other by nonionic bonding
309 ......Chalcogen attached directly to the six-membered hetero ring by nonionic bonding
310 ......Nitrogen, other than as nitro or nitroso, attached directly to the isoquinoline ring system by nonionic bonding
311 .....Quinolines (including hydrogenated)

.Heterocyclic carbon compounds containing a hetero ring having chalcogen (i.e., O,S,Se or Te) or nitrogen as the only ring hetero atoms DOAI
..Hetero ring is six-membered consisting of one nitrogen and five carbon atoms
...Polycyclo ring system having the six-membered hetero ring as one of the cyclos
....Bicyclo ring system having the six-membered hetero ring as one of the cyclos
.....Quinolines (including hydrogenated)
312 ......Chalcogen attached directly to the six-membered hetero ring by nonionic bonding
313 ......Nitrogen, other than as nitro or nitroso, attached directly to the six-membered hetero ring by nonionic bonding
314 ......Additional hetero ring attached directly or indirectly to the quinoline ring system by nonionic bonding
315 ...Piperidines
316 ....Plural piperidine rings
317 ....Additional ring containing
318 .....The additional ring is a six-membered hetero ring consisting of one nitrogen and five carbon atoms
319 .....The additional ring is one of the cyclos in a polycyclo ring system
320 ......Hetero ring in the polycyclo ring system
321 ....Plural hetero atoms in the polycyclo ring system
322 ....Plural ring nitrogens in the polycyclo ring system
323 ....Ring nitrogen in the polycyclo ring system
324 ....Ring sulfur in the polycyclo ring system
325 ......Polycyclo ring system is tricyclo-carbocyclic
326 .....The additional ring is a hetero ring
327 .....Chalcogen bonded directly to ring carbon of the piperidine ring
328 ......Plural chalcogens bonded directly to ring carbons of the piperidine ring
329 .....Nitrogen attached directly to the piperidine ring by nonionic bonding
330 .....C=X bonded directly to the piperidine ring (X is chalcogen)
331 .....Nitrogen attached indirectly to the piperidine ring by nonionic bonding
332 ...Plural six-membered hetero rings consisting of one nitrogen and five carbon atoms
333 ....Additional hetero ring other than the six-membered hetero rings
334 ....The six-membered hetero rings are bonded directly to each other
335 ....Chalcogen bonded directly to a ring carbon of the six-membered hetero ring
336 ...Additional hetero ring containing
337 ....The additional hetero ring is one of the cyclos in a polycyclo ring system
338 .....Plural hetero atoms in the polycyclo ring system
339 .....Ring nitrogen in the polycyclo ring system
340 ....Ring nitrogen in the additional hetero ring (e.g., oxazole, etc.)
341 .....The additional hetero ring consists of two nitrogens and three carbons
342 .....Ring sulfur in the additional hetero ring
343 .....The additional hetero ring consists of one nitrogen and four carbons (e.g., nicotine, etc.)
344 ...Cyano bonded directly to the six-membered hetero ring
345 ...Chalcogen bonded directly to ring carbon of the six-membered hetero ring
346 ....Chalcogen and acyclic nitrogen bonded directly to the same carbon
347 ....Chalcogen bonded directly to chalcogen
348 ....Chalcogens bonded directly to at least two ring carbons of the six-membered hetero ring
349 ....Nitrogen attached directly to the six-membered hetero ring by nonionic bonding
350 ....C=O bonded directly to the six-membered hetero ring
351 ....Nitrogen attached indirectly to the six-membered hetero ring by nonionic bonding
352 ...Nitrogen attached directly to the six-membered hetero ring by nonionic bonding
353 ....Plural acyclic nitrogens bonded directly to the same carbon or bonded directly to each other
354 ...C=O bonded directly to the six-membered hetero ring
355 ....At 3-position
356 .....C=O in a C(=O)O group (e.g., nicotinic acid, etc.)
357 ...Nitrogen attached indirectly to the six-membered hetero ring by nonionic bonding
358 ...The ring nitrogen of the six-membered hetero ring is pentavalent (e.g., quaternary pyridinium salt, etc.)
359 ..Five-membered hetero ring containing at least one nitrogen ring atom (e.g., 1,2,3-triazoles, etc.)
360 ...Plural ring chalcogens in the hetero ring
361 ...Plural ring nitrogens and a single chalcogen in the hetero ring
362 ....1,2,5-thiadiazoles (including hydrogenated)
363 ....1,3,4-thiadiazoles (including hydrogenated)
364 ....Oxadiazoles (including hydrogenated)
365 ...1,3-thiazoles (including hydrogenated)
366 ....Polycyclo ring system having the thiazole ring as one of the cyclos
367 .....Bicyclo ring system having the thiazole ring as one of the cyclos
368 ......Ring nitrogen is shared by the cyclos of the bicyclo ring system (e.g., tetramisole, etc.)
369 ....Chalcogen bonded directly to ring carbon of the thiazole ring
370 ....Nitrogen bonded directly to ring carbon of the thiazole ring

.Heterocyclic carbon compounds containing a hetero ring having chalcogen (i.e., O,S,Se or Te) or nitrogen as the only ring hetero atoms DOAI
..Five-membered hetero ring containing at least one nitrogen ring atom (e.g., 1,2,3-triazoles, etc.)
...1,3-thiazoles (including hydrogenated)
....Nitrogen bonded directly to ring carbon of the thiazole ring
371 .....C=X bonded directly to the nitrogen which is bonded directly to the thiazole ring (X is chalcogen)
372 ...1,2-thiazoles (including hydrogenated)
373 ....Polycyclo ring system having the thiazole ring as one of the cyclos
374 ...1,3-oxazoles (including hydrogenated)
375 ....Polycyclo ring system having the oxazole ring as one of the cyclos
376 ....Chalcogen bonded directly to ring carbon of the oxazole ring
377 ....Nitrogen bonded directly to ring carbon of the oxazole ring
378 ...1,2-oxazoles (including hydrogenated)
379 ....Polycyclo ring system having the oxazole ring as one of the cyclos
380 ....Chalcogen or nitrogen bonded directly to ring carbon of the oxazole ring
381 ...Tetrazoles (including hydrogenated)
382 ....Additional chalcogen containing hetero ring
383 ...1,2,4-triazoles (including hydrogenated)
384 ....Chalcogen bonded directly to the triazole ring
385 ...1,3-diazoles
386 ....Divalent chalcogen or acyclic nitrogen double bonded directly to ring carbon of the diazole ring, or tautomeric equivalent
387 .....Polycyclo ring system having the diazole ring as one of the cyclos
388 ......Nitrogen double bonded directly at 2-position of the diazole ring, or tautomeric equivalent
389 .....Divalent chalcogen or acyclic nitrogen double bonded directly at both 2- and 4- positions, or tautomeric equivalent (e.g., hydantoin, etc.)
390 ......Chalcogen or nitrogen bonded directly at 1-, 3-, or 5-position by nonionic bonding
391 ......Benzene ring bonded directly to the diazole ring by nonionic bonding
392 .....Divalent chalcogen or acyclic nitrogen double bonded at 2-position, or tautomeric equivalent
393 ....Polycyclo ring system having the diazole ring as one of the cyclos
394 .....Benzo fused at 4,5-positions of the diazole ring
395 ......Chalcogen or nitrogen bonded directly at 1-, 2- or 3-position of the diazole ring by nonionic bonding
396 ....Imidazoles
397 .....Additional hetero ring
398 .....Chalcogen or nitrogen bonded directly to the imidazole ring by nonionic bonding
399 .....Chalcogen or nitrogen bonded indirectly to the imidazole ring by nonionic bonding
400 ......At imidazole ring carbon
401 ....2-imidazolines
402 .....Additional hetero ring
403 ...1,2-diazoles
404 ....Divalent chalcogen or acyclic nitrogen double bonded directly to ring carbon of the diazole ring, or tautomeric equivalent
405 .....Polycyclo ring system having the diazole ring as one of the cyclos
406 ....Pyrazoles
407 .....Chalcogen or nitrogen bonded directly to the pyrazole ring by nonionic bonding
408 ...The five-membered hetero ring consists of one nitrogen and four carbons
409 ....Spiro ring system
410 ....Polycyclo ring system having the five-membered hetero ring as one of the cyclos
411 .....Tricyclo ring system having the five-membered hetero ring as one of the cyclos
412 .....Bicyclo ring system having the five-membered hetero ring as one of the cyclos
413 ......Ring nitrogen is shared by the cyclos of the bicyclo ring system
414 ......Additional hetero ring which is not part of the bicyclo ring system
415 ......The bicyclo ring system consists of the five-membered hetero ring and a benzene ring (e.g., indole, etc.)
416 ....The ring nitrogen is bonded directly to nonshared ring carbons of the five-membered hetero ring (e.g., isoindole, etc.)
417 ....Plural chalcogens bonded directly to ring carbons of the five-membered hetero ring (e.g., phthalimide, etc.)
418 ....Chalcogen bonded directly to ring carbon of the five-membered hetero ring
419 ....C=X bonded directly or indirectly by an acyclic carbon or carbon chain to ring carbon of the five-membered hetero ring (e.g., tryptophan, etc.) (X is chalcogen)
420 ....Indomethacine per se or ester thereof
421 ......Chalcogen bonded directly to ring carbon of the five-membered hetero ring (e.g., adrenochrome, etc.)
422 ....Additional hetero ring
423 ....C=X bonded directly to the five-membered hetero ring by nonionic bonding (X is chalcogen)
424 ....Chalcogen bonded directly to the five-membered hetero ring by nonionic bonding
425 .....Plural chalcogens bonded directly to the five-membered hetero ring by nonionic bonding
426 ....Nitrogen bonded directly to the five-membered hetero ring by nonionic bonding

.Heterocyclic carbon compounds containing a hetero ring having chalcogen (i.e., O,S,Se or Te) or nitrogen as the only ring hetero atoms DOAI
..Five-membered hetero ring containing at least one nitrogen ring atom (e.g., 1,2,3-triazoles, etc.)
...The five-membered hetero ring consists of one nitrogen and four carbons
427 ....Two double bonds between ring members of the five-membered hetero ring (e.g., pyrrole, etc.)
428 ....Chalcogen bonded indirectly to the five-membered hetero ring by acyclic nonionic bonding
429 ....Carbocyclic ring bonded directly to the five-membered hetero ring
430 ..Sulfur containing hetero ring
431 ...The hetero ring has at least seven members
432 ...The hetero ring is six-membered
433 ....Plural hetero atoms in the hetero ring
434 .....Polycyclo ring system having the hetero ring as one of the cyclos
435 .....Three or more hetero atoms in the hetero ring
436 .....Two ring sulfurs in the hetero ring
437 ....Tricyclo ring system having the hetero ring as one of the cyclos
438 ...The hetero ring is five-membered
439 ....Plural hetero atoms in the hetero ring
440 .....Only two ring sulfurs in the hetero ring
441 ......Chalcogen bonded directly to ring carbon of the hetero ring
442 ......Nitrogen bonded directly to the hetero ring by nonionic bonding
443 ....Polycyclo ring system having the hetero ring as one of the cyclos
444 ....Additional hetero ring
445 ....Chalcogen bonded directly to ring carbon of the hetero ring
446 ....Chalcogen bonded directly to ring sulfur by nonionic bonding
447 ....Nitrogen bonded directly to the hetero ring
448 ....C=O bonded directly to the hetero ring (X is chalcogen)
449 ..Oxygen containing hetero ring
450 ...The hetero ring has at least seven members
451 ...The hetero ring is six-membered
452 ....Plural ring oxygens in the hetero ring
453 ....Polycyclo ring system having the hetero ring as one of the cyclos
454 .....Tricyclo ring system having the hetero ring as one of the cyclos
455 ......Chalcogen bonded directly to ring carbon of the hetero ring
456 .....Bicyclo ring system having the hetero ring as one of the cyclos (e.g., chromones, etc.)
457 ......Coumarins (including hydrogenated)
458 ......Tocopherols (e.g., vitamin E, etc.)
459 ....Nitrogen containing
460 ....Chalcogen bonded directly to ring carbon of the hetero ring
461 ...The hetero ring is five-membered
462 ....Spiro ring system
463 ....Plural ring oxygens in the hetero ring
464 .....Bicyclo ring system having the hetero ring as one of the cyclos (e.g., methylenedioxyphenyl group, etc.)
465 ......The hetero ring is substituted
466 ......Nitrogen containing
467 .....Only two ring oxygens in the hetero ring which is not a polycyclo ring system (e.g., dioxolane, etc.)
468 ....Polycyclo ring system having the hetero ring as one of the cyclos
469 .....Bicyclo ring system having the hetero ring as one of the cyclos
470 ......Chalcogen or nitrogen bonded directly to the hetero ring
471 ....Nitrogen containing
472 .....The nitrogen bonded directly to the hetero ring
473 ....Chalcogen bonded directly to the hetero ring
474 .....Ascorbic acid or derivative (e.g., vitamin C, etc.)
475 ...The hetero ring is three-membered
476 .N-C(=X)X containing (X is chalcogen) DOAI
477 ..N-C(=X)-X-N containing
478 ..N-C(=X)-X-C containing
479 ...With an additional active ingredient
480 ...Polycyclo ring system attached by nonionic bonding
481 ....Naphthyl ring system
482 ...N-C(=X)-N, N-C(=N)N, N-N, nitrogen directly bonded to oxygen by nonionic bonding or cyano containing
483 ...Plural N-C(=X)-X groups
484 ...Ring in acid moiety
485 ....The ring is a benzene ring
486 .....Phenoxy in acid moiety
487 .....The benzene ring is attached to nitrogen through an acyclic carbon or carbon chain
488 .....Ring in alcohol moiety
489 ...Ring in alcohol moiety
490 ....Ring attached directly to oxygen of oxygen of N-C(=O)-O
491 ..With an additional active ingredient
492 .Heavy metal containing DOAI
493 ..Tin
494 ..Zinc
495 ..Gold or silver
496 ..Mercury
497 ...Nitrogen containing
498 ..Lead
499 ..Copper
500 ...With an additional active ingredient
501 ..Nickel or cobalt
502 ..Iron
503 ..Antimony or bismuth
504 ..Arsenic
505 ..Cadmium or chromium
506 .Ester DOAI
507 ..R-C(=X)-N-X-C containing (e.g., hydroxamic acid ester, etc.) (R is C or H and X is chalcogen)
508 ..X-C=N containing (e.g., imidoester, etc.) (X is chalcogen)
509 ..(O=)N(=O)-O-C containing (e.g., nitrate ester, etc.)
510 ..Polycyclo ring system
511 ...Two of the cyclos share at least three ring members (i.e., bridged)
512 ..X-C(=X)-X containing (e.g., carbonic acid ester, thiocarbonic acid ester, etc.) (X is chalcogen)

.Ester DOAI
513 ..C-C(=X)-X-C containing (X is chalcogen and at least one X is other than oxygen)
514 ..Carbon bonded to -NCX or -XCN (e.g., cyanate, thiocyanate or isothiocyanate, etc.) (X is chalcogen)
515 ...With an additional active ingredient
516 ...Containing plural -NCX or -XCN groups or a cyano
517 ..S-X-C containing (e.g., sulfates, etc.) (X is chalcogen)
518 ...S of S-X-C attached directly to a benzene ring
519 ..Cyano or isocyano bonded directly to carbon
520 ...Benzene ring containing
521 ....C=O other than as ketone or aldehyde
522 .....The cyano is bonded directly to a benzene ring
523 ....Additional nitrogen other than cyano
524 .....The cyano is bonded directly to a benzene ring
525 ....Two or more of the cyano groups
526 ...Acyclic
527 ....C=O other than as ketone or aldehyde
528 .....C(=O)N containing
529 ..Z-C(=O)-O-Y wherein Z is hydrogen or an organic radical bonded to the C(=O) by a carbon and Y is an organic radical bonded to the oxygen by a carbon
530 ...Z contains a cyclopentyl or cyclopentene ring
531 ...Z contains a cyclopropyl or cyclopropene ring
532 ...Z-C(=O)-O-Y, wherein Z contains a benzene ring
533 ....Compound contains two or more C(=O)O groups indirectly bonded together by only conalent bonds
534 ....Z or Y radical contains a nitrogen atom
535 .....The nitrogen of the Z radical is directly bonded to a benzene ring which is directly bonded to the C(=O) group
536 ......With an agent to enhance topical absorption or with a stabilizing agent
537 ......With an additional active ingredient
538 .....Nitrogen bonded to carbon in Z moiety
539 ......Plural separated benzene rings in Z moiety
540 ......Nitrogen in Y moiety
541 ......Aldehyde or ketone in Z or Y radical
542 ......Z radical contains two or more nitrogen atoms at least one of which forms a C(=X)N group (X is chalcogen)
543 ....Z forms a phenoxy alkyl or phenoxy alkenyl radical
544 ....C(=O)O attached directly through the carbon to a benzene ring
545 ....Ketone in Z radical
546 ...ZC(=O)OY, wherein Z is an acyclic radical bonded to the C=O by a carbon and Y is an organic radical bonded to the oxygen by a carbon
547 ....Compound contains two or more C(=O)O groups
548 .....Ring is alcohol moiety
549 ....Z radical contains carbon to carbon unsaturation
550 ....Z radical contains sulfur or halogen
551 ....Z radical contains nitrogen
552 ....Z contains an unbroken chain of at least seven carbon atoms bonded directly to the C(=O) group
553 .Radical -XH acid, or anhydride, acid halide or salt thereof (X is chalcogen) DOAI
554 ..Amine addition salt of the acid
555 ...Benzene ring in acid moiety
556 ..Inner quaternary ammonium salt (e.g., betaine, etc.)
557 ..Carboxylic acid, percarboxylic acid, or salt thereof (e.g., peracetic acid, etc.)
558 ...Higher fatty acid or salt thereof
559 ....Ring containing
560 ....Carbon to carbon unsaturation
561 ...Nitrogen other than as nitro or nitroso nonionically bonded
562 ....Sulfur nonionically bonded
563 ....RC(=O)N containing (i.e., carboxamide) (R is C or H)
564 ....Plural nitrogens nonionically bonded
565 .....N-N or N=C(-N)-N containing (e.g., hydrazines, hydrazones, or quanidines, etc.)
566 .....Polycarboxylic acid
567 ....Benzene ring nonionically bonded
568 ...Benzene ring nonionically bonded
569 ....Polycyclo ring system
570 ....Carboxy or salt thereof only attached indirectly to the benzene ring
571 .....Ether oxygen single bonded to carboxylic acid, percarboxylic acid or salt thereof through an acyclic carbon or acyclic carbon chain
572 ...Cyclic carboxylic acid containing three to five carbons or cyclic percarboxylic acid containing three to five carbons or salt thereof
573 ....Cyclopentyl or cyclopentene (e.g., prostaglandins, etc.)
574 ...Polycarboxylic acid or salt thereof
575 ..Hydroxamic acid or salt thereof
576 ..Benzene ring containing
577 ...Polycyclo ring system
578 ..Acyclic acid or salt thereof
579 .Nitrogen containing other than solely as a nitrogen in an inorganic ion of an addition salt, a nitro or a nitroso DOAI
580 ..Thioureas (i.e., N-C(=S)-N
581 ...Thiocarbazides or thiosemicarbazides (i.e., N-N-C(=S)-N containing)
582 ....Thiocarbazones or thiosemicarbazones (i.e., C=N-N-C(=S)-N containing)
583 .....Benzene ring containing
584 ...C=O, sulfur or cyano attached directly to thiourea nitrogen by nonionic bonding
585 ...Benzene ring containing
586 ....Nitrogen attached indirectly to the -C(=S)-group by nonionic bonding
587 ....Oxygen containing
588 ..Ureas (i.e., N-C(=O)-N)
589 ...Nitro or nitroso bonded directly to amino nitrogen (e.g., nitramine, nitrosamine, nitro-urea, etc.)
590 ...Carbazides or semicarbazides (i.e., N-N-C(=O)-N containing)
591 ...Biurets (i.e., N-C(=O)-N-C(=O)-N)
592 ...Sulfur attached directly to urea nitrogen by nonionic bonding

.Nitrogen containing other than solely as a nitrogen in an inorganic ion of an addition salt, a nitro or a nitroso DOAI
..Ureas (i.e., N-C(=O)-N)
...Sulfur attached directly to urea nitrogen by nonionic bonding
593 ....Sulfur is part of a substituent which contains additional nitrogen
594 ...Additional C=O bonded directly to urea nitrogen
595 ...Benzene ring containing
596 ....Benzene ring bonded directly to urea nitrogen
597 .....Benzene ring is part of a substituent which contains nitrogen
598 .....Benzene ring is part of a substituent which contains oxygen
599 ..Thiocarboxamides, (i.e., C(=S)-N)
600 ..Sulfamides (i.e., N-(O=)S(=O)-N)
601 ..Sulfonamides (i.e., Q-(O=)S(=O)-N, wherein Q is a substituent and wherein any substituent attached to the nitrogen will be referred to as E)
602 ...Q contains benzene ring
603 ....Nitrogen in Q
604 ....Q is monocyclic
605 ...Q is acyclic and benzene ring in a substituent E
606 ..N-S-S containing
607 ..N-S-N containing or contains a nitrogen bonded directly to a S=O group (e.g., sulfinamides, etc.)
608 ..Sulfur attached directly to amino nitrogen by nonionic bonding (e.g., sulfenamides, etc.)
609 ..Cyanamides (i.e., compounds containing cyano bonded directly to amino nitrogen)
610 ..Nitramines (i.e., compounds containing nitro bonded directly to amino nitrogen)
611 ..Nitrosamines (i.e., compounds containing nitroso bonded directly to amino nitrogen)
612 ..Haloamines (i.e., compounds containing halogen attached directly to amino nitrogen by nonionic bonding)
613 ..Carboxamides (i.e., R-C(=O)-N, wherein R is a radical having carbon bonded directly to the C(=O)-N or is hydrogen and wherein any substituent attached to nitrogen will be referred to as E)
614 ...N-N containing (e.g., aminimine, hydrazine, etc.)
615 ....R contains benzene ring
616 ...Plural carboxamide groups or plural C=O groups bonded directly to the same nitrogen
617 ...R contains benzene ring
618 ....Sulfur in R
619 ....Nitrogen in R
620 .....The nitrogen in R is an amino nitrogen attached indirectly to a ring by acyclic bonding
621 ....C=O in R
622 ....C-O- group in R
623 ...Plural alicyclic rings in R
624 ...Three-membered ring in R
625 ...R is acyclic
626 ....Nitrogen in R
627 ....Carbon to carbon unsaturation in R
628 ....Halogen bonded directly to carbon in R
629 ....R is hydrogen or a lower saturated alkyl of less than seven carbons
630 .....A ring or polycyclo ring system in a substituent E is attached indirectly to the carboxamide nitrogen or to an amino nitrogen in substituent E by acyclic nonionic bonding
631 ..Amidines (i.e., N=C-N)
632 ...Amidino hydrazines or hydrazones (i.e., N-N=C-N or N=C-N-N)
633 ...Amidoximes (i.e., N-C=N-O)
634 ...Guanidines (i.e., N=C(-N)-N)
635 ....Biguanides (i.e., N=C(-N)-N(N-)C=N)
636 ...Polyamidines
637 ...Benzene ring containing
638 ..Nitrogen double bonded directly to carbon
639 ...Hydrazones (i.e., C=N-N)
640 ...Oximes (i.e., C=N-O-)
641 ...Aldimines or ketimines which contain a benzene ring (i.e., RC=N wherein R is C or H)
642 ..Quaternary ammonium containing
643 ...Benzene ring containing
644 ..Amine oxides
645 ..Nitroxides, oxyamines or hydroxylamines (i.e., N-O or N-OH)
646 ..Benzene ring containing
647 ...Amino nitrogen and a ring bonded directly to the same ring and any other amino nitrogen in the compound is bonded directly to one of the rings
648 ...Two aryl rings or aryl ring systems bonded directly to the same acyclic carbon
649 ...Amino nitrogen attached to aryl ring or aryl ring system by an acyclic carbon or acyclic chain
650 ....The aryl ring or aryl ring system is bonded directly to another ring or ring system
651 ....Ether oxygen is part of the chain
652 .....Alkanol group only between the amino nitrogen and an ether oxygen which is bonded directly to the aryl ring or aryl ring system (i.e., aryloxy alkanol amines)
653 ....Hydroxy, bonded directly to carbon, attached directly or indirectly to the acyclic carbon or chain by acyclic nonionic bonding (e.g., beta hydroxy phenethylamines, etc.)
654 ....The chain consists of two or more carbons which are unsubtituted or have acyclic hydrocarbyl substituents only
655 ....The aryl ring or aryl ring system and amino nitrogen are bonded directly to the same acylic carbon, which carbon additionally has only hydrogen or acyclic hydrocarbyl substituents bonded directly thereto
656 ...Polycyclo ring system
657 ....Bicyclo ring system
658 ...Two benzene rings bonded directly to the same nitrogen
659 ..Alicyclic ring or ring system and amino nitrogen are attached indirectly by an acyclic carbon or acyclic chain
660 ..Plural alicyclic rings
661 ...Polycyclo ring system
662 ....Tricyclo ring system

.Nitrogen containing other than solely as a nitrogen in an inorganic ion of an addition salt, a nitro or a nitroso DOAI
663 ..Acyclic
664 ...N-N containing (e.g., aminimine, hydrazine, etc.)
665 ...Sulfur containing
666 ...Aldehyde or ketone containing
667 ...C-O-group containing
668 ....Polyether
669 ....Polyhydroxy
670 ....Monoether
671 ...Carbon to carbon unsaturation
672 ...Halogen bonded directly to carbon
673 ...Plural amino nitrogens
674 ....Three or more amino nitrogens
675 .Ketone DOAI
676 ..Nitrogen containing
677 ...Bicyclo ring system having a benzene ring as one of the cyclos
678 ..Benzene ring containing
679 ...Plural rings
680 ....Polycyclo ring system
681 .....Bicyclo
682 ......Naphthyl ring system
683 ....Alicyclic ring
684 .....Five-membered alicyclic ring
685 ....C=O bonded directly to benzene ring
686 .....Two benzene rings bonded directly to the same C=O
687 ......Oxygen single bonded to carbon
688 ...C=O bonded directly to benzene ring (e.g., acetophenone, etc.)
689 ....Oxygen single bonded to carbon
690 ..Alicyclic ring containing
691 ...Plural alicyclic rings
692 ....Camphor or nuclear substituted derivatives thereof
693 .Aldehyde DOAI
694 ..Formaldehyde
695 ...With polycyclo compound
696 ...With alcohol
697 ...With nitrogen containing compound
698 ..With preservative or stabilizer
699 ..Benzene ring containing
700 ...Polycyclo ring system
701 ...Acyclic carbon to carbon unsaturation
702 ..Sulfur containing
703 ..Carbon to carbon unsaturation
704 ..Nitrogen containing
705 ..Plural C=O groups
706 .Sulfur, selenium or tellurium compound (e.g., thioalcohols, mercaptans, etc.)
707 ..Persulfide (e.g., R-S-S-R, etc.)
708 ..Oxygen bonded directly to sulfur (e.g., sulfoxides, etc.)
709 ...Plural oxygens bonded directly to the same sulfur (e.g., sulfones, etc.)
710 ....Acyclic carbon to carbon unsaturation
711 ....Acyclic
712 ..Thioether
713 ...Acyclic carbon to carbon unsaturation
714 .Peroxide DOAI
715 .Ether DOAI
716 ..Nitrogen containing
717 ..Benzene ring containing
718 ...Plural oxygens
719 ....Alicyclic ring
720 ....Acyclic carbon to carbon unsaturation
721 ....Plural benzene rings
722 ..Acyclic
723 ...Plural oxygens
724 .C-O-group (e.g., alcohol, alcoholate, etc.) DOAI
725 ..Vitamin A compound or derivative
726 ..Diphenyl-substituted acyclic alcohol or alcoholate
727 ..Nitrogen containing
728 ...C of C-O- group is nuclear C of a benzene ring (e.g., phenol, phenolate, etc.)
729 ..Alicyclic ring containing
730 ..Benzene ring containing
731 ...C of C-O- group is nuclear C of a benzene ring (e.g., phenol, phenolate, etc.)
732 ....Polycyclo ring system (e.g., naphthols, etc.)
733 ....Acyclic carbon to carbon unsaturation
734 ....Two or more separate aryl-O-groups
735 .....Nuclear halogenated
736 ....Additional benzene ring containing
737 ....Nuclear halogenated
738 ..Polyhydroxy
739 ..Carbon to carbon unsaturated
740 .Nitrogen containing compound DOAI
741 ..Benzene ring containing
742 ..Polynitro
743 .Halogenated hydrocarbon DOAI
744 ..Unsaturated aliphatic compound
745 ...Alkyne
746 ...Plural halogenated hydrocarbon compounds
747 ..Carbocyclic
748 ...Two benzene rings directly attached to an acyclic hydrocarbon or acyclic halogenated hydrocarbon (e.g., D.D.T., etc.)
749 ....Fluorine containing
750 ....With organic ether or -OH containing compound non-DOAI
751 ...Benzene ring containing
752 ....Alkyne
753 ....Polycyclo ring system
754 ....Plural benzene rings
755 ...Polycyclo ring system
756 ....Bicyclo
757 ..Two or more halogenated hydrocarbons
758 ..Chlorine as only halogen
759 ..Fluorine as only halogen
760 ..Bromine and chlorine as only halogens
761 ..Bromine and fluorine as only halogens
762 .Hydrocarbon DOAI
763 ..Carbocyclic
764 ...Benzene ring containing
765 ....Polycyclo ring system
766 ...Polycyclo ring system
767 ..With phosphorus containing non-DOAI
768 ..With sulfur containing non-DOAI
769 DESIGNATED INORGANIC NONACTIVE INGREDIENT OR ELEMENTAL MATERIAL OTHER THAN WATER
770 .Siliceous or calcareous material (e.g., clay, earth, etc.)
771 .Oxygen gas containing
772 DESIGNATED ORGANIC NONACTIVE INGREDIENT CONTAINING OTHER THAN HYDROCARBON
773 .Peptide containing
774 ..Gelatin or derivative
775 ..Casein (milk protein) or derivative
776 ..Albumin or derivative
777 .Carbohydrate or lignin, or derivative
778 ..Starch or derivative
779 ..Algin or derivative
780 ..Locust bean gum
781 ..Cellulose or derivative
782 .Natural gum or resin
783 .Plant extract or plant material of undetermined constitution

DESIGNATED ORGANIC NONACTIVE INGREDIENT CONTAINING OTHER THAN HYDROCARBON
784 .Carboxylic acid or salt thereof
785 .Carboxylic acid ester
786 ..Glyceride
787 ..Beeswax
788 .Nitrogen containing
789 MISCELLANEOUS (e.g., HYDROCARBONS, etc.)
****
CROSS-REFERENCE ART.........
COLLECTIONS PERTAINING TO...
SUBJECT MATTER ONLY IN......
CLASS 514 (see subclasses...
800-975 below). ....
****
****
PEPTIDE AND PROTEIN ART.....
COLLECTIONS PERTAINING TO...
CLASS 514. ....
****
800 LHRH LIKE
801 COLLAGEN, GELATIN OR DERIVATIVES THEREOF
802 FIBRINOPEPTIDES, BLOOD-COAGULATION FACTORS OR DERIVATIVES
803 KININ OR DERIVATIVES
804 PHECMYCIN SERIES OR DERIVATIVES
805 ADRENOCORTICOTROPIC HORMONE OR DERIVATIVES
806 SOMATOSTATIN OR DERIVATIVES
807 OXYTOXIN, VASOPRESSIN OR DERIVATIVES
808 CALCITONIN OR DERIVATIVES
809 ENKEPHALIN OR ENDORPHIN OR DERIVATIVES
****
SPECIFICALLY DISCLOSED......
DISEASE CONDITION AND.......
PHARMACEUTICAL EFFECT FOR...
PATENTS ISSUED SUBSEQUENT...
TO JAN 1, 1965. ....
****
810 ADDICTION
811 .Alcohol
812 .Narcotic
813 .Tobacco
814 ANEMIA
815 .Sickle cell
816 ANESTHETIC, GENERAL
817 ANESTHETIC, TOPICAL
818 ANESTHETIC, LOCAL
819 ANTACID, ORAL
820 .With antiflatulent
821 ANTIARRHYTHMIC
822 ANTICOAGULATION
823 ANTIDOTE
824 ARTERIOSCLEROSIS
825 ARTHRITIS
826 ASTHMA
827 ASTRINGENT, NONFACIAL
828 .Topical for the skin
829 BITE OR STING
830 .Insect
831 .Animal (nonpoisonous)
832 BLOOD SUBSTITUTE
833 BLOOD PLASMA EXTENDER
834 COAGULANT
835 CARIES
836 CHELATE
837 CHOLERA
838 CIRRHOSIS
839 CONTACT LENS TREATMENT
840 .Chemical sterilizing
841 CONTRACEPTIVE
842 .Non-mammal
843 .Female (mammal)
844 COSMETIC, FACIAL
845 .Liquid make-up
846 .Cleansing cream or lotion
847 .Facial moisturizer
848 .Facial astringent
849 COUGH AND COLD PREPARATION
850 .Antitussive
851 CYSTIC FIBROSIS
852 DANDRUFF
853 DECONGESTANT
854 .Vasoconstrictor
855 .Expectorant
DERMATITIS
858 .Athlete's foot
859 .Acne
860 .Cellulitis
861 .Eczema
862 .Poison (ivy, oak, sumac)
863 .Psoriasis
864 .Seborrhea
865 .Diaper rash
866 DIABETES
867 DIARRHEA
868 DISTEMPER
869 DIURETIC
870 EDEMA
871 .Topical
872 EMESIS (motion sickness-nausea)
873 EMOLLIENT
874 ESTROGENIC AGENT (noncontraceptive)
875 FLEA CONTROL
876 .Collar type
877 GALLSTONE
878 GERIATRICS
879 .Senility
880 HAIR TREATMENT (therapeutic-scalp)
881 .Shampoo
882 HEMORRHOID PREPARATION
883 HODGKIN'S DISEASE
884 HYPOGLYCEMIA
885 IMMUNE RESPONSE AFFECTING DRUG
886 INFLAMMATION, SKIN
887 .Topical Treatment
888 INFLUENZA
889 INTERFERON INDUCER
890 IRRITANT (e.g., tear gas, etc.)
891 KIDNEY STONE
892 LAXATIVE
893 LIVER DISORDER
894 .Hepatitis
895 MALARIA
896 MEASLES
897 .Rubella
898 MENINGITIS
899 MENSTRUAL DISORDER
MOUTH TREATMENT
900 .Periodontitis
901 .Mouthwash
902 .Gingival
903 MULTIPLE SCLEROSIS
904 MULTIPLE VITAMINS
905 .With mineral
906 MUSCLE RELAXANT
907 MUSCULAR DYSTROPHY
908 LEUKEMIA
909 OBESITY
910 .Anorectic
911 .Bulking agent
912 OPHTHALMIC
913 .Glaucoma
914 .Inflammation
915 .Wetting agent
916 PYRETIC
917 RADIOACTIVE, ANTI-
918 REPELLENT
919 .Insect
920 .Mammal
921 SHOCK
922 SIDE EFFECT REDUCTION BY INCORPORATION OF A SECOND DESIGNATED INGREDIENT
923 SLEEP AID (Insomnia)
924 TUBERCULOSIS
925 ULCER TREATMENT

ULCER TREATMENT
926 .Duodenal
927 .Peptic
928 .Topical
929 VASODILATOR
930 VASOCONSTRICTOR (nondecongestant)
931 VENERAL DISEASE
932 .Gonorrhea
933 .Syphilis
934 .Virus
935 UTERINE MOTILITY

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******************************
*ART COLLECTIONS 936-975.....*
*EXCLUDE PRE 1965 PATENTS....*
*ISSUED FROM 260 AND 530.....*
*SERIES CLASSES. ............*
*............................*
*LIQUID CARRIER, DILUENT OR..*
*SOLVENT.....................*
*............................*
*ART COLLECTIONS 936-975.....*
*EXCLUDE PRE 1965 PATENTS....*
*ISSUED FROM CLASS 260 AND...*
*THE CLASS 532-570 SERIES....*
*AND CLASS 585. .............*
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LIQUID CARRIER, DILUENT OR SOLVENT
936 DMSO CONTAINING
937 DISPERSION OR EMULSION
938 .Oil-water type
939 ..Mineral oil-water type
940 ...Quick break type
941 ...Polyoxyalkylated compound containing
942 ...Organic sulfonate, sulfate or sulfite containing
943 ...Higher fatty acid or derivative containing
944 GEL
945 FOAM
946 PENETRANT OR ABSORBENT (ENHANCES PENETRATION INTO SUBJECT TREATED)
947 .Topical application
SOLID CARRIER OR SOLID DILUENT
948 SOLID CANDY TYPE
949 NATURALLY DERIVED CLAY (E.G., BENTONITE, ETC.)
950 MACROMOLECULAR (OTHER THAN SYNTHETIC RESINS)
951 POWDERS, GRANULES OR PARTICLES OF SPECIFIED MESH OR PARTICLE SIZE
952 .Wettable
953 SHAPED FORMS ADAPTED FOR NONINGESTIBLE USE OTHER THAN SUPPOSITORY TYPE (E.G., FILMS, INSERTS, ETC.)
954 .Ocular
955 ..Biodegradable type
956 .Aural or otic (i.e., ear)
GASEOUS OR GAS EMITTING CARRIER OR PROPELLANT
957 VAPOR EMMITTING COMPOSITION
958 FOR SMOKING OR INHALING
959 BREATHING GASES
PILL, LOZENGE, TABLET OR CAPSULE
960 SIGNIFICANT, TABLET FORMULATION (E.G., DESIGNATED EXCIPIENT, DISINTEGRANT, GLYDENT OR LUBRICANT, ETC.)
961 .Binder therefor
962 CAPSULE (E.G., GELATIN, ETC.)
963 .Microcapsule-sustained or differential release
964 SUSTAINED OR DIFFERENTIAL RELEASE TYPE
965 .Discrete particles in supporting matrix
SUPPOSITORY, BOUGIE OR BASE
966 RECTAL
967 VAGINAL
968 URETHRAL
969 OINTMENT OR SALVE BASE
SPECIAL DESIGNATED INGREDIENT
970 CONTAINING DESIGNATED INGREDIENT TO STABILIZE AN ACTIVE INGREDIENT
971 .Crystallization point depressant or cold stabilizer containing
972 .Ultraviolet light stabilizer containing
973 .Sulfur compound additive as stabilizer (e.g., sulfites, etc.)
974 CONTAINING DESIGNATED INGREDIENT TO REDUCE NOXIOUS EFFECTS OF ACTIVE INGREDIENT (E.G., TASTE MASKING, ODOR REDUCING, ETC.)
975 CHARACTERIZED BY THE DESIGNATED SURFACTANT USED

CLASS 518 CHEMISTRY FISCHER-TROPSCH PROCESSES; OR PURIFICATION OR RECOVERY OF PRODUCTS THEREOF

700 LIQUID PHASE FISCHER-TROPSCH REACTION
701 .Rhodium containing catalyst utilized
702 WITH PRELIMINARY REACTION TO FORM HYDROGEN OR A CARBON OXIDE
703 .Gaseous oxygen utilized in the preliminary reaction
704 .Water utilized in the preliminary reaction
705 TREATMENT OF FEED OR RECYCLE STREAM
706 PLURAL ZONES EACH HAVING A FISCHER-TROPSCH REACTION
707 .Diverse catalysts utilized in at least two zones
708 .Water utilized
709 INCLUDING REGENERATION OF CATALYST
710 .Solvent utilized
711 WATER UTILIZED DURING THE FISCHER-TROPSCH STEP OF THE PROCESS
712 TEMPERATURE CONTROL OR REGULATION OF THE FISCHER-TROPSCH REACTION
713 GROUP IB METAL CONTAINING CATALYST UTILIZED FOR THE FISCHER-TROPSCH REACTION (i.e., Cu, Ag, or Au)
714 GROUP VIB METAL CONTAINING CATALYST UTILIZED FOR THE FISCHER-TROPSCH REACTION (i.e., Cr, Mo, or W)
715 GROUP VIII METAL CONTAINING CATALYST UTILIZED FOR THE FISCHER-TROPSCH REACTION (i.e., Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, or Pt)
716 .Rhodium containing catalyst
717 .Group IA or IIA light metal containing material utilized during the Fischer-Tropsch step of the process (i.e., Li, Na, K, Rb, Cs, Be, Mg, Ca, Sr, or Ba)
718 ..In the form of a salt
719 .Iron containing catalyst
720 ..Pretreatment of the catalyst
721 ..The catalyst contains a metal in addition to the iron, or another material utilized contains a metal other than iron (e.g., as a promoter, retarder, etc.)
722 ADSORPTION WITH A SOLID MATERIAL
723 SALT CONTAINING EXTRACTANT UTILIZED
724 SOLVENT EXTRACTION UTILIZED
725 .Alcohol containing extractant utilized
726 HYDROGENATION WITH GASEOUS HYDROGEN TO PURIFY OR RECOVER
727 FORMING SALTS OR OXIMES OF OXYGEN CONTAINING COMPOUNDS TO PURIFY OR RECOVER
728 MISCELLANEOUS

CLASS 520 PART OF THE CLASS 520 SERIES -- SYNTHETIC RESINS OR NATURAL RUBBERS

DECEMBER 1990

Class 520, Synthetic Resins or Natural Rubbers, subclass 1, is to be considered an integral part of Class 260, while retaining all pertinent definitions and class lines of Class 260.

Class 520, subclass 1, is the generic subclass for synthetic resins or natural rubbers. All the other classes of the 520 Series, i.e., 521, 522, 523, 524, 525, 526, 527, and 528 are indented thereunder.

Retrieval of information in the Class 520 series is identical to retrieval of the information in any ordinary class that has subclasses rather than classes indented thereunder. Each of the classes indented, e.g., 521, 525, 528, etc., merely recites an art area that for convenience of numbering has been categorized as a class rather than a conventional subclass.

For ease of readability all of the one dot subclasses have been indicated by upper case letters.

The following notations have been adopted for use in the schedule of Class 520, subclass 1

SPIC - specified intermediate condensation product (consistent with Glossary)
SPFI - specified polymer-forming ingredient (consistent with Glossary)
SP - solid polymer (consistent with Class 520, subclass 1)
NRM - nonreactant material (defined in Class 523, subclass 1)
DNRM - designated nonreactant material (defined in Class 523, subclass 1)

Natural rubber is classified in the 520 series as if equivalent to a solid polymer derived from isoprene, e.g., from a reactant containing two or more ethylenic groups, etc.

1 SYNTHETIC RESINS OR NATURAL RUBBERS

CLASS 521 PART OF THE CLASS 520 SERIES -- SYNTHETIC RESINS OR NATURAL RUBBERS

DECEMBER 1990

SYNTHETIC RESINS (Class 520, Subclass 1)
25 .ION-EXCHANGE POLYMER OR PROCESS OF PREPARING
26 ..Process of regenerating
27 ..Membrane or process of preparing
28 ..Previously formed solid ion-exchange polymer admixed with nonreactive material or ion-exchange polymer
29 ..Polymer characterized by defined size or shape other than bead or pearl
30 ..Chemically treated solid polymer
31 ...Solid polymer derived from ethylenically unsaturated reactant only
32 ....Treated with nitrogen-containing material
33 ....Treated with sulfur-containing material
34 ...Solid polymer derived from at least one 1,2-epoxy containing reactant
35 ...Solid polymer derived from aldehyde or derivative
36 ....Treated with nitrogen-containing material
37 ....Treated with sulfur-containing reactant
38 ..From ethylenically unsaturated reactant only
39 ..From aldehyde or derivative
40 .PROCESS OF TREATING SCRAP OR WASTE PRODUCT CONTAINING SOLID ORGANIC POLYMER TO RECOVER A SOLID POLYMER THEREFROM
40.5 ..Process of treating scrap or waste product containing at least one polymer derived from ethylenic unsaturated monomers only
41 ...Treating rubber (or rubberlike materials) or polymer derived from a monomer having at least two ethylenic unsaturated moieties
41.5 ....Treating with organic phosphorus-containing material
42 ....Treating with organic nitrogen-containing material
42.5 ....Treating with organic chalcogen-containing material
43 .....Containing organic sulfur
43.5 .....Containing carboxylic acid or anhydride group
44 .....Containing hydroxyl group
44.5 ....Treating with hydrocarbon or halogenated hydrocarbon material
45 ....Treating with steam or water
45.5 ....Treating with mechanical action and in the absence of a chemically reactive additive or solvent
46 ...Treating polymer derived from a monomer containing only carbon, hydrogen, and halogen or only carbon and halogen; or treating a polymer which has been derived from at least one hydrocarbon and which has been subsequently halogenated
46.5 ....Treating polymer derived from vinyl chloride monomer
47 ...Treating polymer derived from hydrocarbon monomers only
47.5 ..Treating polysiloxane
48 ..Treating polyester
48.5 ...Treating with alcohol
49 ..Treating polyurethane, polyurea (excluding urea-formaldehyde polymers), polyisocyanurate or polycarbodiimide
49.5 ...Treating with alcohol or amine
49.8 ..Treating polycarbonamide
50 .CELLULAR PRODUCTS OR PROCESSES OF PREPARING A CELLULAR PRODUCT, E.G., FOAMS, PORES, CHANNELS, ETC.
50.5 ..Compositions to be polymerized by wave energy in order to prepare a cellular product wherein said composition contains a rate-affecting material; or compositions to be modified by wave energy to prepare a cellular product wherein said composition contains a rate-affecting material; or processes of preparing or treating a solid polymer utilizing wave energy in order to prepare a cellular product
51 ..Processes of preparing a cellular product having an integral skin
52 ..Reticulated cellular product or processes of preparing a reticulated cellular product
53 ..Treating a cellular solid polymer by adding a material thereto which reacts with the polymer or forms a composition therewith, or products of said treating process
54 ...Treating a cellular solid polymer by adding a solid polymer or solid polymer-forming composition
55 ...Treating a cellular solid polymer by adding a material thereto which forms a composition therewith
56 ..Particle which is expandible, process of preparing an expandible particle, or process of expanding a particle to form a cellular product
57 ...Including step of surface coating a particle or process of expanding a surface coated particle
58 ...Expanding utilizing plural expansion steps
59 ...Expandible system contains two or more solid polymers or at least one solid polymer and at least one polymer-forming system
60 ...Adding expanding agent subsequent to solid polymer formation
61 ..Process of preparing a cellular product by removal of material from a solid polymer-containing matrix without expanding the matrix; composition which is nonexpandible and is designed to form a cellular product by said process; or process of preparing said composition
62 ...Mixture of solid polymers present during cell formation
63 ...Cellular product-forming process wherein the removable material is present or is produced in situ during the solid polymer formation step
64 ...Removing a liquid to form a cellular product
65 ..Process of forming a cellular product from an aqueous latex, aqueous dispersion, or aqueous emulsion containing a solid polymer; process of preparing a latex, dispersion, or emulsion containing a solid polymer which is designed to be formed into a cellular product, or composition thereof
66 ...Treating a latex, dispersions, or emulsion containing a solid polymer at 32 degrees F. or below, e.g., freezing, etc.

SYNTHETIC RESINS (Class 520, Subclass 1)

.CELLULAR PRODUCTS OR PROCESSES OF PREPARING A CELLULAR PRODUCT, E.G., FOAMS, PORES, CHANNELS, ETC.

..Process of forming a cellular product from an aqueous latex, aqueous dispersion, or aqueous emulsion containing a solid polymer; process of preparing a latex, dispersion, or emulsion containing a solid polymer which is designed to be formed into a cellular product, or composition thereof

67 ...Adding -N=C=X material to a latex, dispersion, or emulsion containing a solid polymer

68 ...Adding fibrous material to a latex, dispersion, or emulsion containing a solid polymer

69 ...Latex, dispersion, or emulsion contains an additional solid polymer-forming system

70 ...Latex, dispersion, or emulsion contains two or more solid polymers

71 ...Solid polymer is derived from a conjugated diene monomer

72 ...Utilizing cell forming agent other than air

73 ..Process of preparing a cellular product of a plastisol of a solid polymer derived solely from ethylenically unsaturated monomers; forming a plastisol of a solid polymer derived solely from an ethylenically unsaturated monomer which is designed to be formed into a cellular product, or composition thereof

74 ...By incorporation of material in gaseous state

75 ...System contains two or more solid polymers or contains at least one solid polymer and at least one polymer-forming system

76 ..Preparing a cellular product utilizing a stated ingredient which is surface coated or is a discrete solid particle containing a fluid encapsulated therein, processes of forming an expandible composition, containing said stated ingredient or composition therefrom

77 ..Preparing a cellular product by decomposition of a solid polymer; or process of forming a composition containing a solid polymer which decomposes so as to subsequently form a cellular polymer, or composition therefrom

78 ..Preparing a cellular product by spraying a solid polymer containing material

79 ..Extruding a solid polymer containing material to form a cellular product

80 ...Including solid polymer formation in or during extruding step

81 ...System contains a mixture of solid polymer or at least one solid polymer and at least one solid polymer-forming system

82 ..Process of forming a cellular product subsequent to solid polymer formation in the presence of a stated ingredient, noncellular composition capable of forming a cellular product and containing a stated ingredient, or process of preparing same

83 ...Ingredient is asphaltic, bituminous, or water settable inorganic material, e.g., cement, plaster of Paris, etc.

84.1 ...Ingredient is protein, carbohydrate, or natural resin

85 ...Ingredient contains a boron or phosphorus atom

86 ...Ingredient is organic silicon compound

87 ...Ingredient is aldehyde or ketone

88 ...Ingredient is ether, alcohol, or inorganic alcoholate, e.g., phenol, etc.

89 ...Ingredient contains a sulfur atom

90 ...Ingredient is a heterocyclic compound

91 ...Ingredient contains a silicon atom

92 ...Ingredient contains a metal atom

93 ....Metal atom is part of an organic compound

94 ...Ingredient is a nitrogen containing compound

95 ....Nitrogen compound contains a nitrogen atom bonded to a nitrogen or oxygen atom

96 ...Ingredient contains an -O-O- group

97 ...Ingredient contains a carbon atom double-bonded to oxygen, e.g., carbon dioxide, carboxylic acid, etc.

98 ...Ingredient contains only C and H atoms, only C and halogen atoms, or only C, H, and halogen atoms

99 ..Cellular product formation prior to or during solid polymer formation in the presence of a stated ingredient other than water

100 ...Ingredient is water settable inorganic composition

101 ...Ingredient is bituminous or asphaltic material

102 ...Ingredient is a protein containing material

103 ...Ingredient contains a boron atom

104 ....Boron trihalide or complex thereof

105 ....Boron atom is part of an organic compound

106 ...Ingredient contains a phosphorus atom

107 ....Phosphorus atom is part of an organic compound

108 .....Organic phosphorus compound contains a phosphorus atom bonded to an atom other than oxygen

109.1 ...Ingredient is carbohydrate, or natural resin

110 ...Ingredient contains a silicon atom as part an organic compound

111 ....Organic silicon atom compound contains an atom other than oxygen, hydrogen, silicon, or carbon

112 ....Organic silicon compound contains an ether group

113 ...Ingredient is aldehyde or ketone

114 ...Ingredient contains a -C-X-C- group wherein X is a chalcogen atom and none of the C atoms bonded to the chalcogen are double-bonded to an additional chalcogen atom

SYNTHETIC RESINS (Class 520, Subclass 1)

.CELLULAR PRODUCTS OR PROCESSES OF PREPARING A CELLULAR PRODUCT, E.G., FOAMS, PORES, CHANNELS, ETC.

..Cellular product formation prior to or during solid polymer formation in the presence of a stated ingredient other than water

...Ingredient contains a -C-X-C- group wherein X is a chalcogen atom and none of the C atoms bonded to the chalcogen are double-bonded to an additional chalcogen atom

115 ....-C-X-C- compound contains a nitrogen atom

116 ....-C-X-C- compound contains a -C-XH group wherein X is a chalcogen atom

117 ...Ingredient contains a -C-XH group wherein X is a chalcogen atom and the carbon atom is not double-bonded to a chalcogen atom, phenol, etc.

118 ....-C-XH ingredient contains a nitrogen atom

119 ...Ingredient is inorganic halogen containing material

120 ...Ingredient contains a sulfur atom

121 ....Sulfur atom is part of an organic compound

122 ...Ingredient contains a silicon atom

123 ...Ingredient contains a metal atom

124 ....Metal atom is part of an organic compound

125 .....Organic metal compound contains a Group I or Group II metal atom

126 .....Organic metal compound contains tin

127 ......Tin compound is dibutyl tin dilaurate or stannous octoate

128 ...Ingredient is a nitrogen containing compound

129 ....Nitrogen compound contains a nitrogen atom bonded to three carbon atoms and wherein none of the carbon atoms are double-bonded to oxygen

130 ...Ingredient contains a carbon atom double bonded to oxygen, e.g., carboxylic acid, etc.

131 ...Ingredient contains only carbon and hydrogen atoms, only C and halogen atoms, or only C, H, and halogen atoms

132 ....Said ingredient is substantially nonvolatile material, e.g., hydrocarbon waxes, greases, etc.

133 ...Ingredient is gaseous at ambient conditions, e.g., air, oxygen, etc.

134 ..Cellular product derived from two or more solid polymers or from at least one solid polymer and at least one polymer-forming system

135 ...At least one polymer is derived from reactant containing two or more three-membered heterocyclic rings having two carbon atoms and one chalcogen atom or polymer-forming system contains the same type of reactant

136 ...At least one polymer is derived from an aldehyde or derivative or wherein the polymer-forming system contains the same type of reactant

137 ...At least one polymer is derived from a -N=C=X reactant wherein X is a chalcogen atom or wherein the polymer-forming system contains the same type of reactant

138 ...At least one polymer is derived from a polycarboxylic acid or derivative and a polyol or wherein the polymer-forming system containing the same type of reactants

139 ...At least one polymer is derived from an ethylenically unsaturated aromatic reactant or wherein the polymer-forming system contains the same type of reactant

140 ...At least one polymer is derived from reactant containing two or more ethylenic groups or wherein the polymer-forming system contains the same type of reactant

141 ..Cellular vinyl alcohol polymer

142 ..Cellular product derived from ethylenically unsaturated reactants only

143 ...From acyclic mono-unsaturated hydrocarbon as only reactant

144 ....Interpolymer

145 ...From acyclic mono-unsaturated halogenated reactant

146 ...From aromatic reactant

147 ....With oxygen or nitrogen containing reactant

148 ....With conjugated diene reactant

149 ...From oxygen containing reactant

150 ...From reactant containing two or more ethylenic unsaturated groups

151 ..Cellular polymer derived from tar, pitch, bitumen, asphalt, or plant material of unknown constitution, e.g., nut shell liquor, etc.

152 ..Cellular product derived from boron containing reactant

153 ..Cellular product derived from aluminum or heavy metal containing reactant

154 ..Cellular product derived from silicon containing reactant

155 ..Cellular product derived from a -N=C=X containing reactant wherein X is a chalcogen atom

156 ...With three-membered heterocyclic reactant containing two carbon atoms and a hetero atom (i.e., nitrogen or a chalcogen atom)

157 ...With a C-C(=X)-XH or C-C(=X)-X-C(=X)-C- reactant wherein X is a chalcogen atom, e.g., carboxylic acid or anhydride, etc.

158 ...With ketone, aldehyde, or aldehyde derivative

159 ...N=C=X reactant having at least two C-NH-C(=X)- groups, e.g., prepolymers, etc.

160 ...Two or more N=C=X reactants

161 ...N=C=X reactant contains a heterocyclic ring

162 ...N=C=X reactant contains atoms other than carbon and hydrogen and other than nitrogen and chalcogen as part of the N=C=X group

163 ...With nitrogen containing reactant

164 ....Nitrogen reactant contains a C-XH group wherein X is a chalcogen atom and wherein the C atom is not double-bonded to a chalcogen atom

165 .....Phosphorus containing reactant

	SYNTHETIC RESINS (Class 520, Subclass 1)
	.CELLULAR PRODUCTS OR PROCESSES OF PREPARING A CELLULAR PRODUCT, E.G., FOAMS, PORES, CHANNELS, ETC.
	..Cellular product derived from a -N=C=X containing reactant wherein X is a chalcogen atom
	...With nitrogen containing reactant
	....Nitrogen reactant contains a C-XH group wherein X is a chalcogen atom and wherein the C atom is not double-bonded to a chalcogen atom
166	.....Nitrogen reactant contains a nitrogen containing heterocyclic ring
167	.....Nitrogen reactant contains a N-(C-C-O)-group
168	...With phosphorus containing reactant
169	....Phosphorus reactant contains a -O-(C-C-O-)-group
170	...With -XH reactant wherein X is a chalcogen atom
171	....-XH reactant contains a halogen atom
172	....-XH reactant contains a C=X group, e.g., carboxylic acid ester, etc.
173	.....With non -C=X containing reactant
174	....-XH reactant contains a C-X-C group
175	.....C-X-C reactant contains a carbohydrate group
176	.....With non -C-X-C- containing reactant
177	.....C-X-C reactant contains a carbocyclic ring, e.g., aromatic, etc.
178	..Cellular product derived from a reactant containing two or more three-membered heterocyclic rings wherein two of the ring members are carbon atoms and the remaining ring member is a chalcogen atom
179	...With -C(=X)-X containing reactant wherein X is a chalcogen atom
180	..Cellular product derived from a phenol, phenol ether, or inorganic phenolate reactant
181	...With reactant which is an aldehyde or aldehyde derivative
182	..Cellular product derived from a -C-C(=X)-X containing reactant wherein X is a chalcogen atom, e.g., phthalic acid, etc.
183	...Nitrogen containing reactant
184	....Nitrogen reactant contains at least two amino nitrogen atoms
185	.....Carbocyclic reactant containing -C-C(=X)-X, e.g., containing carboxyl, etc.
186	..Cellular product derived from reactant which is an aldehyde or aldehyde derivative
187	...Nitrogen containing reactant
188	....Nitrogen reactant contains a -N-C(=X)-N group wherein X is a chalcogen atom, e.g.,urea, etc.
189	..Cellular product derived from reactant containing a carbon to chalcogen bond

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CROSS-REFERENCE ART COLLECTIONS

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901	CELLULAR POLYMER CONTAINING A CARBODIIMIDE STRUCTURE
902	CELLULAR POLYMER CONTAINING AN ISOCYANURATE STRUCTURE
903	CELLULAR POLYMER HAVING REDUCED SMOKE OR GAS GENERATION
904	POLYURETHANE CELLULAR PRODUCT HAVING HIGH RESILIENCY OR COLD CURE PROPERTY
905	HYDROPHILIC OR HYDROPHOBIC CELLULAR PRODUCT
906	POLYURETHANE CELLULAR PRODUCT CONTAINING UNREACTED FLAME-RETARDANT MATERIAL
907	NONURETHANE FLAMEPROOFED CELLULAR PRODUCT
908	NUCLEATING AGENT FOR CELLULAR PRODUCT
909	BLOWING-AGENT MODERATOR, E.G., KICKERS, ETC.
910	PLURAL BLOWING AGENTS FOR PRODUCING NONPOLYURETHANE CELLULAR PRODUCTS
911	SURFACTANT FOR OTHER THAN POLYURETHANE CELLULAR PRODUCT
912	SEPARATED REACTIVE MATERIALS UTILIZED IN PREPARING CELLULAR PRODUCT
913	CELL FORMING IN ABSENCE OF EXTERNAL HEAT
914	POLYURETHANE CELLULAR PRODUCT FORMED FROM A POLYOL WHICH HAS BEEN DERIVED FROM AT LEAST TWO 1,2 EPOXIDES AS REACTANTS
915	UTILIZING ELECTRICAL OR WAVE ENERGY DURING CELL FORMING PROCESS
916	CELLULAR PRODUCT HAVING ENHANCED DEGRADABILITY
917	SPECIALIZED MIXING APPARATUS UTILIZED IN CELL FORMING PROCESS
918	PHYSICAL AFTERTREATMENT OF A CELLULAR PRODUCT
919	SINTERED PRODUCT
920	CELLULAR PRODUCT CONTAINING A DYE OR PIGMENT
921	PREPARING A NONPOLYURETHANE CELLULAR PARTICLE FROM A NONPARTICULATE MATERIAL

CLASS 522 PART OF THE CLASS 520 SERIES--SYNTHETIC RESINS OR NATURAL RUBBERS

SYNTHETIC RESINS (Class 520, Subclass 1)

1 .COMPOSITIONS TO BE POLYMERIZED BY WAVE ENERGY WHEREIN SAID COMPOSITION CONTAINS A RATE-AFFECTING MATERIAL; OR COMPOSITIONS TO BE MODIFIED BY WAVE ENERGY WHEREIN SAID COMPOSITION CONTAINS A RATE-AFFECTING MATERIAL; OR PROCESSES OF PREPARING OR TREATING A SOLID POLYMER UTILIZING WAVE ENERGY

2 ..Processes of forming or modifying a solid polymer by laser; or compositions therefore

3 ..Processes of forming or modifying a solid polymer wherein specified mixing, stirring, agitating, movement of material or directional orientation is employed; or compositions therefore

4 ..Processes of forming or modifying a solid polymer by wave energy wherein at least two distinct external radiant energy sources are utilized; or compositions therefore

5 ..Processes of forming or modifying a solid polymer by wave energy wherein a temperature less than 0 degree C (32 degree F) or greater than 250 degree C (482 degree F) is employed; or compositions therefore

6 ..Compositions to be polymerized or modified by wave energy wherein said composition contains at least one specified rate-affecting material; or processes of preparing or treating a solid polymer utilizing wave energy in the presence of at least one specified rate-affecting material; e.g., nitrogen containing photosensitizer, oxygen containing photoinitiator, etc.

7 ...Contains two or more rate-affecting materials, at least one of which is specified

8 ....At least two specified rate-affecting materials containing keto group not part of a ring; or contains a nonspecified photoinitiator or photosensitizer and specified ketone containing material wherein the keto group is not part of a ring

9 .....With a heterocyclic specified rate-affecting material

10 .....With a tertiary amine specified rate-affecting material

11 ....Contains compound containing keto group not part of a ring and nonspecified rate-affecting material other than mere photoinitiator or photosensitizer

12 ....Contains compound containing keto group not part of a ring and a specified rate-affecting material; or contains a specified rate-affecting material and a nonspecified photoinitiator or photosensitizer

13 .....Specified rate-affecting material is a peroxide or azo compound

14 .....Specified rate-affecting material is an amide or tertiary amine

15 .....Specified rate-affecting material contains onium group

16 .....Specified rate-affecting material is heterocyclic

17 .....Specified rate-affecting material contains sulfur

18 .....Specified rate-affecting material contains phosphorous, arsenic, antimony or nitrogen atom

19 .....Specified rate-affecting material is an aldehyde or aldehyde derivative

20 .....Specified rate-affecting material is a carboxylic acid or derivative

21 .....Specified rate-affecting material contains C-OH or C-O-C group

22 .....Specified rate-affecting material contains an inorganic compound

23 .....Specified rate-affecting material contains only carbon, hydrogen, or halogen and at least one atom of carbon is bonded to hydrogen or a halogen atom

24 ....Specified rate-affecting material is a peroxide

25 ....Specified rate-affecting material contains onium group

26 ....Specified rate-affecting material is heterocyclic

27 ....Specified rate-affecting material contains sulfur

28 ....Specified rate-affecting material contains phosphorous, arsenic, antimony or nitrogen

29 ....Specified rate-affecting material is a metal-containing organic compound

30 ....Specified rate-affecting material is organic

31 ...Specified rate-affecting material contains onium group

32 ....Diazonium containing material

33 ...Specified rate-affecting material contains keto group not part of a ring

34 ....Containing ethylenic unsaturation

35 ....Contained in polymeric rate-affecting material, e.g., synthetic resin, etc.

36 ....Containing two or more ketone groups

37 .....Adjacent (C=O)* groups where * is at least two

38 ....Containing phosphorous

39 ....Containing nitrogen

40 ....Containing C-CO-CHOH, e.g., benzoin, etc.

41 .....Containing C-CO-CHOH-CHOR wherein R is organic

42 ....Containing C-CO-C(R)(OH) wherein R is organic

43 ....Containing C-CO-C(H)(OR) wherein R is organic, e.g., benzoin methyl ether, etc.

44 ....Containing C-CO-C(R)(OR) wherein R is organic, e.g., diethoxyacetophenone, etc.

45 ....Containing halogen, e.g., chloroacetone, etc.

46 ....At least two aryl groups connected directly to same carbonyl carbon, e.g., benzophenone, etc.

47 ...Specified rate-affecting material is a quinone

48 ....Quinone ring is part of polynuclear system, e.g., anthraquinone, etc.

49 ...Specified rate-affecting material contains chalcogen other than as oxygen

50 ....Hetero nitrogen ring

51 .....Containing mercapto or mercaptide group, e.g., (thio)mercaptobenzoxazole, etc.

SYNTHETIC RESINS (Class 520, Subclass 1)
.COMPOSITIONS TO BE POLYMERIZED BY WAVE ENERGY WHEREIN SAID COMPOSITION CONTAINS A RATE-AFFECTING MATERIAL; OR COMPOSITIONS TO BE MODIFIED BY WAVE ENERGY WHEREIN SAID COMPOSITION CONTAINS A RATE-AFFECTING MATERIAL; OR PROCESSES OF PREPARING OR TREATING A SOLID POLYMER UTILIZING WAVE ENERGY
..Compositions to be polymerized or modified by wave energy wherein said composition contains at least one specified rate-affecting material; or processes of preparing or treating a solid polymer utilizing wave energy in the presence of at least one specified rate-affecting material; e.g., nitrogen containing photosensitizer, oxygen containing photoinitiator, etc.
...Specified rate-affecting material contains chalcogen other than as oxygen
....Hetero nitrogen ring
52 .....Containing halogen
53 ....Hetero sulfur ring
54 ....C-(S)*-C wherein * is at least two
55 ....Sulfide
56 ....Mercapto group attached directly to aromatic ring, e.g., thiophenol, etc.
57 ....Nitrogen containing compound
58 ....Sulfenate, e.g., R-O-S-R, etc.
59 ....(O=S=O), e.g., sulfuryl or sulfonyl containing, etc.
60 ...Specified rate-affecting material is a peroxide
61 ....Hydroperoxide
62 ...Specified rate-affecting material contains a C-N=N-C-group
63 ...Specified rate-affecting material contains nitrogen or oxygen atom in heterocyclic ring
64 ...Specified rate-affecting material contains phosphorous
65 ...Specified rate-affecting material contains nitrogen
66 ...Specified rate-affecting material contains metal atom
67 ...Specified rate-affecting material contains halogen
68 ...Specified rate-affecting material contains oxygen
69 ....Phenolic, e.g., hydroquinone, etc.
70 ...Specified rate-affecting material contains only carbon and hydrogen
71 ..Processes of preparing or treating a solid polymer by wave energy in the presence of a designated nonreactant material (DNRM); or compositions therefore
72 ...Carbohydrate or derivative DNRM
73 ...Coal, asphaltic, or bituminous material DNRM
74 ...Organic DNRM
75 ....Heterocyclic ring containing DNRM
76 ....Phosphorous containing DNRM
77 ....Silicon containing DNRM
78 ....Nitrogen containing DNRM
79 ....Oxygen containing DNRM
80 ....Carbon and hydrogen only containing DNRM
81 ...Heavy metal containing DNRM
82 ...Phosphorous or sulfur containing DNRM
83 ...Oxygen containing DNRM
84 ....Water
85 .....Reacting an ethylenic monomer in the presence of a solid polymer
86 .....Treating a solid polymer
87 ..Processes involving protein as reactant or as solid polymer; or compositions therefore
88 ..Processes involving carbohydrate as reactant or as solid polymer; or compositions therefore
89 ...Preparing a polymer from carbohydrate and ethylenic reactant
90 ..Processes involving a polyurethane having terminal ethylenic unsaturation as reactant or as solid polymer; or compositions therefore
91 ...With a polysiloxane reactant or polymer
92 ...With a reactant containing ethylenic unsaturation derived from poly 1,2-epoxide or polymer
93 ...With polycarboxylic acid or derivative and a polyol, a condensate or solid polymer thereof reactant
94 ...With aldehyde or aldehyde derivative reactant, condensate or solid polymer thereof
95 ...With solid polymer derived solely from ethylenic monomers
96 ...With ethylenic reactant
97 ...Polyurethane has an oxygen other than as part of a urethane or carboxylic acid ester group
98 ...Polyurethane has at least one non-terminal ethylenic group
99 ..Processes involving a polysiloxane having ethylenic unsaturation as reactant or as solid polymer; or compositions therefore
100 ..Processes involving an ethylenically unsaturated material derived from poly 1,2-epoxide as reactant or a solid polymer; or compositions thereof
101 ...With polycarboxylic acid or derivative and a polyol, condensate or solid polymer thereof
102 ...With solid polymer derived solely from ethylencally unsaturated monomers
103 ...With ethylenic reactant
104 ..Processes involving an ethylenically unsaturated polyester derived from a polycarboxylic acid or derivative and polyol, condensate or solid polymer thereof; or compositions therefore
105 ...With aldehyde or aldehyde derivative reactant or polymer thereof
106 ...With solid polymer derived from ethylenically unsaturated monomers only
107 ...With ethylenic reactant
108 ...Condensate or solid polymer contains oxygen other than as part of a carboxylic acid ester moiety
109 ..Processes of chemically modifying a blend of two or more solid polymers in the presence of a chemical reactant; or compositions therefore
110 ...At least one solid polymer derived from ethylenic monomers has at least two ethylenic groups
111 ..Processes of treating a blend of two or more solid polymers or reacting one solid polymer with another solid polymer; or compositions therefore

SYNTHETIC RESINS (Class 520, Subclass 1)

.COMPOSITIONS TO BE POLYMERIZED BY WAVE ENERGY WHEREIN SAID COMPOSITION CONTAINS A RATE-AFFECTING MATERIAL; OR COMPOSITIONS TO BE MODIFIED BY WAVE ENERGY WHEREIN SAID COMPOSITION CONTAINS A RATE-AFFECTING MATERIAL; OR PROCESSES OF PREPARING OR TREATING A SOLID POLYMER UTILIZING WAVE ENERGY

..Processes of treating a blend of two or more solid polymers or reacting one solid polymer with another solid polymer; or compositions therefore

112 ...At least two solid polymers derived from ethylenic monomers only

113 ..Processes of chemically modifying a solid polymer derived only from ethylenically unsaturated monomers by treating polymer with a chemical reactant; or compositions therefore

114 ...Chemical reactant is ethylenically unsaturated

115 ....Phosphorus

116 ....Nitrogen

117 .....Chemical reactant has two or more ethylenic groups

118 ....Sulfur

119 .....Chemical reactant has two or more ethylenic groups

120 ....Oxygen

121 .....Chemical reactant has two or more ethylenic groups

122 .....Hetero oxygen

123 .....Contains C-OH group other than as part of a COO-moiety

124 ....Carbon, hydrogen and halogen or carbon and halogen only

125 ....Carbon and hyrogen only

126 ...Chemical reactant contains nitrogen

127 ...Chemical reactant contains sulfur

128 .] ..Elemental sulfur

129 ...Chemical reacant contains oxygen

130 ....Contains C=O moiety

131 ...Chemical reactant is elemental halogen

132 ....Solid polymer treated contains halogen

133 ....Solid polymer derived from single monomer

134 ..Processes of chemically modifying a solid polymer or SICP derived from at least one saturated monomer by treating solid polymer or SICP with a chemical reactant; or compositions therefor

135 ...Chemical reactant is ethylenically unsaturated

136 ....Nitrogen

137 .....Chemical reactant has two or more ethylenic groups

138 .....Hetero nitrogen

139 .....N-C=O containing

140 ......Two or more N-C=O groups

141 ....Chalcogen

142 .....Chemical reactant has two or more ethylenic groups

143 .....Hetero oxygen

144 .....Carboxylic acid or derivative

145 ....Chemical reactant has two or more ethylenic groups and contains only carbon and hydrogen

146 ...Chemical reactant contains chalcogen

147 ...Chemical reactant contains halogen

148 ..Processes of treating a solid polymer or SICP derived from silicon containing reactant; or compositions therefore

149 ..Processes of treating a reaction product of a solid polymer and ethylenic reactant; or compositions therefore e.g., graft- or graft-type polymer, etc.

150 ..Processes of treating a solid polymer derived from ethylenic monomers only; or compositions therefore

151 ...Solid polymer derived from nitrogen containing monomer

152 ....Nitrogen containing monomer contains oxygen

153 ...Solid polymer derived from carboxylic acid or derivative monomer

154 ....Oxygen other than as part of carboxylic acid or derivative moiety

155 ...Solid polymer derived from halogen containing monomer

156 ....Halogen is fluorine

157 ...Solid polymer derived from monomer containing only carbon and hydrogen

158 ....At least one reactant contains two or more ethylenic groups

159 .....Polyisoprene or natural rubber

160 ....Carbocyclic ring containing, e.g., styrene, etc.

161 ....Derived from ethylene

162 ..Processes of treating a solid polymer or SICP derived from at least one nonethylenic reactant or compositions therefore

163 ...Solid polymer or SICP derived from reactant having halo-C(=O)-halo,halo-C(=O)-O, or -O-C(=O)-O-group

164 ...Solid polymer or SICP derived from polycarboxylic acid or derivative and organic amine or from organic amine salt of a polycarboxylic acid

165 ...Solid polymer or SICP derived from polycarboxylic acid or derivative and polyol

166 ...Solid polymer or SICP derived from at least one heterocyclic monomer or aldehyde or aldehyde derivative

167 ..Processes of preparing a solid polymer from heterocyclic nitrogen monomers; or compositions therefore, e.g., carbazole, etc.

168 ..Processes of preparing a solid polymer from a heterocyclic chalogen monomer; or compsitions therefore

169 ...Two or more hetero atoms in hetero ring at least one of which is oxygen

170 ...1,2 epoxy

171 ..Processes of preparing a solid polymer from at least one phosphorous containing monomer; or compositions therefore

172 ..Processes of preparing a solid polymer from at least one silicon containing monomer; or compositions therefore

173 ..Processes of preparing a solid polymer from at least one nitrogen containing monomer; or compositions therefore

174 ...Nitrogen containing reactant contains a N-C=O or N-C=O moiety

175 ....Acrylamide or methacrylamide

176 ...Organic polyamine and polycarboxylic acid or derivative or from an organic amine salt of a polycarboxylic acid

177 ...Acrylonitrile or methacrylonitrile

SYNTHETIC RESINS (Class 520, Subclass 1)
.COMPOSITIONS TO BE POLYMERIZED BY WAVE ENERGY WHEREIN SAID COMPOSITION CONTAINS A RATE-AFFECTING MATERIAL; OR COMPOSITIONS TO BE MODIFIED BY WAVE ENERGY WHEREIN SAID COMPOSITION CONTAINS A RATE-AFFECTING MATERIAL; OR PROCESSES OF PREPARING OR TREATING A SOLID POLYMER UTILIZING WAVE ENERGY
178 ..Processes of preparing a solid polymer from at least one oxygen containing monomer; or compositions therefore
179 ...Polycarboxylic acid or derivative and polyol, or condensate thereof, e.g., dimethylterephthalate, etc.
180 ...Sulfur containing
181 ...Ether group
182 ...Carboxylic acid or derivative
183 ....Oxygen other than as part of a COO-group
184 ..Processes of preparing a solid polymer from ethylenic reactants only; or compositions therefore
185 ...Carbon, hydrogen and halogen only reactant contains at least three carbon atoms
186 ...At least one reactant contains two or more ethylenic groups
187 ...At least one reactant contains halogen
188 ...Derived from aromatic hydrocarbon
189 ...Derived from ethylene only
****
CROSS-REFERENCE ART COLLECTIONS
****
901 DARK STORAGE STABILIZER
902 AIR INHIBITION
903 REMOVAL OF RESIDUAL MONOMER
904 MONOMER OR POLYMER CONTAINS INITIATING GROUP
905 .Benzophenone group
906 PREPARING SHRINKABLE MATERIAL
907 INVOLVING PRECURSOR OF AN ULTRAVIOLET ABSORBER, E.G., MONOBENZOATE, ETC.
908 DENTAL UTILITY
909 SOLVENTLESS INK
910 TREATMENT THROUGH AN EXTERNAL FILTER OR MASK (NONPHOTOGRAGHIC PROCESS)
911 SPECIFIED TREATMENT INVOLVING MEGARAD OR LESS
912 .Polymer derived from ethylenic monomers only
913 NUMERICALLY SPECIFIED DISTINCT WAVELENGTH
914 .Wavelength of 200 nanometers or less
915 INVOLVING INERT GAS, STEAM, NITROGEN GAS, OR CARBON DIOXIDE

CLASS 523 PART OF THE CLASS 520 SERIES -- SYNTHETIC RESINS OR NATURAL RUBBERS

DECEMBER 1990

SYNTHETIC RESINS (Class 520, Subclass 1)

1 .PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF

100 ..Food or tobacco contact composition or process of preparing

101 ...Food release coating

102 ..Odor masked, odor reduced or perfumed composition or process of preparing

103 ..Composition having reduced health risks upon exposure thereto during incidental handling or body contact or process of preparing; other than fricton elements

105 ..Nonmedicated composition specifically intended for contact with living animal tissue or process of preparing; other than apparel

106 ...Contact lens making composition

107 ....Silicon-containing organic polymer

108 ....Polymer of a heterocyclic N-vinyl polymerizable compound

109 ...Dental or body impression taking material

111 ...Wound protective composition, tape adhesive, binder, or impregnate for body fluid absorbent device

112 ...Non-thrombogenic

113 ...Composition suitable for use as tissue or body member replacement, restorative, or implant

114 ....Composition which anchors by ingrowth of surrounding tissue

115 ....Composition suitable for use as tooth or bone replacement, restorative, or implant

116 .....Cement or filling composition

117 ......Radio- or X-ray opaque

118 ....Sealant or adhesive

120 ...Denture plate repair, adhesive, cushion or modification composition, e.g., modification of denture base to improve fit, etc.

121 ...Aperture affecting composition, e.g., earplug, dilator, etc.

122 ..Composition having ingredient providing biocidal or biostatic protection thereto or process of preparing

123 ..Plant receptacle composition or process of preparing

124 ..Composition containing an additive which enhances degradation by environmental stimuli or process of preparing

125 ...By light, heat, or radiation

126 ....Containing organic salt of a transition metal

127 ....Containing organohalogen additive

128 ...Containing carbohydrate or cellular material derived from plant or animal

129 ..Composition containing nonresinous organic material derived from municipal solid waste disposal system or process of preparing

130 ..Composition for plugging pores in wells or other subterranean formations; consolidating formations in wells or cementing a well or process of preparing

131 ...Composition for treating unconsolidated or loose strata, e.g., sand consolidation, etc.

132 ..Composition for in situ soil conditioning or treating or process of preparing

134 ..Battery container or battery container cover composition or process of preparing

135 ..Solar energy absorption or solar reflection composition or process of preparing

136 ..Composition sensitive to or resistant to radioactive material or cathode rays (e.g., electron bombardment, etc.) or process of preparing

137 ..Electromagnetic wave absorbing composition or process of preparing (excludes visible, IR or UV portions of spectrum)

138 ..Composition for contact with hot propulsion or exhaust gas or process of preparing

139 ..Composition related to metal foundry molding or metallurgical furnace or process of preparing

140 ...Hot-top or taphole plug composition or process of preparing

141 ...Composition for metallurgical furnace or oven or process of preparing

142 ...Organic polyisocyanate or derived from polyisocyanate

143 ....Phenolic, amine, or ketone condensate with aldehyde

144 ...Furan-type material

145 ...Phenolic or amine or ketone condensate with aldehyde

146 ....With or derived from carboxylic acid or salt thereof, or organic sulfur material

147 ....With or derived from organic hydroxyl group containing material containing eight or more carbon atoms

148 ...Polyester based

149 ..Friction element composition or process of preparing

150 ...Nonskid or nonslip composition for vehicle or pedestrian movement

152 ...For wheeled vehicle

153 ....Containing fibrous or polycrystalline refractory oxide

155 ....Composition devoid of asbestos

156 .....Containing at least two organic materials, e.g., binder plus other organic material, etc.

157 ....Containing at least two organic materials, e.g., binder plus other organic material, etc.

158 .....Composition contains a phenolic, amine, or ketone condensate with aldehyde plus a polymer derived from ethylenic monomers only

159 ....Containing asbestos and at least one inorganic material

160 ..Printing ink composition for glass or ceramic substrate or process of preparing

161 ..Invisible, ballpoint, or typewriter ink compositions or process of preparing; or composition for correction ribbons or correction fluids or process of preparing

164 ..Lead pencil or marking crayon composition or process of preparing

166 ..Composition for puncture proof tire liner or in emergency tire repair (e.g., tire inflation, etc.) or process of preparing

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF

167 ..Composition utilized in the manufacturing or repairing of shoes (excluding shoe heels or soles or polish) or process of preparing
168 ..Optical glass cementing or slide mounting composition or process of preparing
169 ..Antifogging or water repellent composition for optical or windshield application or process of preparing
170 ..Glass enamel composition or process of preparing
171 ..Composition having opalescent, pearlescent, or variegated color or process of preparing
172 ..Pavement or sign marking or reflex reflecting composition or process of preparing
173 ..Cable filling or flooding composition or process of preparing
174 ..Phonograph record molding composition or process of preparing
175 ..Liquid-solid drag reduction composition or process of preparing
176 ..Anaerobic adhesive or thread sealing composition or process of preparing
177 ..Coating or adhesive composition for application to a wet or contaminated surface (e.g., underwater or oil-contaminated, etc.) or process of preparing
179 ..Intumescent coating or ablative composition or process of preparing
180 ..Solid propellant binder composition or process of preparing
181 ..Composition devoid of magnetic materials and suitable for preparation of magnetic tape recording or process of preparing
200 ..Process of forming a composition of a solid polymer or solid polymer-forming system by admixing a product in the form of a surface coated, impregnated, encapsulated, or surface modified fiber, sheet, particle, or web, with a material; or composition which is the result of said admixing
201 ...Solid polymer particle enclosed in layer of diverse solid polymer, e.g., core-shell, etc.
202 ...Product having a monomeric ethylenic reactant material
203 ....Silicon ethylenic reactant
204 ...Product having an inorganic material surface coated onto an organic substrate
205 ...Product having a solid synthetic polymer or solid polymer-forming system
206 ....Product having two or more solid synthetic polymers, or a solid polymer and a solid polymer-forming system
207 ....Solid polymer or solid polymer-forming system is encapsulated in or impregnated in a nonreactant material
208 ....Solid polymer or solid polymer-forming system is or derived from an aldehyde or derivative
209 ....Product having a silicon atom
210 ...Product having a material encapsulated in or impregnated in a nonreactant material
211 ....Reactant or catalyst is material encapsulated or impregnated
212 ...Product having a silicon atom as part of an organic compound
213 ....Silicon containing organic material having an atom other than Si, C, H, or oxygen
214 ....Product having glass
215 ...Product having elemental carbon
216 ...Product having a silicon atom
217 ....Glass
218 ..Process of forming a composition having a nonreactant material selected for its special void characteristic; or composition containing same, e.g., syntactic foam, etc.
219 ...Glass void
220 ..Process of forming a composition having two or more solid materials having defined physical dimensions or surface areas; or composition containing same
221 ...Two or more solid synthetic polymers having defined physical dimension or surface area
222 ..Process of forming a composition having a fiber which is twisted, coiled, or involves specific mechanically interengaged fibers other than fibers solely of glass; or composition containing same, e.g., textiles, cloth, fiber bundles, mats, etc.
223 ..Process of forming a composition of a spheroidal material having physical dimension or composition containing same
300 ..Utilizing direct application of magnetic, electrical, or wave energy
303 ..Controlling process in response to a stated measurement or test
305 ..Adding material to maintain a stated equilibrium condition wherein the added material does not merely displace an equal amount from the treatment zone
306 ..Utilizing energy potential described as obtained as waste or by-product from a prior or concurrent operation
307 ..Utilizing a temperature greater than 250 degrees C (482 degrees F) or less than 0 degrees C
309 ...With removal or comminution of material at a temperature greater than 250 degrees C or less than 0 degrees C, e.g., freeze drying, etc.
310 ..Utilizing an ion exchanger or a solid sorptive material or semipermeable membrane
312 ..Utilizing quiescent treatment condition
313 ..Utilizing mixing in a manner designed to avoid or minimize turbulence or shear, e.g., laminar flow, etc.

SYNTHETIC RESINS (Class 520, Subclass 1)

.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF

315 ..Utilizing streams or masses moving relative to each other at a described angle of coincidence other than mere pouring, e.g., counter-current mixing, etc.

318 ..Utilizing stream or mass moving in a described attitude of presentment relative to a zone, vessel, or another apparently stationary mass or stream, excluding mere "pouring into", e.g., from above, below, tangentially, etc.

319 ..Utilizing treating or forming motion described by numerical data other than mere temperature, pressure, time, or amounts of material

322 ...Rotational rate (RPM) or velocity

323 ...Work input, e.g., horsepower-hour/pound, etc.

324 ..Utilizing a treatment zone specifically described by shape (other than nominally helical) or at least a part of which zone is specifically described by dimension, material, proportion, or angle or orientation

326 ..Adding steam or hot water (T at least 60 degrees C. i.e., 140 degrees F)

328 ...Removal of material by treatment with hot water or steam, e.g., steam stripping, etc.

330 ..Utilizing a gaseous stream to suspend or agitate a particulate solid polymer composition, e.g., fluidized bed, etc.

331 ..Drying a composition which is situated on a moving substrate or drying utilizing a thin film evaporator

332 ..Extracting material from solid polymer latex or aqueous dispersion or suspension with a liquid nonreactant material, e.g., solvent stripping, coprecipitation, etc.

333 ..Admixing a nonreactive additive ingredient in the form of a slurry, dispersion, or suspension (liquid-solid); said slurry dispersion or suspension containing no solid polymer or SICP

334 ...Slurried, dispersed, or suspended ingredient admixed with previously formed latex, aqueous dispersion or aqueous suspension of a solid polymer

335 ..Creaming, agglomerating, or coalescing a solid polymer latex or aqueous dispersion wherein solid polymer latex or aqueous dispersion is the result

336 ..Inverting phase relationships or reapportioning the distribution of ingredients among phases

337 ...Inversion to form water-in-oil system

339 ...With removal of a phase

340 ..Removing material at reduced pressure, e.g., flashing, sublimation, spray drying, etc.

342 ...With step of spraying or centrifuging

343 ..Treating an intentional composition with a step of removing and recycling material into the composition

344 ..Multistep operation achieved within a stated interval of time, e.g., total cycle time, etc.

346 ..Utilizing plural mixing operations of specified varying intensity, e.g., intensity of each mixing is reduced, etc.

347 ..Utilizing plural discrete pressures different than ambient

348 ..Utilizing plural interconnected distinct forming or treating zones or locations other than nominal screw extruder, e.g., zones interconnected in parallel or having varying flow velocity, etc.

351 ..Utilizing plural mixing operations in preparation of a solid polymer inert ingredient concentrate, e.g., master batch, etc.

352 ..Utilizing multistage coagulation of a solid polymer latex

353 ..Utilizing plural discrete mixing operations in specifically described distinct noninterconnected zones

375 ..Radioactive or Group VIIIA atom containing NRM

400 ..Process of forming a composition containing a nonreactive material (NRM) and a polymer containing more than one 1,2-epoxy group, or a preformed polymer derived from or admixed with a reactant containing more than one 1,2-epoxy group, or with a polymer derived from an epihalohydrin and a polyhydric phenol or polyol; or composition or product thereof

401 ...Contains inorganic water settable material NRM

402 ...Product contains water per se or water of hydration as designated nonreactive material (DNRM)

403 ....Two or more polymers containing more than one 1,2-epoxy group, two or more polymers derived from reactants containing more than one 1,2-epoxy group, or combination thereof, or one of said polymers and a reactant containing at least one 1,2-epoxy group

404 .....With organic nitrogen or organic sulfur reactant

406 ....Solid polymer derived from ethylenic reactants only (includes in situ reactants from plural 1,2-epoxides)

407 .....Polymer derived from ethylenic reactants only is graft, graft-type, block, or block-type copolymer

408 .....Two or more polymers derived from ethylenic reactants only

409 .....Polymer derived from ethylenic reactants only derived from reactant-containing chalcogen

410 ......Polymer derived from ethylenic reactant only derived from reactant-containing oxygen heterocycle

411 ......Polymer derived from ethylenic reactants only derived from reactant-containing nitrogen

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF
..Process of forming a composition containing a nonreactive material (NRM) and a polymer containing more than one 1,2-epoxy group, or a preformed polymer derived from or admixed with a reactant containing more than one 1,2-epoxy group, or with a polymer derived from an epihalohydrin and a polyhydric phenol or polyol; or composition or product thereof
...Product contains water per se or water of hydration as designated nonreactive material (DNRM)
....Solid polymer derived from ethylenic reactants only (includes in situ reactants from plural 1,2-epoxides)
.....Polymer derived from ethylenic reactants only derived from reactant-containing chalcogen
412 ......Polymer from ethylenic reactants only derived from reactant-containing carboxylic acid ester
413 .....Polymer derived from ethylenic reactants only derived from plural unsaturated reactant
414 ....Polymer contains more than one 1,2-epoxy group or one derived from reactant containing more than one 1,2-epoxy group is further derived from or reacted with organic nitrogen or sulfur
415 .....Organic nitrogen compound contains isocyanate group
416 .....Organic nitrogen compound is amine-aldehyde condensation product
417 .....Two or more organic nitrogen compounds as reactants
418 .....Organic nitrogen compound contains N-(C)*-(C=O)- group where *= subscript 0,1,2 . . ., e.g., protein, etc.
420 .....Organic nitrogen compound contains three or more nitrogen atoms other than as solid polymer, e.g., diethylene triamine, etc.
421 .....Organic nitrogen compound contains element other than C, H, O, or N
423 ....Polymer is graft, graft-type, block, or block-type copolymer
424 ....Polymer is phenol-aldehyde condensation product
425 ....Polymer derived from silicon reactant
426 ....Carboxylic acid, ester, or salt thereof DNRM
427 ...Composition wherein two or more polymers or a polymer and a reactant all contain more than one 1,2-epoxy group, or product thereof
428 ....With reactant nitrogen or sulfur compound
429 .....Organic nitrogen compound contains N-heterocycle
433 ....Polymer derived from reactant containing element other than C, H, O, or N or chlorine-containing reactant of three or more carbon atoms
434 ....Polymer derived from ethylenic reactants only
435 ...Solid polymer derived from reactant containing element other than C, H, O, or N or chlorine-containing reactant of three or more carbon atoms
436 ...Polymer is graft, graft-type, block, or block-type
437 ...Two or more polymers derived from ethylenic reactants only
438 ....Polymer derived from ethylenic reactants only derived from plural unsaturated reactant
439 ...Polymer derived from ethylenic reactants only derived from heterocyclic reactant other than 1,2-epoxy solely
440 ...Designated nonreactive material (DNRM) has numerically specified characteristics, e.g., particle size, density, etc., other than viscosity, m.p., b.p., molec. wt., chemical composition or percentage range
442 ....Heavy or transition metal or compound thereof
443 ....Silicon
444 .....Glass
445 ...Boron DNRM
446 ...Biologically derived cellular material other than cereal, cotton, or diatomaceous earth DNRM
447 ...Carbohydrate or derivative including tannin or derivative DNRM
448 ....Cellulose derivative containing -C(=O)OR or N
449 ...Protein or biologically active polypeptide DNRM
450 ...Coal, asphaltic, or bituminous material DNRM
451 ...Phosphorus DNRM
452 ....Phosphorus directly bonded to nitrogen
453 ...Organic sulfur compound DNRM
454 ...Ketone or aldehyde DNRM
455 ...Carboxylic acid or derivative devoid of heavy metal atom DNRM
456 ...Organic chalcogen compound DNRM
457 ...Elemental metal or metal compound other than as silicate DNRM
458 ....Transition metal
459 ....Heavy metal
460 .....Group VA metal (As, Sb, Bi)
461 ...Organic nitrogen compound DNRM
462 ...Halogenated hydrocarbon other than carbon tetrachloride, chloroform, or methylene chloride DNRM
463 ...Hydrocarbon other than xylenes, benzene, or toluene DNRM
464 ....Hydrocarbon having ethylenic unsaturation
465 ....Hydrocarbon wax
466 ...Inorganic SI-O bond DNRM
467 ....Polymer derived from ethylenic reactants only
468 ...Elemental carbon DNRM

SYNTHETIC RESINS (Class 520, Subclass 1)

.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF

500 ..Process of forming a composition of an ethylenically unsaturated reactant or ethylenically unsaturated polymer admixed with nonreactive material (NRM) and a polyester whose polymer backbone was derived through the direct formation of the ester linkage, e.g., polyethylene terephthalate, polycaprolactone, etc., or product thereof

501 ...Product contains water per se or water of hydration as DNRM or admixed with other designated nonreactant material

502 ....Composition contains water-in-oil or oil-in-water mixture

503 ....Organic nitrogen DNRM

504 ....Organic chalcogen DNRM

505 ....Metal compound other than silicate as DNRM

506 ...Phosphorus DNRM

507 ...Organic sulfur DNRM

508 ...Organic compound containing nitrogen DNRM

509 ...Carbohydrate or derivative including tannin or derivative DNRM

510 ...Phenol, phenol ether, or phenolate salt DNRM

511 ...Organic chalcogen other than metallocarboxylate salt, e.g., diethylene glycol, etc., DNRM

512 ...Elemental metal or elemental carbon DNRM

513 ...Designated nonreactive material (DNRM) has numerically specified characteristic, e.g., particle size, density, etc., other than viscosity, m.p., b.p., molec. wt., chemical composition or percentage range

514 ...Metal atom other than as silicate DNRM

515 ....Transition metal atom

516 ....Heavy metal atom

517 ...Halogenated hydrocarbon other than methylene chloride, chloroform, or carbon tetrachloride DNRM

518 ...Bituminous, coal, or hydrocarbon other than benzene, toluene, or xylene or mixtures thereof DNRM

521 ...Inorganic silicon atom other than glass DNRM

522 ...Contains graft, graft-type, block, or block-type copolymer

523 ...Contains solid polymer derived from ethylenic reactants only, one of which contains chalcogen; or solid polymer reacted with ethylenic reactant-containing chalcogen

526 ...Contains polymer derived from ethylenically unsaturated reactant only

527 ...Glass DNRM

SYNTHETIC RESINS (Class 520, Subclass 1)

.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.

1 ..Adding a NRM to a preformed solid polymer or preformed specified intermediate condensation product, composition thereof; or process of treating or composition thereof

2 ...Water settable inorganic compound as nonreactive material

3 ....Solid polymer or specified intermediate condensation product derived from reactant-containing atom other than C, H, O, N, or halogen and which is devoid of a fused or bridged ring system

4 ....Solid polymer or specified intermediate condensation product derived from at least one oxygen-containing reactant and which is devoid of a fused ring or bridged ring system

5 .....Derived from carboxylic acid or derivative

6 .....Derived from phenolic compound or aldehyde-containing reactant

7 ....Solid polymer derived from halogen-containing reactant

8 ....Solid polymer derived from ethylenically unsaturated hydrocarbon only

9 ...Cellular material derived from plant or animal source DNRM other than: cotton, farinaceous meals or flours, blood, diatomaceous earth, chalk, or other fossilized matter

10 ....Animal derived

11 .....Leather

12 .....Hair removed from pelt, e.g., wool, etc.

13 ....Wood or wood cellulose fiber or flour

14 .....At least one solid polymer or SICP derived from at least one nonethylenic reactant

15 ....Vegetable shell, hull, or cob ingredient, e.g., nut shells, pits, etc.

16 ....Bark or cork

17 ...Protein or biologically active polypeptide DNRM excluding wheat flour or natural cereals which may contain protein ingredient

18 ....With natural resin or carbohydrate DNRM

19 ....Hydrocarbon material DNRM which is nonsolid polymer, e.g., wax, etc.

20 ....Two or more diverse proteins or polypeptides

21 ....Animal derived protein or polypeptide other than casein, e.g., blood, egg albumin, etc.

22 .....Gelatin

23 ......Solid polymer derived from ethylenic reactants only

24 ....Derived from carboxylic acid or derivative

25 ....Casein or derivative or soy protein

26 .....Solid polymer or SICP derived from carboxylic acid or derivative

27 ...Carbohydrate or derivative DNRM

28 ....Algin or derivative

29 ....Atom other than O, H, C, S, or Group IA metal

30 .....Atom other than N, O, H, C, S, or Group IA metal

31 .....Cellulose derivative

32 ......Solid polymer derived from ethylenic reactants only

33 ......Solid polymer or SICP derived from at least one aldehyde or aldehyde derivative reactant

34 ....Paper plant solid waste material or cotton, e.g., white liquor, etc.

35 ....Cellulose

36 .....Sulfur-containing ester, e.g., viscose, xanthate, etc.

37 .....Carboxylic acid ester

38 ......Mixed carboxylate ester

39 ....Acetate

40 ....At least one solid polymer derived from ethylenic reactants only

41 ......Acetate

42 .....Ether group containing, other than solely linking carbohydrate groups directly to each other

43 ......Hydroxyalkyl

44 ....Hydroxyethyl

45 ......Carboxyalkyl or alkali metal salt thereof

46 ......Alkyl

47 ....Starch or derivative or farinaceous meal or flour

48 .....Dextrin or derivative

49 .....Aldehyde reaction product

50 .....Ether group, other than solely linking of carbohydrate groups directly to each other

51 .....Ester

52 .....Solid polymer derived from ethylenic reactants only

53 ......At least one carboxylic acid ester

54 ....Dextran or derivative

55 ....Gum or derivative

56 ....Disaccharide or trisaccharide, e.g., sucrose, etc.

57 .....Ester

58 ....Monosaccharide, e.g., glucose, fructose, etc.

59 ...Coal, bituminous additive, extract, or derivative thereof; or oil shale; or fatty still residue DNRM

60 ....With water additive DNRM

61 .....With nitrogen-containing additive DNRM

62 ....With hydrocarbon DNRM additive which is nonresinous and which is nonbituminous, or noncoal derived, e.g., cutback asphalt, kerosene, paraffin wax, etc.

63 ....Coke additive

64 ....Asphaltene or maltene additive

65 ....Coal derived additive, e.g., lignite, etc.

66 .....Tar or pitch

67 ....Oil shale

68 ....Two or more solid polymers, or graft or graft-type, or block or block-type solid copolymer

69 ....Solid polymer derived from ethylenic reactants only at least one of which contains a carboxylic acid or derivative

70 ....Solid polymer derived from ethylenic reactants only, at least one of which is propylene

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.
..Adding a NRM to a preformed solid polymer or preformed specified intermediate condensation product, composition thereof; or process of treating or composition thereof
...Coal, bituminous additive, extract, or derivative thereof; or oil shale; or fatty still residue DNRM
71 ....Solid polymer derived from ethylenic reactants only, at least one of which is a hydrocarbon other than ethylene
72 ...Lignin or tannin or derivative DNRM
73 ....Reaction product of lignin or tannin or derivative with an oxygen or nitrogen-containing organic reactant
74 ....Solid polymer or specified intermediate condensation product derived from a phenolic compound
75 ....Solid polymer contains halogen
76 ....Solid polymer derived from ethylenically unsaturated hydrocarbon only
77 ...Natural resin or modified forms thereof other than rosin or its modified forms DNRM, e.g., shellac, dammar, etc.
78 ...Residue of undetermined constitution derived from destructive distillation of a plant or animal source or plant or animal extract of undetermined constitution DNRM
79 ...DNRM is derived from pyrolysis of previously formed solid synthetic polymer
80 ...DNRM which is other than silicon dioxide, glass, titanium dioxide, water, halohydrocarbon, hydrocarbon, or elemental carbon
81 ....Organic DNRM
82 .....Sulfur atom as part of a hetero ring DNRM
83 ......Hetero ring contains sulfur and at least one diverse hetero atom
84 ......Five-membered sulfur ring
85 ......Three-membered sulfur ring
86 .....Nitrogen atom as part of a hetero ring DNRM
87 ......Nitrogen ring directly fused or bridged to a ring system
88 ....Tetrabenzoporphyrazine nucleus containing, e.g., phthalocyanine, etc.
89 ....Nitrogen ring is part of a ring system having three or more rings fused or bridged together
90 ....Nitrogen ring is part of a ring system having five or more rings fused or bridged together
91 ....Three or more nitrogen atoms in the fused or bridged ring system
92 ....Two nitrogen atoms in the fused or bridged ring system
93 ....1,3-diazole
94 ....Five-membered nitrogen containing ring
95 ......At least one diverse hetero atom in same ring
96 ....Six-membered nitrogen ring having at least one diverse hetero atom, e.g., morpholine, etc.
97 ....Two or more nitrogen rings
98 ......Nitrogen ring having at least seven ring members
99 ......Six-membered nitrogen ring, e.g., pyridine, etc.
100 ....Six-membered nitrogen ring having two or more ring nitrogen atoms
101 ....Three oxygen atoms are directly bonded to three nuclear carbon atoms of the nitrogen ring, e.g., (iso) cyanurate, etc.
102 ....Two or more nitrogen rings
103 ....Nonhetero nitrogen
104 ......Five-membered nitrogen ring
105 ....Two or more nitrogen rings
106 ....Five-membered nitrogen ring having two or more ring nitrogen atoms
107 .....At least one chalcogen atom as part of a hetero ring (chalcogen=O, Se, Te) DNRM
108 ......Two or more chalcogen atoms in the same hetero ring
109 ......Two or more chalcogen rings
110 ......Six-membered chalcogen ring
111 ......Five-membered chalcogen ring
112 ....Cyclic polycarboxylic acid anhydride
113 ....Tetrahydrofuran per se
114 ......Three-membered chalcogen ring
115 .....Phosphorus organic compound DNRM
116 ......Phosphorus is part of a covalent ring
117 ....Oxygen ring atom
118 ....Halogen
119 ....Two or more phosphorus rings
120 ....Spiro ring
121 ......Two or more phosphorus atoms directly or indirectly bonded together by only covalent bonds
122 ....Phosphorus double bonded to an atom other than C or O
123 ....Phosphorus bonded directly to three chalcogen atoms and having only one P-C linkage, e.g., phosphonate, etc.
124 ....Nitrogen
125 ....Aryl group
126 ....Phosphorus bonded directly to only two chalcogen atoms and having at least one P-C linkage, e.g., phosphinate, phosphonite, etc.
127 ....Phosphorus bonded directly to four chalcogen atoms, e.g., phosphate, etc.
128 ....Phosphorus bonded directly to three chalcogen atoms only, e.g., phosphite, etc.
129 ....Phosphorus directly bonded to at least one chalcogen and only H or C, e.g., phosphine oxide, etc.
130 ......Phosphorus bonded to three chalcogen atoms and having only one P-C linkage
131 ....Chalcogen other than directly bonded to P
132 ....Aryl group
133 ......Phosphorus bonded to only two chalcogen atoms and having at least one P-C linkage

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.
..Adding a NRM to a preformed solid polymer or preformed specified intermediate condensation product, composition thereof; or process of treating or composition thereof
...DNRM which is other than silicon dioxide, glass, titanium dioxide, water, halohydrocarbon, hydrocarbon, or elemental carbon
....Organic DNRM
.....Phosphorus organic compound DNRM
......Phosphorus bonded to only two chalcogen atoms and having at least one P-C linkage
134 ....Sulfur
135 ....Aryl group
136 ......Pentavalent phosphorus atom directly bonded to at least one oxygen atom
137 ....P directly bonded to S
138 ....P directly bonded to two or more N
139 ....Phosphorus directly bonded to at least one O and at least one H or C only
140 ....P directly bonded to oxygen only
141 ....Aryl group
142 ....Halogen
143 ....Cresyl phosphate, e.g., di, etc.
144 ....Halogen
145 ....-C-O-P-O-C, or C-O-P-OH group, e.g., phosphate ester, lecithin, etc.
146 ......Phosphorus directly bonded to sulfur
147 ......Phosphorus directly bonded to oxygen
148 ....Atom other than C, O, H, P, or Hal
149 ....Halogen
150 ....Five or more aryl groups
151 ....Two or more aryl groups
152 ....OH group
153 ....Triphenyl phosphite per se
154 ......Phosphorus directly bonded to carbon atoms only
155 .....Organic compound having a sulfur bonded directly to oxygen DNRM
156 ......Sulfur bonded directly to four oxygen atoms
157 ......Sulfur bonded directly to three oxygen atoms
158 ....Aryl group
159 ....Nitrogen
160 ....Fused or bridged ring system
161 ....Metal
162 ....At least two separate aryl groups
163 ....Halogen
164 ....Halogen
165 ....Halogen
166 ....Metal
167 ......Sulfur bonded directly to two oxygen atoms, e.g., sulfones, etc.
168 ....Sulfur bonded directly to nitrogen
169 ....Aryl group which is not fused or bridged
170 ....Aryl group
171 ....Oxygen atom other than as part of a sulfur bonded directly to two oxygen atoms
172 ....Atom other than C, H, S, O, or metal
173 ......Sulfur directly bonded to oxygen and devoid of an aryl group, e.g., dimethyl sulfoxide, etc.
174 .....Organic compound having at least one metal atom directly bonded to a carbon or hydrogen atom DNRM
175 ......Heavy metal directly bonded to carbon or hydrogen atom
176 ....Transition metal (at. no. 21-29, 39-47, 57-79)
177 ....Group VA metal (Sb, Bi, As)
178 ....Tin atom
179 ....At least one sulfur atom
180 ....Sulfur directly bonded to tin
181 ....With additional tin compound DNRM
182 ....At least two tin atoms
183 .....Boron organic compound DNRM
184 ......Atom other than B, O, H, or C
185 ....Atom is N
186 .....Organo nitrogen compound other than unsubstituted ammonium salt as sole nitrogen atom DNRM
187 ......Contains rosin or derivative DNRM
188 ......Silicon atom
189 ......Nitrogen to nitrogen bond
190 ....N=N group
191 ....X=C-N group wherein X is a chalcogen
192 ....Two or more N-N bonds
193 ....Aryl-OH
194 ....Aryl-OH
195 ......N=C=N or N=C-N- group, e.g., carbodiimide , isourea, etc.
196 ......N=C=X group wherein X is a chalcogen, e.g., isocyanate, etc.
197 ....At least one solid polymer derived from ethylenic reactants only
198 ......N-(C=O)-O-, e.g., urethane, carbamate, etc.
199 ....Oxygen other than as part of a N-(C=O)-O- group
200 ....Atom other than N, H, C, or O
201 ......N(C=X)X wherein X is a chalcogen, e.g., thiocarbamate, etc.
202 ....Metal or ammonium group
203 ....With chalcogen nonreactive organic compound
204 ......Heavy metal or aluminum
205 ......Nitrile group
206 ....Nitrogen atom other than as part of a nitrile group
207 ....Atom other than C, H, or N
208 ....Atom other than C, H, or N
209 ....Two or more nitrile groups
210 ......N-C=X group wherein X is a chalcogen
211 ....N-(C=X)N, e.g., urea, etc.
212 ....Two or more -N-(C=X)N groups
213 ....Atom other than C, N, H, or chalcogen; or contains nitrogen or chalcogen atom other than as part of a N(C=X)
214 ....Carbocyclic group
215 ....With water NRM
216 ....At least one solid polymer derived from ethylenic reactants only

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.
..Adding a NRM to a preformed solid polymer or preformed specified intermediate condensation product, composition thereof; or process of treating or composition thereof
...DNRM which is other than silicon dioxide, glass, titanium dioxide, water, halohydrocarbon, hydrocarbon, or elemental carbon
....Organic DNRM
.....Organo nitrogen compound other than unsubstituted ammonium salt as sole nitrogen atom DNRM
......N-C=X group wherein X is a chalcogen
217 ....N atom other than as part of a N-C=X group
218 ....C=X group other than as part of a N-C=X group
219 ....(C=X)X group
220 ....C-O-C group
221 ....C-OH group
222 ....Aryl-OH group
223 ....Two or more N-C=X groups or two or more C-OH groups
224 ....At least one solid polymer derived from ethylenic reactants only
225 ....Atom other than N, C, H, or oxygen
226 ....Carbocyclic group
227 ....Two or more N-C=O groups
228 ....At least one solid polymer derived from ethylenic reactants only
229 ....At least one solid polymer derived from acyclic monoethylenic hydrocarbon reactant
230 ....N-(C=O)alkyl wherein alkyl group contains eight or more carbon atoms
231 ....Two or more organo N-C=O compounds DNRM or with nonreactant organo nitrogen compound DNRM
232 ....At least one solid polymer derived from ethylenic hydrocarbon reactants only
233 ....Dialkyl amides, e.g., dimethyl formamide, dimethyl acetamide, etc.
234 ....Two or more N-C nitrogen nonreactant materials or with an organo oxygen or nitrogen-containing nonreactant material
235 ....At least one solid polymer derived from nitrile-containing ethylenic reactant
236 ......Trivalent or tetravalent nitrogen atom other than unsubstituted ammonium
237 ....Carbon bonded to three N atoms, -C=NH, or C=N-C group
238 ....(C=X)X group wherein X is chalcogen
239 ....Two or more (C=X)X groups
240 ....Aryl group
241 ....C=X group where X is chalcogen
242 ....Two or more C=X groups
243 ....C-O-C group
244 ....C-OH
245 ....Two or more C-OH groups
246 ....Aryl group
247 ....C-OH group
248 ....Aryl-OH group
249 ....Two or more nitrogen atoms or two or more C-OH groups
250 ....Four or more C-OH groups
251 ....N, C, and H atoms only
252 ....Two or more nitrogen atoms
253 ....With water NRM
254 ....Aryl
255 ....Two or more separate aryl ring systems
256 ....At least one aryl ring which is part of a fused or bridged ring system
257 ....Aryl
258 ....Two or more separate aryl ring systems
259 ......Nitrogen as part of a nitro group
260 ....Nitro compound has an atom other than C, H, N, or O or has an oxygen or nitrogen atom other than as part of a nitro group
261 .....Organic silicon compound having at least one oxygen atom DNRM
262 ......Atom other than Si, O, C, or H
263 ....Halogen
264 ......Ethylenic group
265 ......Oxygen atom other than as Si-O-Si and at least one Si-C or Si-H group
266 ....Silicon containing SICP or solid polymer
267 ......Two or more Si atoms and at least one Si-C or Si-H group
268 ....Silicon containing SICP or solid polymer
269 ....Solid polymer derived from ethylenic reactants only
270 .....Rosin or tall oil or modified forms thereof as DNRM, e.g., colophony, abietic acid, ester gum, etc.
271 ......Two or more solid polymers or at least one solid polymer and at least one specified intermediate condensation product
272 ......Solid polymer derived from at least one ethylenic compound containing a carboxylic acid or derivative
273 ......Solid polymer contains halogen
274 ......Solid polymer derived from ethylenically unsaturated hydrocarbon only
275 .....Oxygen wax DNRM
276 ......With water NRM
277 ......Carnauba wax, beeswax, montan wax, or oxidized microcrystalline wax or modified forms thereof
278 ....Solid polymer contains halogen
279 ....Solid polymer contains nitrogen
280 .....X(C=X)X wherein X is chalcogen DNRM, e.g., carbonate, etc.
281 ......Aryl group
282 .....C(C=X)X wherein at least one X is a chalcogen other than oxygen DNRM
283 ......Oxygen atom which is not part of the -C(C=X)X group
284 .....Carboxylic acid or derivative and wherein the derivative is other than a metal salt DNRM

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.
..Adding a NRM to a preformed solid polymer or preformed specified intermediate condensation product, composition thereof; or process of treating or composition thereof
...DNRM which is other than silicon dioxide, glass, titanium dioxide, water, halohydrocarbon, hydrocarbon, or elemental carbon
....Organic DNRM
.....Carboxylic acid or derivative and wherein the derivative is other than a metal salt DNRM
285 ......Cycloaliphatic group or bridged or fused ring system, e.g., camphoric acid, etc.
286 ....Naphthenic acid or derivative
287 ......Aryl group
288 ....Atom other than C, H, or O
289 ....Sulfur
290 ....Oxygen atom other than as part of a carboxylic acid or ester group
291 ....OH group other than as part of a COOH group, e.g., salicylic acid, etc.
292 ....Carbonyl of a carboxylic acid or ester group directly attached to an aryl group, e.g., dipropylene glycol dibenzoate, etc.
293 ....Carboxylic acid or ester groups each directly attached to separate aryl groups through the carbonyl of the carboxylic acid or ester group
294 ....Two or more carboxylic acids or ester groups each directly attached to a nuclear carbon of the same aryl group through the carbonyl of the carboxylic acid or ester group
295 ....A single aryl group
296 ....Only two carboxylic acid or ester groups directly attached to an aryl group, e.g., phthalic acid, etc.
297 ....Dioctyl or dibutyl ester, e.g., di-(2-ethylhexyl) phthalate, etc.
298 ....Three or more carboxylic acid or ester groups
299 ....Two or more aryl groups
300 ......Two or more carbon atoms
301 ....Metal
302 ....Sulfur, e.g., factice, etc.
303 ....Only two carboxylic acid or ester groups, e.g., distearyl thiodipropionate, etc.
304 ....With a nonreactive material
305 ....Nonreactive material contains atom other than C, H, or O
306 ....Ester having at least two carboxylic acid ester groups
307 ....Atom other than C, H, or O
308 ....Oxygen atom other than as part of a carboxylic acid ester group
309 ....C=O group other than as part of COO group
310 ....OH group other than as part of a COOH group, e.g., castor oil, etc.
311 ....Three or more carboxylic acid ester groups
312 ....Derived from glycerol
313 ....Fatty acid triglyceride, e.g., drying oil, etc.
314 ....Ester derived from dicarboxylic acid
315 ....Carboxylic acid ester
316 ....Atom other than C, H, or O
317 ....Oxygen atom other than as part of a carboxylic acid group, e.g., glycolic ester, etc.
318 ....Acyl group of the carboxylic acid has at least fifteen carbon atoms, e.g., butyl stearate, etc.
319 ....Halogen
320 ....Oxygen atom other than as part of a COOH or derivative group
321 ....Two or more carboxylic acid or derivative groups
322 ....Acyl group of the carboxylic acid or derivative has at least fifteen carbon atoms, e.g., stearic acid, etc.
323 .....Aryl-OH or salt or aryl-O-metal bond DNRM
324 ......Fused or bridged ring system
325 ....Fused or bridged ring system having at least three rings
326 ......Cycloaliphatic group
327 ......Metal
328 ....Group VIII metal (i.e., Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt)
329 ....Group IVA metal (i.e., Ge, Sn, Pb)
330 ......Atom other than C, H, O, or halogen
331 ....Two or more sulfur atoms
332 ....S-S linkage
333 ....Two or more separate aryl-OH groups
334 ......Oxygen other than as part of an aryl-OH group
335 ....C=O group
336 ....A single C=O group
337 ....Aryl group having two or more OH groups directly attached to nuclear carbons thereof
338 ....Two or more aryl-OH groups
339 ....C-O-C linkage
340 ....Aryl compound having only one aryl ring and having one or more OH groups directly attached to nuclear carbons of the aryl
341 ......Halogen
342 ......Two or more separate aryl-OH groups
343 ....Only two aryl-OH groups
344 ....Aryl group other than as part of an aryl-OH
345 ......Polyhydric aryl-OH compound
346 ....1,3-dihydroxy, e.g., resorcinol, etc.
347 ....1,4-dihydroxy, e.g., hydroquinone, etc.
348 ......Two or more aryl-OH DNRM compounds
349 ......Three or more substituents on the aryl-OH compound
350 ....With other nonreactive material
351 ......Two substituents on the aryl-OH compound

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.
..Adding a NRM to a preformed solid polymer or preformed specified intermediate condensation product, composition thereof; or process of treating or composition thereof
...DNRM which is other than silicon dioxide, glass, titanium dioxide, water, halohydrocarbon, hydrocarbon, or elemental carbon
....Organic DNRM
.....Aryl-OH or salt or aryl-O-metal bond DNRM
352 ......A single substituent on the aryl-OH compound
353 ....With nonreactive organic material
354 .....Aldehyde DNRM,i.e., C-(C=O) H
355 ......Aryl
356 .....Ketone or ketene DNRM, i.e., C(C=O)C or C=C=O
357 ......Two or more C(C=O)C groups
358 ....Carbocyclic ring wherein at least two of the nuclear carbons thereof are double bonded directly to oxygens atom so as to form two or more C=O groups therewith, e.g., quinone, etc.
359 ......Carbocyclic ring, e.g., benzophenone, etc.
360 ....Carbocyclic ring wherein one of the nuclear carbons thereof is double bonded directly to an oxygen atom so as to form a C=O group therewith, e.g., cyclohexanone, etc.
361 ......Only C, H, and oxygen atoms
362 ....Ten or more carbon atoms
363 ....Two or more C=O DNRM compounds
364 ....With water, hydrocarbon, halohydrocarbon, or organic oxygen containing nonreactive material
365 ....Solid polymer derived from ethylenic reactants only
366 .....C-O-C compound DNRM
367 ......Fused or bridged ring system or a cycloaliphatic group
368 ......Atom other than C, H, O, or halogen
369 ......Aryl group other than as part of a phenoxy group
370 ......Aryl-O-aryl
371 ....Halogen
372 ......Two or more phenoxy groups
373 ....Halogen
374 ....At least two diverse halogen atoms
375 ......Phenoxy group
376 ......OH group, e.g., Cellosolve, etc.
377 ....Two or more OH groups
378 ......Only C, H, and O atoms
379 .....Carbon atom single bonded to an oxygen atom and wherein the carbon atom is not double bonded to a chalcogen atom DNRM, e.g., alcohols, etc.
380 ......Halogen or ethylenic unsaturation
381 ......Non C-OH oxygen atom, or element other than C, O, or H, e.g., tartaric acid metal salt, etc.
382 ....Heavy metal
383 ......Carbocyclic ring
384 ....Aryl group
385 ......Only a single -C-OH group and at least six carbon atoms
386 ......At least two -OH groups
387 ....At least four -OH groups, e.g., pentaerythritol, etc.
388 ....At least one solid polymer derived from ethylenic reactants only
389 ......Two or more compounds containing -OH groups, or with water NRM
390 ......With hydrocarbon or halogenated hydrocarbon NRM
391 ......Solid polymer or SICP derived from at least one nonethylenic reactant
392 .....Organic chalcogen other than oxygen as DNRM
393 ......Atom other than S, C, H, or a metal
394 .....Oxygen atom or metal atom DNRM, e.g., metal stearate, etc.
395 ......Atom other than C, O, H, or a metal
396 ......Carbocyclic group, e.g., aryl, etc.
397 ......Ethylenic group; or at least two (C=O)O groups bonded to each other directly or only by carbon atoms
398 ......Transition metal atom (atomic no. 21-29, 39-47, 57-79)
399 ......Heavy metal or aluminum (atomic no. 13, 30-33, 48-51, 80-83)
400 ......Group IIA metal (Be, Mg, Ca, Sr, Ba)
401 ....Inorganic compound devoid of a silicon atom DNRM
402 .....Chalcogen atom other than sulfur or oxygen DNRM
403 .....At least one element of the lanthanide series (atomic no.57-71) or contains a noble metal atom (i.e., Au, Ag, Hg, Pt, Pd, Ir, Rh, Ru, Os)DNRM
404 .....Boron atom DNRM
405 ......Boron directly bonded to oxygen
406 .....Group VIB metal atom DNRM (i.e., Cr, Mo, W)
407 ......Chromium
408 .....Group V metal atom DNRM (i.e., V, Nb, Ta, As, Bi, Sb)
409 ......Antimony
410 ....Atom other than Sb and oxygen
411 ....With halogenated nonreactant material
412 ....Halogen atom other than Cl
413 .....Transition metal other than Group VIII DNRM (i.e., Sc, Ti, Mn, Cu, Y, Zr, Tc, Hf, Re)
414 .....Phosphorus atom DNRM
415 ......Atom other than P, O, H, or a metal
416 ....Ammonium phosphate
417 ......Phosphorus atom directly bonded to four oxygen atoms, e.g., phosphoric acid, etc.
418 .....Sulfur atom DNRM
419 ......Two or more sulfur atoms; or at least one atom other than S, O, H, or a metal
420 ......Devoid of an oxygen atom, e.g., sulfide, etc.
421 ......At least one hydrogen atom
422 ....Sulfuric acid

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.
..Adding a NRM to a preformed solid polymer or preformed specified intermediate condensation product, composition thereof; or process of treating or composition thereof
...DNRM which is other than silicon dioxide, glass, titanium dioxide, water, halohydrocarbon, hydrocarbon, or elemental carbon
....Inorganic compound devoid of a silicon atom DNRM
.....Sulfur atom DNRM
423 ......Sulfate group, e.g., calcium sulfate, etc.
424 .....Carbon atom DNRM
425 ......Calcium carbonate, e.g., limestone, marble, etc.
426 ....Solid polymer derived from at least one diene monomer
427 ....Solid polymer derived from unsaturated hydrocarbon monomer
428 .....Nitrogen atom DNRM
429 ......Nitrogen directly bonded to an oxygen atom, e.g., nitric acid, etc.
430 .....A single type of metal atom and only oxygen atoms DNRM, e.g., metal oxide, etc.
431 ......Transition metal atom (i.e., Fe,Co,Ni)
432 ......Group IIB metal atom (i.e., Zn or Cd)
433 ......Group IIA metal atom (i.e., Be, Mg, Ca, Sr, Ba)
434 .....Heavy metal atom DNRM
435 ......Transition metal atom (i.e., Fe, Co, Ni)
436 .....Group IIA metal DNRM (i.e., Be, Mg, Ca, Sr, Ba)
437 .....Aluminum DNRM
438 .....Nonmetal compound DNRM
439 ....Elemental metal DNRM
440 .....Transition metal atom DNRM
441 .....Aluminum DNRM
442 ....Soil or inorganic silicon DNRM (other than silicon dioxide, glass, quartz, novaculite, or silicon dioxide type)
443 .....Atom other than Si, O, H, Al, Fe, or a Group IA or IIA metal atom DNRM, e.g., slag, mineral wool, etc.
444 .....Aluminum atom DNRM
445 ......Clay, e.g., fullers earth, fire clay, etc.
446 ....With water NRM
447 ....Kaolin or bentonite
448 ......Diatomite or diatomaceous earth, e.g., kieselguhr, infusorial earth, etc.
449 ......Mica
450 ......Metal atom other than aluminum, e.g., zeolites, etc.
451 .....Talc (soapstone) DNRM
452 .....Asbestos DNRM
453 ......Aldehyde-nitrogen SICP or solid polymer thereof
454 ......SICP or solid polymer thereof
455 ......Halogen containing polymer
456 .....Group IIA metal atom DNRM
457 ...Polymerizing an ethylenic monomer in the presence of a preformed SICP or solid polymer and in the presence of a nonreactive material so as to form an aqueous dispersion, latex, suspension, or emulsion therewith; or product thereof
458 ....Polymerizing in the presence of water and in the presence of a solid polymer derived from ethylenic reactants only
459 .....Solid polymer utilized contains vinyl alcohol units
460 .....Solid polymer utilized is derived from an unsaturated carboxylic acid or salt
461 ....Polymerizing in the presence of a solid polymer derived from ethylenic reactants only
462 ...Mixing with fluorine- or iodine-containing organic compound or composition; or product thereof DNRM
463 ....Contains two or more fluorine or iodine organic compounds
464 ...Mixing with chlorine- or bromine-containing organic compound hydrocarbon mixture or composition or product thereof DNRM
465 ...Mixing with two or more chlorine- or bromine-containing organic compounds; or with a chlorine- or bromine-containing organic compound other than carbon tetrachloride, chloroform, or methylene chloride, and having numerical limitations other than amount, e.g., included herein, are m.p., b.p., m.w, structure, etc., or composition or product thereof, DNRM
466 ....Two or more chlorine-or bromine-containing organic compounds
467 ....Chlorine or bromine organic compound containing a bridged, fused, or cycloalphatic ring
468 ....Chlorine or bromine organic compound containing ethylenic unsaturation
469 ....Bromine-containing organic compound
470 ....Chlorine-containing aromatic compound
471 .....Aromatic compound containing two or more aromatic rings
472 ....Chlorine-containing wax
473 ....Organic compound containing two or more chlorine atoms
474 ...Mixing two or more hydrocarbons; or a hydrocarbon other than benzene, toluene, or xylene per se and having numerical limitations other than amount, e.g., included herein are m.p., b.p., viscosity, structure, m.w., etc. or composition or product thereof, DNRM
475 ....With water NRM
476 ....Two or more hydrocarbons
477 .....At least two solid hydrocarbons
478 ......At least one microcrystalline wax
479 ....Mixture contains three or more waxes
480 ....Mixture contains microcrystalline wax having specified melting point
481 ....Unsaturated hydrocarbon
482 .....Unsaturated hydrocarbon contains a bridged or fused ring

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.
..Adding a NRM to a preformed solid polymer or preformed specified intermediate condensation product, composition thereof; or process of treating or composition thereof
...Mixing two or more hydrocarbons; or a hydrocarbon other than benzene, toluene, or xylene per se and having numerical limitations other than amount, e.g., included herein are m.p., b.p., viscosity, structure, m.w., etc. or composition or product thereof, DNRM
....Unsaturated hydrocarbon
483 .....Unsaturated hydrocarbon contains plural unsaturation
484 ....Aromatic hydrocarbon
485 .....Aromatic hydrocarbon contains a bridged or fused ring
486 .....Aromatic hydrocarbon contains two or more aromatic rings
487 ....Hydrocarbon wax
488 .....Microcrystalline wax
489 .....Wax having melting point above 120 deg. F (49 deg. C)
490 ....Hydrocarbon having a specified molecular weight or chain length
491 ....Hydrocarbon having a specified viscosity
492 ...Mixing inorganic silicon-containing material having color or numerical limitations other than amount, e.g., included herein are m.p., chemical composition, particle size, surface area, etc., or composition or product thereof, DNRM
493 ....Inorganic silicon-containing material having specified dimensions
494 .....Material contains glass
495 ...Mixing with carbon, e.g., graphite, etc., having numerical limitations, other than amount, e.g., included herein are particle size, surface area, etc., or composition or product thereof, DNRM
496 ....Carbon particle having specified dimension
497 ...Mixing with titanium dioxide material having numerical limitations other than amount, e.g., included herein are particle size, etc., composition or product thereof, DNRM
498 ...Solid polymer or solid SICP derived from or reacted with protein or biologically active polypeptide or product thereof
499 ...Solid polymer derived from monomer from unsaturated petroleum hydrocarbon fraction or product thereof
500 ...Containing two or more solid polymers; solid polymer or SICP and a SICP, SPFI, or an ethylenic reactant or product thereof
501 ....Producing an aqueous system by mixing two or more aqueous emulsions, suspensions, dispersions, or solutions, or any of the above in admixture with one another and wherein each individually contains a solid polymer or SICP
502 ....At least one solid polymer derived from ethylenic reactants only
503 .....Polyvinyl alcohol or modified form thereof
504 .....Solid graft or solid graft-type copolymer with other solid polymer, SICP, or SPFI
505 .....Solid block or solid block-type copolymer with other solid polymer, SICP or SPFI
506 .....With solid polymer derived from at least one Si-H or Si-C reactant wherein at least one of the reactants forming the solid polymer is saturated; or with SPFI or SICP derived from a Si-H or Si-C reactant wherein at least one of the necessary reactants is saturated
507 .....With solid polymer derived from at least one -N=C=X (X is chalcogen) reactant wherein at least one of the reactants forming the solid polymer is saturated; or with SPFI or SICP derived from a -N=C=X reactant wherein at least one of the necessary reactants is saturated
508 .....With solid polymer derived from at least one reactant wherein at least one of the reactants forming the solid polymer is a phenol or inorganic phenolate; or with SPFI or SICP derived from phenol or inorganic phenolate wherein at least one of the necessary reactants is saturated
509 ......With aldehyde or aldehyde-type reactant
510 ....Water DNRM containing
511 ....Ethylenic polymer derived from at least one reactant containing two or more ethylenic groups
512 .....With solid polymer derived from at least one reactant wherein at least one of the reactants forming the solid polymer is an aldehyde or derivative; or with SPFI or SICP derived from an aldehyde or derivative wherein at least one of the necessary reactants is saturated
513 .....With polycarboxylic acid or derivative and a polyol at least one of which is saturated or with solid polymer thereof
514 .....With polycarboxylic acid or derivative and a polyamine, or with nitrogen-containing carboxylic acid or derivative reactant at least one of which is saturated or with solid polymer thereof
515 .....Two or more solid polymers derived from ethylenic reactants only
516 ......Solid polymer derived from nitrogen heterocycle monomer
517 ......Solid polymer from oxygen heterocycle monomer

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF
..Adding a NRM to a preformed solid polymer or preformed specified intermediate condensation product, composition thereof; or process of treating or composition thereof
...Containing two or more solid polymers; solid polymer or SICP and a SICP, SPFI, or an ethylenic reactant or product thereof
....At least one solid polymer derived from ethylenic reactants only
.....Two or more solid polymers derived from ethylenic reactants only
518 ......Solid polymer derived from fused or bridged ring monomer
519 ......Solid polymer derived from halogen-containing monomer other than vinyl or vinylidene chloride
520 ....Fluorine-containing monomer
521 ......Solid polymer derived from a monomer containing an atom other than C, O, H, or chlorine
522 ......Solid polymer derived from carboxylic acid-containing monomer
523 ......Solid polymer derived from carboxylic acid ester monomer
524 ....Ester derived from an unsaturated alcohol and a saturated acid, e.g., vinyl acetate, etc.
525 ......Solid polymer derived from monomer containing two or more ethylenic groups
526 ....Two or more polymers derived from reactant containing two or more ethylenic groups
527 ......Solid polymer derived from chlorine-containing reactant
528 ......Solid polymer derived from acyclic hydrocarbon
529 .....Solid polymer derived from ethylenic monomers only admixed with ethylenic monomer
530 ......Ethylenic monomer contains a nitrogen heterocycle
531 ......Ethylenic monomer contains a chalcogen heterocycle
532 ......Ethylenic monomer contains a fused or bridged ring system
533 ......Ethylenic monomer contains at least one carboxylic acid ester group
534 ......Ethylenic monomer contains at least two ethylenic groups
535 ......Ethylenic monomer contains at least one atom which is other than C, H, or O
536 ......Ethylenic monomer is an acyclic hydrocarbon
537 ....Solid polymer or SICP derived from an -O-(C=O)O- or hal-(C=O)-O- containing reactant
538 ....Solid polymer or SICP derived from at least one nitrogen-containing carboxylic acid or derivative reactant or from a carboxylic acid or derivative and a polyamine
539 ....Solid polymer or SICP derived from at least one carboxylic acid or derivative reactant
540 ....Solid polymer or SICP derived from at least one phenol or inorganic phenolate reactant
541 .....Aldehyde or derivative reactant
542 ....Solid polymer or SICP derived from at least one aldehyde or derivative or ketone reactant
543 ...Polymer derived from ethylenic reactants only
544 ....From fluorine-containing monomer
545 .....Fluorine-containing monomer contains F and C only or only F, C, and H
546 ......Four or more fluorine atoms
547 ....From reactant-containing atom other than O, N, C, halogen, or hydrogen
548 ....From heterocyclic monomer
549 .....Five-membered oxygen ring, e.g., coumarone-indene, etc.
550 ....From acetylenic monomer
551 ....From halogen-containing monomer containing three or more carbon atoms and wherein at least one halogen atom is present in other than salt form
552 .....Diene
553 ....From cycloaliphatic or fused or bridged ring monomer
554 .....Cycloaliphatic, fused, or bridged monomer contains at least two unsaturated groups
555 ....From nitrogen-containing monomer other than acrylonitrile or methacrylonitrile
556 ....From carboxylic acid or ester thereof monomer
557 .....Polyvinyl alcohol or modified forms thereof
558 .....Acid or ester contains an oxygen atom which is other than part of a free carboxyl group or carboxylic acid ester group
559 .....Ester contains two or more ester groups or at least one carboxylic ester group and at least one free acid group; or carboxylic acid contains two or more free carboxyl groups
560 .....From ester derived from at least one unsaturated carboxylic acid and a saturated alcohol, e.g., methyl methacrylate, etc.
561 ......Interpolymerized with diverse carboxylic acid ester
562 ......Interpolymerized with hydrocarbon containing a single ethylenic group
563 .....From ester derived from ethylenically unsaturated alcohol and saturated carboxylic acid, e.g., vinyl acetate, etc.
564 ......Interpolymerized with diverse carboxylic acid ester or with carboxylic acid reactant
565 ....From acrylonitrile or methacrylonitrile monomer
566 .....Inorganic nonreactive material
567 ....From halogen-containing monomer
568 .....Vinylidene chloride
569 .....Plasticizer additive
570 ....From hydrocarbon monomer
571 .....Conjugated diene hydrocarbon monomer

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.
..Adding a NRM to a preformed solid polymer or preformed specified intermediate condensation product, composition thereof; or process of treating or composition thereof
...Polymer derived from ethylenic reactants only
....From hydrocarbon monomer
.....Conjugated diene hydrocarbon monomer
572 ......Adding nonreactive material to chemically modified solid polymer
573 ......Interpolymer of two or more diene monomers
574 ......Interpolymer with at least one aliphatic hydrocarbon monomer, e.g., butyl rubber, etc.
575 ......Interpolymer with at least one aromatic hydrocarbon monomer
575.5 ......Natural rubber
576 .....Adding nonreactive material to chemically modified solid polymer
577 .....From aromatic hydrocarbon monomer
578 ......Interpolymer with at least one aliphatic hydrocarbon monomer
579 .....From hydrocarbon containing four or more carbon atoms
580 .....Adding nonreactive material to solid polymer and subsequently chemically modifying the polymer or product
581 ......Solid polymer derived from ethylene
582 .....From propylene as sole reactant monomer
583 ......Organic NRM additive
584 ......Inorganic NRM additive other than water
585 .....From ethylene as sole reactant monomer
586 ......Inorganic NRM additive
587 ......High density polymer
588 ...From silicon-containing reactant
589 ...From -N=C=X reactant or blocked N=C=X reactant (X is chalcogen)
590 ....With reactant containing at least one C-OH, (C=O)-OH or -C-O-C- group
591 .....Water DNRM
592 ...From ketone or ketene reactant
593 ...From aldehyde or derivative reactant
594 ....With phenol or inorganic phenolate
595 .....Containing reactant having atom other than C, H, or O
596 .....Water DNRM
597 ....Nitrogen-containing reactant
598 .....Water DNRM
599 ...From carboxylic acid or derivative reactant
600 ....Carboxylic acid contains three or more acid groups or derivative thereof
601 ....From dicarboxylic acid or derivative and at least one polyol; or from a diester of a polycarboxylic acid as sole reactant
602 .....Nitrogen-containing reactant
603 .....Reactant contains atom other than C, H, or O
604 .....At least one polyol containing only two -C-OH groups reactant
605 ......Derived from terephthalic acid or derivative
606 ....Nitrogen-containing reactant
607 .....Two or more carboxylic acids or derivatives, or two or more nitrogen-containing compounds
608 .....Water DNRM containing
609 ...From sulfur-containing reactant
610 ...From reactant-containing atom other than N, C, H, O, or halogen
611 ...From phenol reactant
612 ...From at least one oxygen or nitrogen-containing reactant
650 ..Inorganic water settable material containing
700 ..Preparation of intentional or desired composition by formation of a solid polymer (SP) or SICP in presence of a designated nonreactant material (DNRM) other than solely water, hydrocarbon, silicon dioxide, glass, titanium dioxide or elemental carbon, composition thereof; or process of treating or composition thereof
701 ...Boron-containing DNRM
702 ...Cellular material derived from biological source as DNRM other than farinaceous flour or cotton or diatomaceous earth
703 ....Corncob, bark, or cork
704 ...Protein or biologically active polypeptide as DNRM
705 ...Coal or bituminous material, extract or derivative thereof, oil shale, or fatty still residue thereof, as DNRM
706 ...P-containing DNRM
707 ....Nitrogen
708 .....Phosphorus bonded directly to nitrogen
709 ....Tri organo phosphine or phosphonium compound
710 ....Organic compound having phosphorus bonded directly to oxygen or sulfur
711 .....Containing a metal atom DNRM
712 .....Containing halogen DNRM
713 ....Containing phenol or carboxylic acid or derivative DNRM
714 ...N-containing organic compound excluding unsubstituted ammonium as sole nitrogen in DNRM
715 ....N=N linkage, e.g., azo dyes, etc.
716 ....Carbohydrate or derivative, e.g., nitrocellulose, etc.
717 ....Heterocyclic structure other than per se N-alkyl pyrrolidone
718 .....Hetero nitrogen
719 ......Containing hetero chalcogen DNRM
720 ......Plural hetero N, i.e., same or different ring
721 ....Containing aryl-OH or salt thereof DNRM
722 ....Amine nitrogen directly bonded to aromatic ring
723 ....Sulfur, e.g., sulfonamides, etc.
724 ....ROH or COOH, or salts thereof, e.g., alkanol amine or amino acid, etc.
725 ....Nitrile
726 ....Formamide or N,N-dialkyl amide or N-alkyl pyrrolidone
727 .....With metal-containing material DNRM
728 ....(C=O)N

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.
..Preparation of intentional or desired composition by formation of a solid polymer (SP) or SICP in presence of a designated nonreactant material (DNRM) other than solely water, hydrocarbon, silicon dioxide, glass, titanium dioxide or elemental carbon, composition thereof; or process of treating or composition thereof
729 ...X(C=X)X wherein X is chalcogen DNRM, e.g., carbonate, etc.
730 ...Si-C, Si-H contains DNRM, metal-C or metal-H bond or organic compound containing Si
731 ....Diorgano siloxane contains units of -((R)Si(R)-O-)* where * is subscript two or more
732 ...Carbohydrate or derivative as DNRM
733 ....Cellulose or derivative, e.g., cotton, paper pulp, etc.
734 ....Starch or derivative, farinaceous flour or meal
735 ...Lignin, tannin, or derivative as DNRM
736 ...Aryl-OH or salt thereof as DNRM
738 ....Plural separate aryl-OH groups or polyhydric aryl-OH, or salts thereof: e.g., resorcinol, etc.
739 .....Plural separate aryl-OH or salt groups bonded through carbon or a chalcogen-containing radical, e.g., bisphenol A, etc.
740 ....Aryl-OH or salt compound having at least one chalcogen-containing substituent, e.g., hydroxy anisole, etc.
741 ....Aryl-OH or salt compound having two or more substituents
742 ...Elemental or organic sulfur compound as DNRM
743 ....Sulfone, e.g., sulfolane, etc.
744 ....DMSO with additional oxygen or halogen compound DNRM
745 ....Sulfate, sulfonate ester, sulfonic acid, or salt thereof
746 .....Halogenated
747 .....Containing ether or hydroxyl group DNRM
748 .....Containing COOH or salt thereof or ester thereof DNRM
750 ....Mercaptan, mercaptide, or thioether, e.g., aryl-SH, etc.
751 ...Heterocyclic chalcogen compound as DNRM
752 ....With organic chalcogen compound, hydrocarbon, or halogenated hydrocarbon DNRM
753 ....Carboxylic acid ester linkage, e.g., oxyalkylated sorbitan ester, etc.
754 ....Plural hetero oxygen
755 ...Ether compound DNRM, e.g., aryl ether, dimethylether, etc.
757 ....Mixture of ether compounds; or only two ether oxygens bonded to a carbon atom, e.g., formal, acetal, etc.
758 ....Halogenated
759 ....Containing carboxylic acid or derivative DNRM
760 .....Carboxylic acid or derivative has two or more ether linkages
761 ....Containing hydroxyl group DNRM
762 .....Two or more ether linkages in the hydroxyl group bearing molecule
763 ...Oxygen containing wax as DNRM, e.g., carnauba, montan, ceresin, bees wax, oxidized petroleum wax, etc.
764 ...Natural resin or derivative as DNRM, e.g., rosin, shellac, etc., excluding tall oil per se
765 ...Alcohol compound as DNRM, i.e., R-OH
766 ....Two or more alcohols
767 ....With water NRM
768 ....With hydrocarbon or halogenated hydrocarbon NRM
769 ....Chalcogen other than as R-OH
770 ...Ketone or aldehyde as DNRM
771 ....With hydrocarbon or halogenated hydrocarbon NRM
772 ....Carboxylic acid or derivative, e.g., acetoacetic acid or ester or salt thereof, etc.
773 ...Carboxylic acid or derivative not containing a heavy metal atom as DNRM, e.g., anhydride, acyl halide, ester or salt, etc.
774 ....Cycloaliphatic group, e.g., dimer acids containing thirty six carbon atoms, tall oil, etc.
775 ....Aryl group
776 .....Solid polymer derived from ethylenic monomers only
777 ....Group IA, unsubstituted ammonium, or Group IIA salt
778 .....Solid polymer or SICP derived from at least one nonethylenic monomer
779 ...Elemental metal or metal compound not containing silicon DNRM
780 ....Heavy metal
781 .....Copper
783 .....Group IV or Group IIB, i.e., Ge, Sn, Pb, Zr, Ti, Hf, Zn, Cd, Hg
784 ......Tin
785 .....Group VIII, i.e., Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt
786 ....Al
787 ....Inorganic metal compound having S, C, or N, e.g., KSCN, etc.
788 .....Calcium, e.g., calcium carbonate, etc.
789 ...Elemental silicon, soil, or inorganic silicon compound as DNRM
790 ....With reactive coupling agent
791 ....Alkali or alkali earth silicate
792 ...Halogenated hydrocarbon DNRM
793 ....Halogenated hydrocarbon contains ethylenic unsaturation
794 ....With water NRM
795 ....Fluorinated
796 ...Nitrogen, halogen, or compounds thereof DNRM
797 ..Solid polymer or SICP derived from protein or biologically active polypeptide and ethylenic monomer or SPFI
798 ..Solid polymer or SICP derived from natural resin or natural resin derivative and ethylenic monomer or SPFI, e.g., shellac, rosin, etc.
799 ..Solid polymer or SICP derived from lignin or tannin and ethylenic monomer or SPFI

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.
800 ..Preparation of intentional or desired composition by formation of solid polymer or SICP in the presence of water as a designated nonreactant material (DNRM), or products thereof
801 ...Process of preparing water-in-oil emulsion or dispersion, or product thereof
802 ...Aqueous carboxyl-bearing solid polymer or SICP composition chemically treated with aziridine, mono 1,2-epoxide, or cyclic sulfonium compound
803 ...Polyvinyl alcohol or partially hydrolyzed polyvinyl acetate or chemically modified forms thereof
804 ...Solid polymer derived from ethylenic monomers only
805 ....Fluorine-containing monomer
806 ....Silicon-containing monomer
807 ....Monomer-containing element other than C, H, O, N, S, Hal, or Group IA metal atom
808 ....Monomer contains nitrogen atom as part of a heterocyclic ring
809 .....Two or more nitrogen atoms in a single ring
811 ....Monomer contains chalcogen atom as part of heterocyclic ring
812 ....N-containing monomer other than: unsubstituted ammonium as sole nitrogen, acrylamide, methylol acrylamide, acrylonitrile and the corresponding methacryl compounds or mixtures thereof
813 .....Nitrogen-carbon-oxygen bond containing monomer, e.g., allyl isocyanate, etc.
814 .....N-monomer contains S
815 .....Quaternary nitrogen-containing monomer, e.g., tetramethyl ammonium, etc.
816 .....N-monomer contains carboxylic acid or salt thereof
817 ....S-containing monomer
818 ....Aldehyde or ketone containing monomer
819 ....Hydrocarbon monomer with carboxylic acid, salt, or nonnitrogen containing derivative monomer
820 .....With N monomer
821 ......Hydrocarbon monomer contains at least two ethylenic groups
822 .....Two or more hydrocarbon monomers
823 .....Two or more monomers-containing carboxylic acid or derivative
824 ......Aromatic monomer
825 .....With halogenated hydrocarbon monomer
827 ....N-containing monomer
828 .....With hydrocarbon monomer
829 .....Two or more N monomers
831 .....With unsaturated carboxylic acid or ester monomer
832 ....Monomer is carboxylic acid or derivative
833 .....Two or more carboxylic acids or derivatives
834 ....Halogenated hydrocarbon monomer
835 .....Two or more halogenated hydrocarbon monomers
836 ....Hydrocarbon monomer only
837 ...Solid polymer or SICP derived from Si-containing reactant
838 ....N-containing reactant
839 ...Solid polymer or SICP derived from -N=C=X (X is chalcogen) containing reactant
840 ....N=C=X reactant has ionic group attached thereto, e.g., carboxyl sulfonic, etc.
841 ...Solid polymer or SICP derived from a phenolic reactant
842 ....With carbohydrate reactant, e.g., starch, cellulose, or sugar, etc.
843 ...Solid polymer or SICP derived from an aldehyde or aldehyde derivative reactant
844 ....With carbohydrate reactant, e.g., starch, cellulose, cork, etc.
845 ...Solid polymer derived from a reactant which is a carboxylic acid or derivative
846 ...Polymer of an ethylenic reactant with a saturated reactant
847 ..Carbon, titanium dioxide, glass, or silicon dioxide having specified crystalline form or numerical limitation other than amount, e.g., included herein are particle size, shape, etc., as DNRM
848 ..Hydrocarbon material other than solely a fused ring, or cycloaliphatic hydrocarbon, benzene, toluene, or xylene or mixtures thereof; said material or mixture of materials having specified numerical limitations other than amount, e.g., included herein are m.p., b.p., viscosity, particle size, etc., as DNRM
849 ..Solid polymer from ethylenic monomer only, said polymer formed in the presence of a nonreactant material
850 ...N-containing monomer
851 ...Halogen-containing monomer
852 ...Chalcogen atom containing monomer other than ether oxygen as sole chalcogen
853 ....Carboxylic acid or derivative monomer
854 .....Monomer containing at least two carboxylic acid or derivative groups
855 ...From unsaturated hydrocarbon monomer solely
856 ....Contains two or more ethylenic unsaturated groups
857 ..Boron or metal-containing reactant forming a solid polymer or SICP in the presence of a nonreactant material
858 ..Si-containing reactant forming a solid polymer or SICP in the presence of a nonreactant material
859 ...Silicate containing compound as sole Si-containing reactant, e.g., ortho silicate esters, etc.
860 ...Poly (di organo siloxane) reactant, i.e., (R-Si(R)-O)-* where R is an organic radical and * is subscript two or more
861 ....Si-H containing reactant
862 .....With ethylenically unsaturated reactant

SYNTHETIC RESINS (Class 520, Subclass 1)
.PROCESSES OF PREPARING A DESIRED OR INTENTIONAL COMPOSITION OF AT LEAST ONE NONREACTANT MATERIAL AND AT LEAST ONE SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT, OR PRODUCT THEREOF.
..Si-containing reactant forming a solid polymer or SICP in the presence of a nonreactant material
...Poly (di organo siloxane) reactant, i.e., (R-Si(R)-O)-* where R is an organic radical and * is subscript two or more
863 ....Poly (di organo siloxane) reactant has at least one SiO other than as Si-O-Si, e.g., Si-O-C, or SiOH group, etc.
864 .....With N-containing reactant
865 .....With ethylenic unsaturated reactant
866 ....Ethylenically unsaturated reactant
868 ...Heterocyclic reactant
869 ...N-containing reactant
871 ..N=C=X containing reactant forming a solid polymer or SICP in the presence of a nonreactant material (X is chalcogen)
872 ...Two or more N=C=X containing reactants (other than conventional isomer mixtures)
873 ...Aliphatic or cycloaliphatic N=C=X compound
874 ...With N-containing reactant
875 ...With two or more alcohol hydroxyl compounds
876 ..Phenolic reactant forming a solid polymer or SICP in the presence of a nonreactant material
877 ..Aldehyde or derivative or ketone as reactant forming a solid polymer or SICP in the presence of a nonreactant material
878 ..Carboxylic acid or derivative, excluding nitrile as sole derivative as reactant forming a solid polymer in the presence of a nonreactant material
879 ...Nitrogen-containing reactant
881 ..Ethylenically unsaturated compound, or compound containing element other than C, H, O, or N (e.g., P, S, etc.) as reactant forming a solid polymer in the presence of an NRM

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CROSS-REFERENCE ART COLLECTIONS
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900 ANTIGEN-ANTIBODY
901 ELECTRODEPOSITABLE COMPOSITIONS
902 .Electrostatic spray
903 AEROSOL COMPOSITIONS
904 POWDER COATING COMPOSITIONS
905 ETCH MASKING COMPOSITIONS
906 MULTIPACKAGE COMPOSITIONS
907 ADDITIVE OF SPECIFIED SHAPE OTHER THAN FIBER, PARTICLE, OR POWDER
908 COMPOSITION HAVING SPECIFIED SHAPE, E.G., ROD, STICK, OR BALL, ETC., AND OTHER THAN SHEET, FILM, OR FIBER
909 REVERSE OSMOSIS MEMBRANE COMPOSITIONS, E.G., DESALINIZATION, ETC.
910 ANTISTATIC COMPOSITIONS
911 .Composition to apply to a substrate to be destaticized
912 .Contains metal, boron, phosphorus, or silicon
913 .Contains nitrogen nonreactant material
914 FLOOR COVERING COMPOSITIONS
915 CARPET BACKING ADHESIVES
916 HYDROGEL COMPOSITIONS
917 OIL SPILL RECOVERY COMPOSITIONS
918 WOOD PATCHING COMPOSITION
919 METAL PATCHING COMPOSITION, E.G., BODY SOLDER, ETC.
920 COILABLE PIPE COMPOSITIONS
921 ELASTIC MEMORY OR HEAT SHRINKABLE COMPOSITIONS
922 FLOCCULATING, CLARIFYING, OR FINING COMPOSITIONS
923 TREATING OR PREPARING A NONAQUEOUS DISPERSION OR EMULSION OF A SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT
924 TREATING OR PREPARING A NONAQUEOUS SOLUTION OF A SOLID POLYMER OR SPECIFIED INTERMEDIATE CONDENSATION PRODUCT
925 NATURAL RUBBER COMPOSITIONS HAVING NONREACTIVE MATERIALS (DNRM) OTHER THAN: CARBON, SILICON DIOXIDE, GLASS TITANIUM DIOXIDE, WATER, HYDROCARBON, HALOHYDROCARBON
926 .With water as NRM, exemplified
927 ..Before 1930
928 .Before 1930, exemplified
929 .Natural rubber broadly disclosed, nonclaimed

CLASS 525 PART OF THE CLASS 520 SERIES -- SYNTHETIC RESINS OR NATURAL RUBBERS

SYNTHETIC RESINS (Class 520, Subclass 1)

7 .ETHYLENICALLY UNSATURATED REACTANT ADMIXED WITH A PREFORMED REACTION PRODUCT DERIVED FROM: (a) AT LEAST ONE POLYCARBOXYLIC ACID, ESTER, OR ANHYDRIDE; (b) AT LEAST ONE POLYHYDROXY COMPOUND; AND (c) AT LEAST ONE FATTY ACID GLYCEROL ESTER, OR A FATTY ACID OR SALT DERIVED FROM A NATURALLY OCCURRING GLYCERIDE, TALL OIL, OR A TALL OIL FATTY ACID

7.1 ..Mixed in the presence of a specified material

7.2 ..Mixed with silicon-containing reactant or polymer derived therefrom

7.3 ..Mixed with aldehyde or derivative as reactant or polymer derived therefrom

7.4 ..Mixed with previously formed solid polymer or SPFI

8 .ETHYLENICALLY UNSATURATED REACTANT ADMIXED WITH A PREFORMED REACTION PRODUCT DERIVED FROM: (a) AT LEAST ONE POLYCARBOXYLIC ACID, ESTER, OR ANHYDRIDE; (b) AT LEAST ONE POLYHYDROXY COMPOUND; AND (c) AT LEAST ONE NATURAL RESIN, PROTEIN, OR BIOLOGICALLY ACTIVE POLYPEPTIDE, OR CARBOHYDRATE OR DERIVATIVE

10 .ETHYLENICALLY UNSATURATED REACTANT ADMIXED WITH EITHER (A) A POLYMER DERIVED FROM A SATURATED DI- OR HIGHER ESTER OF A POLYCARBOXYLIC ACID AS SOLE REACTANT, OR (B) REACTION PRODUCT OF ONLY POLYCARBOXYLIC ACIDS OR ANHYDRIDES WITH ONLY COMPOUNDS HAVING AT LEAST TWO HYDROXYL GROUPS AT LEAST ONE OF WHICH IS SATURATED AND WHEREIN THE REACTION PRODUCT FORMED IS NOT AFTERTREATED PRIOR TO ADMIXTURE WITH THE UNSATURATED REACTANT EXCEPT WITH A POLYCARBOXYLIC ACID, POLYCARBOXYLIC ACID ANHYDRIDE, OR A POLYOL, AND WHEREIN NO SOLID POLYMER DERIVED FROM ETHYLENIC REACTANTS ONLY IS MIXED THEREWITH

11 ..Mixed in presence of specified material or a polymerizable composition contains a specified material

12 ...Specified material contains boron or silicon atom

13 ...Specified material contains metal atom other than from group IA metal atom (Li, Na, K, Rb, Cs, Fr)

14 ....Material contains Group IB metal atom (Cu, Ag, Au)

15 ....Material contains Group IIB metal atom (Zn, Cd, Hg) or IIIA metal atom (Al, Ga, In, Tl)

16 ....Material contains Group VB metal atom (V, Nb, Ta)

17 ....Material contains Group VIII metal atom (Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt)

18 ....Material contains Group IVA metal atom (Ge, Sn, Pb)

19 ....Material contains Group IIA metal atom (Be, Mg, Ca, Sr, Ba, Ra)

20 ...Specified material contains phosphorus atom

21 ...Specified material contains ketone group

22 ...Specified material contains an aldehyde or derivative thereof

23 ...Specified material contains sulfur atom

24 ....Sulfur is part of heterocyclic ring

25 ...Specified material contains nitrogen atom

26 ....Nitrogen is part of heterocyclic ring

27 ...Specified material contains a peroxy group, i.e., -O-O-

28 ..Mixed with -N=C=X reactant or polymer derived therefrom (X is chalcogen)

29 ..Mixed with silicon-containing reactant or polymer derived therefrom

30 ..Mixed with a solid polymer or specified intermediate condensation product derived from at least one amine-, N-C(=X)- or N-S-(=O)- containing reactant and at least one aldehyde or aldehyde-type reactant (X is chalcogen)

31 ..Mixed with an 1,2-epoxy compound containing more than one 1,2-epoxy group per mole or polymer derived therefrom

32 ..Mixed with a phenolic reactant and an aldehyde or aldehyde-type reactant or reaction product thereof

32.1 ..Polymer derived from polycarboxylic acid and polyhydroxyl compound is derived from at least one polycarboxylic acid reactant which is a dimer or trimer of an ethylenically unsaturated aliphatic monocarboxylic acid having at least ten carbon atoms; or adducts of said unsaturated monocarboxylic acid with an alpha, beta ethylenically unsaturated carboxylic acid or derivative

32.2 ..Ethylenic reactant or polymer derived from polycarboxylic acid or anhydride and polyol is derived from a carbohydrate or derivative

33 ..Polymer derived from polycarboxylic acid and polyhydroxy compound is derived from at least one polycarboxylic acid containing at least three carboxyl groups or more than one anhydride group

34 ..Polymer derived from polyhydroxy reactant and polycarboxylic acid is derived from at least one reactant containing at least three hydroxyl groups

35 ..Polymer derived from polycarboxylic acid or anhydride and polyhydroxy compound is derived from at least two polycarboxylic acid reactants or two polycarboxylic acid anhydrides or mixture thereof

36 ...At least one of said polycarboxylic acid reactants or anhydrides contains ethylenic unsaturation

37 ....Polymer mixed with unsaturated reactant containing phosphorus atom

38 ....Polymer mixed with unsaturated reactant containing nitrogen atom

39 ....Polymer mixed with unsaturated reactant containing carboxylic acid, ester, salt or anhydride group

40 ....Polymer mixed with unsaturated reactant containing aryl ring

41 ..Polymer derived from polycarboxylic acid or anhydride and polyhydroxy compound is derived from at least two polyhydroxy compounds

SYNTHETIC RESINS (Class 520, Subclass 1)

.ETHYLENICALLY UNSATURATED REACTANT ADMIXED WITH EITHER (A) A POLYMER DERIVED FROM A SATURATED DI- OR HIGHER ESTER OF A POLYCARBOXYLIC ACID AS SOLE REACTANT, OR (B) REACTION PRODUCT OF ONLY POLYCARBOXYLIC ACIDS OR ANHYDRIDES WITH ONLY COMPOUNDS HAVING AT LEAST TWO HYDROXYL GROUPS AT LEAST ONE OF WHICH IS SATURATED AND WHEREIN THE REACTION PRODUCT FORMED IS NOT AFTERTREATED PRIOR TO ADMIXTURE WITH THE UNSATURATED REACTANT EXCEPT WITH A POLYCARBOXYLIC ACID, POLYCARBOXYLIC ACID ANHYDRIDE, OR A POLYOL, AND WHEREIN NO SOLID POLYMER DERIVED FROM ETHYLENIC REACTANTS ONLY IS MIXED THEREWITH

42 ..Polymer derived from polycarboxylic acid or anhydride and polyhydroxy compound is derived from polyhydroxy compound containing ether linkage

43 ..Polymer derived from polycarboxylic acid or anhydride and polyhydroxy compound wherein at least one of the reactants contains ethylenic unsaturation

44 ...Polymer mixed with unsaturated reactant containing two or more unsaturated groups

45 ....Wherein unsaturated reactant contains three nitrogen atoms in the same ring

46 ...Polymer mixed with unsaturated reactant containing nitrogen atom

47 ....Unsaturated reactant contains nitrogen heterocycle

48 ...Polymer mixed with unsaturated carboxylic acid, ester, salt, or anhydride

49 ...Polymer mixed with unsaturated aromatic compound

The following notation has been adopted for use in the schedule of this Class:

SICP = specified intermediate condensation product

SPFI = specified polymer-forming ingredients

See Class 525 Definition, subclass 50 for specific definition of these terms.

50 .MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS

51 ..Effecting a change in a process in response to a measurement or test

52 ..Utilizing a tubular or loop reactor

53 ..Utilizing an apparatus with two or more physically distinct zones

54 ..Removing and recycling material from one zone to another

54.1 ..Containing chemically combined protein or biologically active polypeptide

54.11 ...Solid polymer treated by stepwise reaction with naturally occurring alpha or beta amino acid or a material which contains a residue of said amino acid, e.g., a functionally protected amino acid, etc.

54.2 ..Previously formed solid polymer chemically reacted with carbohydrate or derivative

54.21 ...Cellulose or derivative as chemical reactant

54.22 ....Previously formed solid polymer is derived from N=C=X reactant or contains N=C=X group wherein X is chalcogen

54.23 ....Previously formed solid polymer is derived from ethylenically unsaturated reactants only

54.24 ...Starch, starch flour or meal, or derivative as chemical reactant

54.26 ....Previously formed solid polymer derived from ethylenic reactants only

54.3 ..Previously formed solid polymer containing chemically combined carbohydrate admixed with a chemical treating or ethylenic agent, SPFI, SICP, or solid polymer

54.31 ...Carbohydrate containing polymer is derived from starch, or starch containing flour or meal

54.32 ....Carbohydrate containing polymer derived from acrylonitrile

54.4 ..Containing chemically combined natural resin or derivative thereof other than tall oil

54.41 ...Shellac

54.42 ...Previously formed solid polymer chemically reacted with natural resin or derivative

54.44 ....At least one previously formed solid polymer derived from ethylenic monomers only

54.45 ...Previously formed solid polymer containing chemically combined natural resin or derivative admixed with an ethylenic agent or a chemical treating agent other than SICP or SPFI

54.5 ..Chemically combined coal, bituminous material, extract, or derivative thereof; oil shale; or fatty still residue

55 ..At least one solid polymer derived from ethylenic reactants only

56 ...Polyvinyl alcohol

57 ....With solid polymer derived from ethylenic reactants only

58 ....With SICP, SPFI, or polymer thereof

59 ....With ethylenic reactant

60 ....Interpolymers

61 ....Chemical modification utilizing a chemical treating agent

62 ....Processes only of preparing polyvinyl alcohol

63 ...Mixing of solid graft or graft-type copolymer with other solid polymer wherein one of said solid polymers is not derived from ethylenic reactants only; mixing of said polymer mixture with a chemical treating agent; or mixing of graft or graft-type copolymer with a SICP or SPFI; or processes of forming or reacting; or the resultant product of any of the above operations

64 ....Solid graft or graft-type copolymer derived from ethylenic reactants only

SYNTHETIC RESINS (Class 520, Subclass 1)

.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS

..At least one solid polymer derived from ethylenic reactants only

...Mixing of solid graft or graft-type copolymer with other solid polymer wherein one of said solid polymers is not derived from ethylenic reactants only; mixing of said polymer mixture with a chemical treating agent; or mixing of graft or graft-type copolymer with a SICP or SPFI; or processes of forming or reacting; or the resultant product of any of the above operations

....Solid graft or graft-type copolymer derived from ethylenic reactants only

65 .....With saturated 1,2-epoxy reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom; or with solid copolymer derived from at least one unsaturated 1,2-epoxy reactant wherein the epoxy reactant contains more than one 1,2-epoxy group per mole and at least one saturated reactant

66 .....With solid polymer derived from at least one nitrogen-containing reactant wherein at least one of the reactants forming the solid polymer is saturated; or with SPFI wherein at least one of the necessary ingredients contains a nitrogen atom or with a reaction product thereof; or with nitrogen-containing SICP

67 .....With solid polymer derived from at least one hal-C(=O)-hal, O-C(=O)-O or hal-C(=O)-O- reactant wherein at least one of the reactants forming the solid polymer is saturated; or with SPFI wherein at least one of the necessary ingredients is a hal-C(=O)-hal, O-C(=O)-O, or hal-C(=O)-O containing reactant or reaction product thereof; or with a SICP containing a hal-C(=O)- or O-C(=O)-O- group

68 .....With solid polymer derived from at least one phenolic reactant wherein at least one of the reactants forming the solid polymer is saturated; or with SPFI wherein at least one of the necessary ingredients is a phenolic reactant or with a reaction product thereof; or with phenolic-containing SICP

69 ....Solid graft or graft-type copolymer contains backbone derived from ethylenic reactants only

70 ...Mixing of solid graft or graft-type copolymer derived from ethylenic reactants only with other solid polymer derived from ethylenic reactants only; or treating said mixture with chemical treating agent; or processes of forming or reacting; or the resultant product of any of the above operations

71 ....Contains two or more graft or graft-type copolymers or a graft or a graft-type copolymer and at least one block or block-type copolymer

72 ....Mixture contains solid polymer derived from reactants containing an atom other than C, H, O, N, or chlorine

73 ....Mixture contains solid polymer derived from reactant containing nitrogen heterocycle

74 ....Mixture contains solid polymer derived from reactant containing oxygen heterocycle

75 ....Mixture contains solid polymer derived from reactant containing a fused- or bridged-ring system or from cycloaliphatic reactant

76 ....Mixture contains solid polymer derived from chlorine-containing reactant other than from vinyl(idene) chloride

77 ....Mixture contains solid polymer derived from reactant containing nitrogen other than from (meth)acrylonitrile

78 ....Mixture contains solid polymer derived from reactant containing carboxylic acid group

79 ....Mixture contains solid polymer derived from reactant containing ether or hydroxyl group

80 ....Mixture contains solid polymer derived from reactant containing carboxylic acid ester group

81 .....Reactant contains at least two ester groups

82 ......Ester derived from a polyol

83 .....Substrate polymer derived from hydrocarbon containing plural unsaturation

84 ......Polymer substrate derived from hydrocarbon reactants only

85 .....Polymer substrate derived from an unsaturated carboxylic acid ester

86 ....Mixture contains solid polymer derived from nonaromatic reactant containing plural ethylenically unsaturated groups

87 .....Solid polymer other than graft or graft-type derived from nonaromatic plural ethylenically unsaturated reactant

88 ...Mixing of solid block or block-type copolymer with other solid polymer; mixing of said polymer mixture with a chemical treating agent; mixing of a block or block-type copolymer with SICP or with SPFI; or processes of forming or reacting; or the resultant product of any of the above operations

89 ....Mixture contains two or more solid block or block-type copolymers

SYNTHETIC RESINS (Class 520, Subclass 1)
.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS
..At least one solid polymer derived from ethylenic reactants only
...Mixing of solid block or block-type copolymer with other solid polymer; mixing of said polymer mixture with a chemical treating agent; mixing of a block or block-type copolymer with SICP or with SPFI; or processes of forming or reacting; or the resultant product of any of the above operations
90 ....Mixture contains solid block copolymer wherein at least one block is derived from ethylenic reactants only and at least one block is derived from at least one saturated reactant
91 .....Block derived from at least one saturated reactant containing a heterocycle
92 ....Mixture contains solid polymer derived from at least one saturated reactant, SICP, or SPFI
93 ....Mixture contains solid polymer derived from reactant containing chalcogen
94 .....Solid block or block-type copolymer derived from reactant containing carboxylic acid ester group
95 ....Mixture contains solid block or block-type copolymer derived from ethylenically unsaturated hydrocarbon reactants only at least one of which contains at least four carbon atoms
96 .....With solid polymer derived from reactant containing an atom other than C, H or chalcogen
97 .....Mixture contains solid polymer derived from reactant containing a fused- or bridged-ring system
98 .....Solid block or block-type copolymer derived from reactant containing plural unsaturation
99 ......With solid polymer derived from reactant containing plural unsaturation
100 ...With saturated Si-C or Si-H reactant or polymer thereof; or with solid copolymer derived from at least one Si-C or Si-H reactant wherein at least one of the reactants forming the solid copolymer is saturated; or with SPFI wherein at least one of the necessary ingredients contains a Si-C or Si-H bond or with a reaction product thereof; or with a SICP containing a Si-H or Si-C bond
101 ....Contacting with nonsilicon-containing SICP, nonsilicon-containing SPFI, or polymer thereof; or with two or more solid polymers
102 ....Si-H or Si-C reactant contains an atom other than C, H, O, or Si bonded to a carbon atom
103 ....Solid polymer from ethylenic reactants only is derived from heterocyclic reactant
104 ....Solid polymer from ethylenic reactants only is derived from reactant containing halogen atom
105 ....Solid polymer from ethylenic reactants only is derived from plural unsaturated hydrocarbon
106 ....Solid polymer from ethylenic reactants only is derived from unsaturated hydrocarbon
107 ...With saturated 1,2-epoxy reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom; or with solid copolymer derived from at least one saturated reactant and at least one unsaturated 1,2-epoxy reactant wherein the epoxy reactant contains more than one 1,2-epoxy group per mole
108 ....Contacting two or more solid polymers derived from ethylenic reactants only with a poly 1,2-epoxy-containing reactant; or contacting a solid polymer derived from ethylenic reactants only with a poly 1,2-epoxy-containing reactant and subsequently contacting with an additional polymer derived from ethylenic reactants only
109 ...With phenolic reactant or polymer thereof and is free of 1,2-epoxy groups
110 ....With reactant which is an aldehyde, aldehyde derivative, or polymer thereof, and which is free of an 1,2-epoxy group (included herein are alkylated methylol groups)
111 ....With reactant which is free of an 1,2-epoxy group and which contains a -N=C=X group or polymer thereof (X is chalcogen); or with a polyol and a polycarboxylic acid or reaction product thereof which is free of an 1,2-epoxy group
111.5 ....With a reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil
112 ....Contacting polymer from ethylenic reactants only with ethylenic reactant wherein said contacting is either concurrent with or subsequent to the contacting with the saturated poly 1,2-epoxy reactant
113 ....With nitrogen-containing reactant, or wherein the poly 1,2-epoxy reactant contains a nitrogen atom
114 ....With additional heterocyclic reactant free of 1,2-epoxy group
115 ....Poly 1,2-epoxy reactant contains an atom other than C, H, or O
116 ....Polymer derived from ethylenic reactants only derived from reactant containing an atom other than C, H, N, O, or halogen
117 ....Polymer derived from ethylenic reactants only derived from heterocyclic reactant

SYNTHETIC RESINS (Class 520, Subclass 1)

.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS

..At least one solid polymer derived from ethylenic reactants only

...With saturated 1,2-epoxy reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom; or with solid copolymer derived from at least one saturated reactant and at least one unsaturated 1,2-epoxy reactant wherein the epoxy reactant contains more than one 1,2-epoxy group per mole

118 ....Polymer derived from ethylenic reactants only derived from reactant containing an alcohol or ether group (includes phenols)

119 ....Polymer derived from ethylenic reactants only derived from reactant containing a -COOH group

120 ....Polymer derived from ethylenic reactants only derived from nonaromatic monoolefin

121 ....Polymer derived from ethylenic reactants only derived from reactant containing a halogen atom

122 ....Polymer derived from ethylenic reactants only derived from unsaturated hydrocarbon

123 ...With saturated -N=C=X (X is chalcogen) reactant or polymer thereof; or with solid copolymer derived from at least one -N=C=X reactant wherein at least one of the reactants forming the solid copolymer is saturated; or with SPFI wherein at least one of the necessary ingredients contains a -N=C=X group or with a reaction product thereof; or with SICP containing a -N=C=X group

124 ....Blocked isocyanate reactant

125 ....Contacting two or more solid polymers derived from ethylenic reactants only with a -N=C=X reactant or polymer thereof; or contacting a polymer derived from an ethylenic reactant only with a -N=C=X reactant or polymer thereof and subsequently adding thereto a solid polymer derived only from ethylenic reactants

126 ....Contacting solid polymer from ethylenic reactants only with ethylenic reactant wherein said contacting is either concurrent with or subsequent to contacting of said solid polymer with the -N=C=X reactant or polymer thereof

127 ....Contacting with a -N=C=X-containing reactant which has been previously reacted with an organic compound containing a hydroxyl, amine, or -C(=O)-O- group

128 .....-N=C=X reactant has been previously reacted with an organic amine

129 .....Solid polymer from ethylenic reactants only derived from halogen-containing reactant

130 .....Solid polymer from ethylenic reactants only derived from hydrocarbon reactant

131 ....Contacting with -N=C=X-containing reactant and with additional organic reactant containing a hydroxyl or amine group or polymer thereof

132 ...With saturated phenolic reactant or polymer thereof; or with solid copolymer derived from at least one phenolic reactant wherein at least one of the reactants forming the solid copolymer is saturated; or with SPFI wherein at least one of the necessary ingredients is a phenolic reactant or with a reaction product thereof; or with a SICP containing a phenolic group

133 ....Contacting two or more solid polymers with a phenolic reactant; or contacting a solid polymer with a phenolic reactant and subsequently contacting the treated polymer with an additional solid polymer

133.5 ....With a reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil

134 ....Contacting with aldehyde or aldehyde-type reactant or polymer therefrom

135 .....At least two distinct phenols, phenol ethers, inorganic phenolates, or mixtures thereof prior to reaction with aldehyde or aldehyde-type reactant

136 .....Phenolic reactant prior to contact with aldehyde or aldehyde-type reactant contains an atom other than C, H, or O

137 .....Phenolic reactant prior to contact with aldehyde or aldehyde-type reactant contains at least two aryl rings each of which contains phenolic substituents

138 .....With nonethylenic, nonaldehyde, or nonaldehyde-type reactant containing an atom other than C, H, or O

139 .....Solid polymer derived from ethylenic reactants only is derived from reactant containing at least two ethylenic groups

140 ......Phenolic reactant has at least two nuclear carbon atoms directly bonded to extracyclic carbon atoms which extracyclic carbon atoms are not part of a methylol group

141 ......Solid polymer from ethylenic reactants only is derived from both a reactant containing two ethylenic groups and an acyclic monoethylenic hydrocarbon

142 .....Solid polymer derived from ethylenic reactants only is derived from a nitrogen-containing reactant

SYNTHETIC RESINS (Class 520, Subclass 1)

.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS

..At least one solid polymer derived from ethylenic reactants only

...With saturated phenolic reactant or polymer thereof; or with solid copolymer derived from at least one phenolic reactant wherein at least one of the reactants forming the solid copolymer is saturated; or with SPFI wherein at least one of the necessary ingredients is a phenolic reactant or with a reaction product thereof; or with a SICP containing a phenolic group

....Contacting with aldehyde or aldehyde-type reactant or polymer therefrom

143 .....Solid polymer derived from ethylenic reactants only is derived from a reactant containing a carboxylic acid or derivative thereof

144 .....Solid polymer derived from ethylenic reactants only is derived from a reactant containing at least one halogen atom

145 .....Solid polymer derived from ethylenic reactants only is derived from an acyclic hydrocarbon

146 ....With a -O-C(=O)-O-, -O-C(=O)-hal or hal-C(=O)-hal group-containing reactant or polymer thereof

147 .....Two or more diverse phenolic reactants; or phenolic reactant contains an atom other than C, H, or O

148 .....Solid polymer derived from ethylenic reactants only is derived from a reactant containing a carboxylic acid or derivative thereof

149 ....Contains ethylenic reactant other than from a solid polymer derived from ethylenic reactants only, e.g., reaction product from a phenol and unsaturated hydrocarbon, etc.

150 ....Phenolic reactant contains a phosphorus or sulfur atom or with phosphorus- or sulfur-containing reactant

151 ....Solid polymer derived from ethylenic reactants only is derived from a reactant containing at least one halogen atom

152 ....Solid polymer derived from ethylenic reactants only is derived from a reactant containing a polycyclic ring system or two or more ethylenic groups

153 ...With saturated ketone reactant or polymer thereof; or with solid copolymer derived from at least one ketone reactant wherein at least one of the reactants forming the solid copolymer is saturated; or with SPFI wherein at least one of the necessary ingredients is a ketone or with a reaction product thereof; or with a SICP containing a ketone group

154 ...With saturated aldehyde or aldehyde derivative (including methylol ethers or condensates) reactant or solid polymer thereof; or with solid copolymer derived from at least one aldehyde or aldehyde derivative reactant wherein at least one of the reactants forming the solid copolymer is saturated; or with SPFI wherein at least one of the necessary ingredients is an aldehyde or aldehyde derivative reactant or with a reaction product thereof; or with SICP containing an aldehyde or aldehyde derivative

155 ....Contacting two or more solid polymers derived from ethylenic reactants only with an aldehyde or aldehyde-type reactant; or contacting a polymer derived from ethylenic reactant and subsequently contacting with a solid polymer derived from ethylenic reactants only

156 ....Contacting with a hydrocarbon and an aldehyde or aldehyde derivative as reactants at least one of which is saturated, their condensate or solid polymer thereof

157 ....Contacting with an amine, a material containing a N-C(=X)- or N-S(=O)- (X is chalcogen) reactant and an aldehyde or aldehyde derivative at least one of which is saturated, their condensate or solid polymer thereof

158 .....Reactant, condensate, or solid polymer contains an element other than C, H, N, or O; or wherein a coreactant is not an aldehyde or aldehyde-type reactant, alcohol, amine, or reactant containing a N-C(=O)- group

159 .....Reactant derived from alcohol containing an aryl group or eight or more carbon atoms

160 .....Solid polymer derived from ethylenic reactants only contains an element other than C, H, O, or N

161 .....Solid polymer derived from ethylenic reactants only derived from reactant containing a heterocyclic ring or fused-, bridged-ring system excluding an anhydride group which produces the fused- or bridged-ring system or heterocyclic ring

162 .....Solid polymer derived from ethylenic reactant only derived from reactant containing hydroxyl or ether group

163 .....Solid polymer derived from ethylenic reactants only containing a carboxylic acid, ester, or anhydride group

SYNTHETIC RESINS (Class 520, Subclass 1)

.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS

..At least one solid polymer derived from ethylenic reactants only

...With saturated aldehyde or aldehyde derivative (including methylol ethers or condensates) reactant or solid polymer thereof; or with solid copolymer derived from at least one aldehyde or aldehyde derivative reactant wherein at least one of the reactants forming the solid copolymer is saturated; or with SPFI wherein at least one of the necessary ingredients is an aldehyde or aldehyde derivative reactant or with a reaction product thereof; or with SICP containing an aldehyde or aldehyde derivative

....Contacting with an amine, a material containing a N-C(=X)- or N-S(=O)- (X is chalcogen) reactant and an aldehyde or aldehyde derivative at least one of which is saturated, their condensate or solid polymer thereof

164 .....Solid polymer derived from unsaturated hydrocarbon

165 ...With polycarboxylic acid or derivative and a polyol at least one of which is saturated, a condensate or solid polymer thereof; or with solid polymer derived from at least one polycarboxylic acid or derivative and at least one polyol wherein at least one the reactants forming the solid polymer is saturated

166 ....Two or more solid polymers present other than derived from a polycarboxylic acid or derivative and a polyol

167 ....Polycarboxylic acid or derivative or polyol contains an atom other than C, H, or O; or wherein a polycarboxylic acid or derivative or polyol or condensate thereof is reacted with a reactant containing atoms other than C, H, or O prior to blending with the solid polymer; or wherein a coreactant with the polycarboxylic acid or derivative or polyol contains an atom other than C, H, or O

167.5 ....With a reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil

168 ....Polycarboxylic acid or derivative, polyol, or other coreactant contains an ethylenic group; or wherein a condensate thereof has been prepared from a polycarboxylic acid or derivative and a polyol and subsequently reacted with an ethylenic reactant

169 .....Solid polymer derived from ethylenic reactants only derived from at least one reactant containing an atom other than C, H, or O

170 .....Solid polymer derived from ethylenic reactants only derived from at least one reactant containing an oxygen atom

171 .....Solid polymer derived from ethylenic reactants only derived from at least one hydrocarbon reactant containing at least two ethylenic groups

172 ....Polycarboxylic acid or derivative contains three or more carboxylic acid groups or derivatives thereof; or wherein a polyol contains at least three hydroxyl groups

173 ....From two or more polyols

174 ....From two or more carboxylic acids or derivatives thereof

175 ....Solid polymer derived from ethylenic reactants only derived from at least one reactant containing an atom other than C, H, O, or Hal

176 ....Solid polymer derived from ethylenic reactants only derived from at least one reactant containing an oxygen atom

177 ....Solid polymer derived from ethylenic reactants only derived from unsaturated hydrocarbon

178 ...With a polycarboxylic acid or derivative and a polyamine or the corresponding salt thereof; or with a lactam; or with an aminocarboxylic acid; or with the corresponding polymers; and wherein the monomer or polymer was derived from at least one saturated reactant

179 ....Two or more solid polymers other than prepared from a polycarboxylic acid or derivative and a polyamine, a lactam, an aminocarboxylic acid or derivative, or from a polyamine salt of a polycarboxylic acid

180 ....Polycarboxylic acid or derivative contains three or more carboxylic acid groups; or polyamine contains three or more amino groups; or from an amino-containing polycarboxylic acid or derivative other than amine solely in salt form; or from polyamino carboxylic acid or derivative other than wherein amino groups are solely in salt form

181 ....With ethylenically unsaturated reactant; or reactant contains a heterocyclic ring other than solely as a lactam or cyclic anhydride of a polycarboxylic acid

182 ....Solid polymer derived from ethylenically unsaturated reactant only is one derived from a reactant containing a heterocyclic ring and is other than solely a cyclic anhydride of a polycarboxylic acid

SYNTHETIC RESINS (Class 520, Subclass 1)
.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS
..At least one solid polymer derived from ethylenic reactants only
...With a polycarboxylic acid or derivative and a polyamine or the corresponding salt thereof; or with a lactam; or with an aminocarboxylic acid; or with the corresponding polymers; and wherein the monomer or polymer was derived from at least one saturated reactant
183 ....Solid polymer derived from ethylenically unsaturated reactant only is derived from a reactant containing a carboxylic acid or derivative
184 ....Solid polymer derived from ethylenically unsaturated hydrocarbon
185 ...With additional solid polymer derived from at least one nonethylenic reactant
186 ....At least one reactant which forms additional polymer contains a heterocyclic ring
187 .....Heterocyclic ring is an 1,2-epoxy ring
188 ....At least one reactant which forms additional polymer contains a phosphorus atom
189 ....At least one reactant which forms additional polymer contains a sulfur atom
190 ....At least one reactant which forms additional polymer contains a carboxylic acid or derivative
191 ...Polymer mixture of two or more solid polymers derived from ethylenically unsaturated reactants only; or mixtures of said polymer mixture with a chemical treating agent; or products or processes of preparing any of the above mixtures
192 ....Treating polymer or polymer mixture with a chemical treating agent other than solid polymer
193 .....Agent contains an ethylenic group
194 .....Agent is an organic material
195 ......Contains a metal atom
196 .....Agent contains a metal atom
197 ....Specified blending process
198 .....With subsequent physical treatment
199 ....Solid polymer derived from fluorine-containing ethylenic reactant
200 .....Fluorine reactant contains atoms other than C, H, or Hal
201 ....Solid polymer derived from metal-containing ethylenic reactant
202 ....Solid polymer derived from reactant containing an acetylenic group
203 ....Solid polymer derived from ethylenic reactant containing a heterocyclic nitrogen
204 .....Heterocyclic reactant contains at least two hetero atoms in the same ring and at least one of which is nitrogen
205 .....Heterocyclic reactant is an imide or lactam
206 ....Solid polymer derived from reactant containing a chalcogen atom (O, S, Se, Te) as part of a heterocyclic ring
207 .....Heterocyclic reactant contains anhydride group
208 .....Heterocyclic reactant contains 1,2-epoxy group
209 ....Solid polymer derived from reactant containing elements other than C, H, O, N, S, or Cl
210 ....Solid polymer derived from reactant containing a fused- or bridged-ring system
211 .....Fused- or bridged-ring reactant contains at least two ethylenic groups
212 ....Solid polymer derived from sulfur-containing reactant
213 ....Solid polymer derived from chlorine-containing reactant other than vinyl(idene) chloride
214 .....Halogenated hydrocarbon other than vinyl(idene) chloride
215 ......Halogenated hydrocarbon contains at least two ethylenic groups and is devoid of an aryl ring
216 ....Solid polymer derived from cycloaliphatic-containing reactant
217 ....Solid polymer derived from reactant containing nitrogen atom other than from (meth)acrylonitrile
218 .....Nitrogen reactant contains a carboxylic acid amide group
219 ....Solid polymer derived from reactant containing a phenolic group
220 ....Solid polymer derived from reactant containing a carbonyl group other than as part of a carboxylic acid or derivative
221 ....Solid polymer derived from reactant containing a carboxylic acid group
222 ....Solid polymer derived from reactant containing a carboxylic acid ester group
223 .....Ester contains an oxygen atom other than as part of a carboxylic acid ester group
224 .....Ester derived from both an unsaturated carboxylic acid and an unsaturated alcohol
225 .....Ester contains at least two carboxylic acid ester groups
226 ......Ester derived from polyol
227 .....Ester derived from an unsaturated carboxylic acid
228 ......At least two polymers derived from carboxylic acid ester reactants
229 ....Ester derived from an unsaturated alcohol
230 ......Polymer derived from nitrogen-containing reactant
231 ....Solid polymer derived from oxygen-containing reactant
232 ....Solid polymer derived from reactant containing at least two ethylenic groups and is devoid of aryl ring
233 .....Polymer derived from nitrogen-containing reactant
234 ......At least two polymers derived from nitrogen-containing reactants

SYNTHETIC RESINS (Class 520, Subclass 1)

.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS

..At least one solid polymer derived from ethylenic reactants only

...Polymer mixture of two or more solid polymers derived from ethylenically unsaturated reactants only; or mixtures of said polymer mixture with a chemical treating agent; or products or processes of preparing any of the above mixtures

....Solid polymer derived from reactant containing at least two ethylenic groups and is devoid of aryl ring

235 .....Polymer derived from halogen-containing reactant

236 .....At least two polymers derived from reactants containing two or more ethylenic groups and devoid of an aryl ring

237 ......At least one of these polymers is derived from two or more reactants

238 ....Solid polymer derived from (meth)acrylonitrile

239 ....Solid polymer derived from vinyl(idene) chloride

240 ....Solid polymer derived from ethylene or propylene

241 ....Solid polymer derived from an aromatic hydrocarbon reactant

242 ...Polymer derived from ethylenic reactants only mixed with ethylenic reactant

243 ....Reactions with ethylenic reactants in two or more diverse phases, e.g., bulk, emulsion, melt, solution, etc.

244 ....Contacting a solid polymer derived from ethylenic reactants only with an ethylenic reactant in the presence of a specified material

245 .....Specified material contains transition metal atom

246 ......In presence of water

247 ......Contains nontransition metal atom

248 .....Specified material contains a carbon or hydrogen atom bonded directly to a metal atom

249 ......Metal atom is aluminum

250 ......Metal atom is Group IA metal atom (Li, Na, K, Rb, Cs, Fr)

251 .....Specified material contains a boron atom

252 .....Specified material is a carbohydrate or is a solid synthetic polymer not intended to be in the final product

253 ......Material contains a free alcohol group or is alcoholate thereof

254 .....Specified material contains silicon atom

255 .....Specified material contains a phosphorus atom

256 .....Specified material contains a heterocyclic ring

257 .....Specified material contains a ketone group

258 .....Specified material contains an ether group

259 .....Specified material contains an organic nitrogen compound

260 ......Organic nitrogen compound contains an azo group, i.e., -N=N-

261 .....Specified material contains an organic sulfur compound

262 .....Specified material contains a carboxylic acid or derivative

263 .....Specified material contains a peroxy group, i.e., -O-O-

264 ......Contains nonperoxy compound or inorganic peroxy compound

265 ......Aromatic or cycloaliphatic peroxy compound

266 .....Specified material contains an organic chalcogen compound

267 ....Including step of preparing a polymer in the presence of a specified material and in the absence of a preformed polymer derived from ethylenic reactant only

268 .....Specified material contains a transition metal atom

269 ......Transition metal is other than Group IVB, VB, or VIB metal atom

270 ......With nonmetal, nonhydrocarbon compound

271 .....Specified material contains a Group IA atom in elemental form or bonded to hydrogen or carbon

272 ......Contains an atom other than Group IA, C, or H

273 .....Specified material contains a compound containing a peroxy group, i.e., -O-O-

274 ....Ethylenic reactant contains a metal atom

275 ....Ethylenic reactant contains an acetylenic group

276 ....Ethylenic reactant contains a fluorine atom

277 ....Ethylenic reactant contains a carbonate group

278 ....Ethylenic reactant contains a carbamate group

279 ....Ethylenic reactant contains nitrogen heterocycle, e.g., pyridine, diazines, etc.

280 .....Block copolymer

281 .....Nitrogen heterocycle contains at least two nitrogen atoms in the same ring

282 .....Imide

283 .....Lactam

284 ....Ethylenic reactant contains a chalcogen heterocycle

285 .....Cyclic anhydride

286 .....Three-membered ring containing two carbon and one chalcogen atom

287 ....Ethylenic reactant contains a phosphorus atom

288 ....Ethylenic reactant contains atoms other than C, H, O, N, S, or Cl

289 ....Ethylenic reactant contains a fused- or bridged-ring system

290 .....Dicyclopentadiene-containing group

291 ....Ethylenic reactant contains a sulfur atom

292 ....Ethylenic reactant contains a chlorine atom and is other than vinyl(idene) chloride

293 ....Ethylenic material contains a nitrogen atom and is other than (meth)acrylonitrile

SYNTHETIC RESINS (Class 520, Subclass 1)
.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS
..At least one solid polymer derived from ethylenic reactants only
...Polymer derived from ethylenic reactants only mixed with ethylenic reactant
....Ethylenic material contains a nitrogen atom and is other than (meth)acrylonitrile
294 .....Block copolymer derived from nitrogen-containing reactant
295 .....Nitrogen atom is part of a nitrile group and is other than (meth)acrylonitrile
296 .....Nitrogen atom is part of a carboxylic acid amide group
297 ....Ethylenic reactant contains a cycloaliphatic group
298 ....Ethylenic reactant contains an oxygen atom
299 .....Block copolymer derived from oxygen-containing reactant
300 .....Oxygen atom is part of a ketone or ketene group
301 .....Oxygen atom is part of a carboxylic acid group
301.5 ......Unsaturated fatty acid derived from a naturally occurring glyceride, tall oil, or an unsaturated fatty acid derived from tall oil
302 .....Oxygen atom is part of a carboxylic acid ester group
303 ......Ester contains an oxygen atom other than as a carboxylic acid ester group
304 ......Ester contains at least two carboxylic acid ester groups
305 ....Ester is derived from a polyol
306 ....Ester is derived from an unsaturated alcohol
307 ......Ester is derived from an unsaturated carboxylic acid and an unsaturated alcohol
308 ......Ester is derived from an unsaturated carboxylic acid
309 ....Ester derived from an unsaturated carboxylic acid is reacted in the presence of a solid polymer
310 ....Ester reactant derived from an unsaturated carboxylic acid is reacted in the presence of a solid polymer substrate derived from a polyene hydrocarbon
311 ......Ester reactant derived from an unsaturated alcohol is reacted in the presence of a solid polymer
312 .....Oxygen atom is part of an ether group
313 ....Ethylenic reactant contains at least two unsaturated groups and is devoid of an aromatic group
314 .....Block copolymer derived from reactant containing at least two unsaturated groups and is free of an aromatic group
315 .....Ethylenic reactant reacted in the presence of a solid polymer substrate derived from reactant containing two unsaturated groups and is devoid of an aromatic group
316 ......Ethylenic reactant is an aromatic hydrocarbon
317 ....Ethylenic reactant is vinyl(idene) chloride
318 .....Block copolymer derived from vinyl(idene) chloride
319 ....Ethylenic reactant is acyclic hydrocarbon
320 .....Acyclic hydrocarbon contains five or more carbon atoms
321 ......Block copolymer derived from acyclic hydrocarbon containing five or more carbon atoms
322 .....Acyclic hydrocarbon is propylene
323 ......Block copolymer derived from propylene
324 .....Acyclic hydrocarbon is ethylene
326.1 ...Chemically after treated solid polymers derived from ethylenically unsaturated monomers only
326.2 ....Polymer derived from fluorine monomer
326.3 .....Vulcanized or crosslinked in presence of chemical treating agent
326.4 .....Halogen containing chemical treating agent; or dehalogenated
326.5 ....Polymer derived from silicon monomer
326.6 ....Polymer derived from monomer containing atom other than: C, H, N, O, S, halogen or group IA or IIA carboxylate
326.7 ....Polymer derived from monomer containing nitrogen atom as part of a heterocyclic ring
326.8 .....Oxygen atom in ring or bonded directly to the nuclear carbon of ring monomer
326.9 ......Lactam monomer, e.g., vinyl pyrrolidone, etc.
327.1 .....6 membered ring containing 5 carbons and 1 nitrogen, monomer, e.g., vinyl pyridine, etc.
327.2 ....Polymer derived from monomer containing chalcogen as part of heterocyclic ring other than solely as cyclic anhydride of ethylenically unsaturated dicarboxylic acid
327.3 .....Three membered chalcogen ring monomer, e.g., oxirane, etc.
327.4 ....Polymer derived from carboxylic acid anhydride monomer
327.5 .....Sulfur containing chemical treating agent
327.6 .....Nitrogen containing chemical treating agent other than unsubstituted ammonium as sole nitrogen
327.7 .....Esterified, i.e., preparation of COOR linkage
327.8 .....Hydrolyzed; neutralized; or metal containing chemical treating agent
327.9 ....Polymer from unsaturated petroleum hydrocarbon fraction as monomer
328.1 ....Polymer derived from acetylenic monomer

	SYNTHETIC RESINS (Class 520, Subclass 1)
	.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS
	..At least one solid polymer derived from ethylenic reactants only
	...Chemically after treated solid polymers derived from ethylenically unsaturated monomers only
328.2	....Polymer derived from monomer containing nitrogen other than: unsubstituted ammonium, acrylonitrile, acrylamide, methylolacrylamide and the corresponding methacryl materials
328.3	.....At least one monomer containing two or more ethylenic groups
328.4	.....Monomer containing two or more nitrogen atoms, or two or more nitrogen containing monomers
328.5	....Polymer derived from sulfur monomer
328.6	....Polymer derived from ketone monomer
328.7	....Polymer derived from aldehyde monomer
328.8	....Polymer derived from alcohol monomer
328.9	....Polymer derived from ether monomer
329.1	....Polymer derived from acrylonitrile or methacrylonitrile monomer
329.2	.....Interpolymers
329.3	......Contains monomer having two or more ethylenic groups
329.4	....Polymer derived from acrylamide or methacrylamide monomer
329.5	....Polymer derived from carboxylic acid or derivative monomer other than: vinyl acetate; or acrylic-or-methacrylic-acid, or derivatives
329.6	.....Butene dioic acid or derivative monomer
329.7	....Polymer derived from acrylic or methacrylic acids, acid halides or salt monomers
329.8	.....Sulfur or phosphorus containing chemical treating agent
329.9	.....Nitrogen containing chemical treating agent
330.1	.....Esterified, i.e., preparation of COOR linkage
330.2	.....Hydrolyzed; neutralized; or metal containing chemical treating agent
330.3	....Polymer derived from acrylic or methacrylic esters, or vinyl acetate monomer
330.4	.....Sulfur or phosphorus containing chemical treating agent
330.5	.....Nitrogen containing chemical treating agent
330.6	.....Alcoholized; transesterified; hydrolyzed; or metal containing chemical treating agent; e.g., saponified, etc.
330.7	....Polymer derived from halogen monomer
330.8	.....At least one monomer contains two or more ethylenic groups
330.9	......Vulcanized or crosslinked, in the presence of a chemical treating agent, e.g., cured, etc.
331.1	.......Nitrogen containing chemical treating agent
331.2	.......Halogen containing chemical treating agent
331.3	......Nitrogen containing chemical treating agent
331.4	.....Monomer contains chlorine
331.5	......Vinyl chloride or vinylidene chloride
331.6	.......Halogen containing chemical treating agent
331.7	....Ethylene-propylene terpolymer, e.g., EPT, EPDM, EPR, etc.
331.8	.....Sulfur containing chemical treating agent
331.9	....Polymer derived from monomer containing at least two ethylenic groups or diene rubber
332.1	.....Monomer contains non-conjugated diene group or at least one fused or bridged ring or at least one cycloaliphatic structure
332.2	......Divinyl benzene
332.3	.....Halogen containing chemical treating agent
332.4	......Sulfur containing chemical treating agent
332.5	.....Vulcanized in the presence of a chemical treating agent, e.g., cured, crosslinked, etc.
332.6	......Sulfur containing chemical treating agent
332.7	.......Nitrogen containing chemical treating agent
332.8	.....Interpolymer with aliphatic hydrocarbon monomer (includes additional diene monomer)
332.9	.....Interpolymer with aromatic hydrocarbon
333.1	.....Isoprene or diene rubber other than butadiene rubber
333.2	.....Butadiene homopolymer
333.3	....Polymer derived from aromatic hydrocarbon monomer, e.g., styrene, etc.
333.4	.....Halogenated polymer
333.5	.....Sulfur containing chemical treating agent
333.6	.....Nitrogen containing chemical treating agent
333.7	....Polymer derived from acyclic hydrocarbon monomer only
333.8	.....Air, elemental oxygen, ozone or peroxide chemical treating agent
333.9	.....Sulfur containing chemical treating agent
334.1	.....Halogenated polymer
337	...Chemical treating agent contains boron or boron-containing compound other than boron trihalide or nonmetal complex thereof
338	...Chemical treating agent contains elemental hydrogen or an elemental hydrogen-liberating compound, e.g., hydrogenation, etc.
339	....Treating in the presence of an elemental metal or inorganic metallic compound
340	...Chemical treating agent contains a phosphorus atom
341	....Contains a sulfur atom
342	...Chemical treating agent contains a silicon atom
343	...Chemical treating agent contains a sulfur atom
344	....Inorganic sulfur compound contains sulfur atom bonded to at least two oxygen atoms
345	....With peroxide, ozone, or free oxygen

SYNTHETIC RESINS (Class 520, Subclass 1)
.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS
..At least one solid polymer derived from ethylenic reactants only
...Chemical treating agent contains a sulfur atom
346 ....With sulfur-free organic compound
347 .....Sulfur-free organic compound contains heterocyclic nitrogen
348 ....Sulfur-containing heterocyclic compound
349 .....Heterocyclic ring contains sulfur and nitrogen atoms
350 ....Mercaptan or mercaptide
351 ....Organic compound contains sulfur and nitrogen atoms
352 .....One or more sulfur atoms of the nitrogen-containing compound are double-bonded to carbon
353 ....Sulfur compound contains sulfur atom bonded to at least two oxygen atoms, e.g., sulfonate, etc.
354 ....Elemental sulfur or inorganic sulfur compound
355 ...Chemical treating agent contains hydrogen halide, elemental halogen, organic halogen-containing compound, or compound containing only halogen atoms
356 ....Treating in the presence of elemental halogen
357 .....Treating in the presence of a metal or metal-containing compound
358 .....Treating in the presence of water
359.1 ....Treating in the presence of organic halogen-containing compound
359.2 .....Organic halogen-containing compound contains a hetero ring
359.3 .....Organic halogen-containing compound contains oxygen
359.4 ......Organic halogen-containing compound contains a (C=O)O group or an aromatic group
359.5 .....Organic halogen-containing compound contains only carbon, hydrogen, and halogen
359.6 ......Organic halogen-containing compound contains an aromatic group
360 ...Chemical treating agent contains elemental metal or metal-containing compound
361 ....Two or more diverse elemental metals or compounds thereof; or same metal in two or more distinct compounds; or diverse metals in same compound
362 .....Elemental metal or inorganic compound thereof only
363 ......Aluminum or Group IIB (Zn, Cd, Hg) metal or compound thereof
364 .....Organometallic compound and elemental metal or inorganic compound thereof
365 ......Aluminum metal or compound thereof
366 ....Contains Group IA (Li, Na, K, Rb, Cs, Fr) or Group IIA (Be, Mg, Ca, Sr, Ba, Ra) elemental metal or compound thereof
367 .....Elemental metal or inorganic metal compound
368 ......Metal oxide
369 ......Metal hydroxide
370 ....Contains Group IB (Cu, Ag, Au), IIB (Zn, Cd, Hg), IIIA (Al, Ga, In, Tl), IV (Ti, Zr, Hf, Ge, Sn, Pb), and VIII (Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt) elemental metal or compound thereof
371 .....Elemental metal or inorganic compound thereof
372 ......Metal oxide
373 ....Group IIB metal (Zn, Cd, Hg) oxide
374 ...Chemical treating agent is a nitrogen-containing compound
375 ....Contains nitrogen atom in a heterocyclic ring
376 ....Nitrogen-containing compound has at least one nitrogen-to-nitrogen bond
377 ....Nitrogen-containing compound contains at least one nitrile or isonitrile group; or a nitrogen-to-oxygen bond which is other than as an amine or ammonium salt
378 ....Ammonia, ammonium hydroxide, or salts thereof
379 ....Organic amine
380 .....Amine contains a hydroxyl group
381 .....Three or more amine groups
382 .....Two amine groups
383 ...Chemical treating agent contains elemental oxygen or oxygen-containing compound
384 ....Oxygen compound contains at least one alcohol group
385 ....Oxygen compound contains an ether group
386 ....Oxygen compound is a carboxylic acid, ester, anhydride, or lactone thereof
387 ....Oxygen compound contains a peroxy group (-O-O-)
388 ....Specified oxygen-containing compound is air, elemental oxygen, or ozone
389 ..Solid polymer derived from reactant containing atoms other than C, H, N, Si, P, chalcogen, halogen, or an alkali or alkaline earth metal in salt form
390 ..Solid polymer derived solely from phenolic reactants wherein none of the reactants contains a plurality of methylol groups or derivatives thereof
391 ...Mixed with ethylenically unsaturated reactant or polymer derived therefrom
392 ....Unsaturated aromatic reactant or polymer thereof
393 ...Mixed with silicon-containing reactant or polymer derived therefrom
394 ...Mixed with -O-C(=O)-O-, hal-C(=O)-O-, or hal-C(=O)-hal containing reactant or polymer derived therefrom
395 ...Mixed with -N=C=X-containing reactant or polymer therefrom (X is chalcogen)
396 ...Mixed with 1,2-epoxy containing reactant or polymer therefrom, or wherein polymer contains at least one 1,2-epoxy group

SYNTHETIC RESINS (Class 520, Subclass 1)
.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS
..Solid polymer derived solely from phenolic reactants wherein none of the reactants contains a plurality of methylol groups or derivatives thereof
397 ...Mixed with carboxylic acid or derivative reactant or polymer derived therefrom
398 ..Solid polymer derived from aldehyde, aldehyde derivative, or liquid polymer thereof as sole reactant and wherein none of the reactants contains a plurality of methylol groups or derivatives thereof
399 ...Mixed with -N=C=X-containing reactant or polymer derived therefrom (X is a chalcogen)
400 ...Mixed with carboxylic acid or derivative reactant or polymer derived therefrom
401 ...Mixed with ethylenically unsaturated reactant or polymer derived therefrom
402 ...Solid polymer derived from aldehyde or derivative containing halogen
403 ..Solid polymer is derived from 1,2-epoxy compound containing only one 1,2-epoxy group as sole reactant and wherein none of the reactants contains a plurality of methylol groups or derivatives thereof
404 ...Mixed with ethylenically unsaturated reactant or polymer therefrom
405 ...Mixed with aldehyde or aldehyde derivative reactant or polymer therefrom
406 ....Contains amine-, N-C(=X)-, or N-S(=O)- containing reactant (X is chalcogen)
407 ...Mixed with 1,2-epoxy reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom
408 ...Mixed with carboxylic acid or derivative or polymer derived therefrom
409 ...Solid polymer derived only from 1,2-epoxy reactants containing only C, H, and O
410 ..Solid polymer derived from hetero-O-cyclic compounds as sole reactants wherein at least one reactant contains a hetero-O-ring other than solely as a 1,2-epoxy or anhydride, and wherein none of the reactants contains a plurality of methylol groups or derivatives thereof
411 ...Mixed with carboxylic acid or derivative reactant or polymer therefrom
412 ...Mixed with unsaturated reactant or polymer therefrom
413 ...Mixed with -O-C(=O)- or hal-C(=O)- reactant or polymer derived therefrom
414 ...Mixed with aldehyde or aldehyde derivative or polymer derived therefrom
415 ...Solid polymer derived from carboxylic acid cyclic ester, e.g., lactone, etc.
416 ..Solid polymer derived from hydrocarbon or halogenated hydrocarbon as sole reactant or mixture thereof
417 ..Solid polymer derived from heterocyclic materials as sole reactants wherein each of the heterocyclic materials contains a hetero ring other than solely as a lactam, 1,2-epoxy or carboxylic acid anhydride and wherein none of the reactants contains a plurality of methylol groups or derivatives thereof
418 ..Solid polymer derived from at least one carboxylic acid or derivative
419 ...Solid polymer derived from at least one lactam; from an amino carboxylic acid or derivative; or from a polycarboxylic acid or derivative
420 ....Solid polymer derived from an amino carboxylic acid or derivative; from a polyamine and a polycarboxylic acid or derivative; from at least one lactam; or from a polyamine salt of a polycarboxylic acid
420.5 .....Solid polymer derived from a polycarboxylic acid which is a dimer or trimer of an aliphatic acyclic monocarboxylic acid having at least ten carbon atoms or adducts of unsaturated aliphatic acyclic monocarboxylic acids, having ten carbon atoms with an alpha, beta ethylenically unsaturated carboxylic acid or derivative
421 .....Solid polymer derived from reactant containing ethylenic unsaturation
422 ......Solid polymer derived from imide reactant
423 .....Mixed with reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom
424 .....Mixed with -N=C=X reactant or polymer derived therefrom (X is chalcogen)
425 .....Mixed with polycarboxylic acid or derivative and polyhydroxy reactant or polymer therefrom
426 .....Mixed with ethylenically unsaturated reactant or polymer therefrom
427 .....Mixed with aldehyde or aldehyde derivative reactant or polymer therefrom
428 ......Contains amine-, N-C(=X)-, or N-S(=O)- containing reactant or polymer thereof (X is chalcogen)
429 ......Contains phenolic reactant or polymer thereof
430 .....Mixed with a reactant containing a single 1,2-epoxy group per mole or polymer derived therefrom
431 .....Mixed with silicon containing reactant or polymer derived from

SYNTHETIC RESINS (Class 520, Subclass 1)

.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS

..Solid polymer derived from at least one carboxylic acid or derivative

...Solid polymer derived from at least one lactam; from an amino carboxylic acid or derivative; or from a polycarboxylic acid or derivative

....Solid polymer derived from an amino carboxylic acid or derivative; from a polyamine and a polycarboxylic acid or derivative; from at least one lactam; or from a polyamine salt of a polycarboxylic acid

432 .....Mixed with additional polycarboxylic acid and a polyamine; amino carboxylic acid or derivative; polyamine salt of a polycarboxylic acid; lactam; or polymer derived therefrom

433 .....Mixed with O-C(=O)-O-, hal-C(=O)-, or hal-C(=O)-hal reactant or polymer derived therefrom

434 .....Solid polymer derived from hydroxyl group-containing reactant

435 .....Solid polymer derived from compound containing more than two amine groups

436 .....Solid polymer derived from compound containing more than two carboxylic acid groups or derivatives thereof

437 ....Solid polymer derived from polyhydroxy reactant and polycarboxylic acid or derivative reactant; or derived from di- or higher ester of a polycarboxylic acid as sole reactant

438 .....Mixed with reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom

439 .....Mixed with O-C(=O)-O-, hal-C(=O)-O-, or hal-C(=O)-hal containing reactant or polymer derived therefrom; or wherein solid polymer is derived from a hal-C(=O)-hal, O-C(=O)-O-, or hal-C(=O)-O-, a polycarboxylic acid or derivative and a polyhydroxy reactant

440 .....Mixed with -N=C=X reactant or polymer derived therefrom (X is chalcogen); or wherein solid polymer is derived from a -N=C=X reactant and also a polycarboxylic acid or derivative and a polyhydroxy reactant

441 .....Mixed with aldehyde or aldehyde derivative reactant or polymer derived therefrom

442 ......Contains phenolic reactant or polymer thereof

443 ......Contains an amine-, N-C(=X)-, or N-S(=O)-containing reactant or polymer thereof (X is chalcogen)

444 .....Mixed with polycarboxylic acid or derivative and polyhydroxy reactant or polymer thereof

444.5 ......Solid polymer derived from or system contains a reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or fattly acid derived from tall oil

445 .....Mixed with ethylenically unsaturated reactant or polymer therefrom

446 .....Mixed with silicon-containing reactant or polymer derived therefrom

447 .....Solid polymer derived from polycarboxylic acid or derivative and a polyhydroxy compound derived from reactant containing ethylenic unsaturation

448 .....Solid polymer derived from polycarboxylic acid or derivative and polyhydroxy compound is derived from two or more polycarboxylic acids or derivatives

449 ....Mixed with 1,2-epoxy reactant or polymer derived therefrom

450 ...Solid polymer derived from hydroxy-containing carboxylic acid or derivative reactant

451 ...Solid polymer derived from carboxylic acid or derivative derived from ethylenically unsaturated reactant

452 ..Solid polymer derived from -N=C=X reactant (X is chalcogen)

453 ...Solid polymer derived from -N=C=X reactant and polyhydroxy reactant

454 ....Mixed with carboxylic acid or derivative reactant or polymer derived therefrom; or with heterocyclic reactant containing more than one heterocyclic ring; or polymer therefrom

455 ....Mixed with ethylenically unsaturated reactant or polymer therefrom

456 ....Mixed with aldehyde or aldehyde derivative reactant or polymer therefrom

457 ....Mixed with -N=C=X reactant or polymer therefrom

458 .....Contains polyhydroxy reactant; or additional polymer derived from -N=C=X and polyhydroxy reactant

459 ....Solid polymer derived from -N=C=X reactant and polyhydroxy reactant also derived from polyamine reactant

460 ....Solid polymer derived from -N=C=X reactant and polyhydroxy reactant derived from polyhydroxy reactant containing an ether group

461 ..Solid polymer derived from O-C(=O)-O- or hal-C(=O)-containing reactant

462 ...Solid polymer derived from O-C(=O)-O- or hal-C(=O)-containing reactant and polyhydroxy reactant

463 ....Mixed with reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom

464 ....Mixed with silicon-containing reactant or polymer derived therefrom

465 ....Mixed with aldehyde or aldehyde derivative reactant or reaction product therefrom

SYNTHETIC RESINS (Class 520, Subclass 1)

.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS

..Solid polymer derived from O-C(=O)-O- or hal-C(=O)-containing reactant

...Solid polymer derived from O-C(=O)-O- or hal-C(=O)-containing reactant and polyhydroxy reactant

466 ....Mixed with polycarboxylic acid or derivative and polyhydroxy reactants or polymer thereof; or di- or higher ester of polycarboxylic acid as sole reactant or polymer therefrom

467 ....Mixed with nitrogen-containing reactant or polymer therefrom

468 ....Mixed with ethylenically unsaturated reactant or polymer therefrom

469 ....Solid polymer derived from O-C(=O)-O- or hal-C(=O)- and polyhydroxy reactant derived from at least two polyhydroxy reactants

470 ....Solid polymer derived from O-C(=O)-O- or hal-C(=O)- reactant and polyhydroxy reactant contains an atom other than C, H, O, or halogen bonded to a C(=O) group

471 ..Solid polymer derived from ketone reactant and wherein none of the reactants forming the solid polymer contains an aldehyde group or is an aldehyde-type reactant or polymer derived therefrom

472 ..Solid polymer derived from aldehyde or aldehyde-type reactant and wherein none of the reactants forming the solid polymer contains a phenol-, amine-, -N=C=X, -N-S(=O)- or ketone group or a condensate thereof except when an amine group appears in hexamethylenetetramine or a derivative thereof (X is chalcogen)

473 ...Solid polymer derived from aldehyde or aldehyde-type reactant containing atoms other than C, H, or O and wherein when hexamethylenetetramine or derivative is a reactant, there is additionally present a reactant containing atoms other than C, H, or O

474 ..Solid polymer derived from silicon-containing reactant

475 ...Mixed with aluminum- or heavy metal-containing reactant or polymer therefrom

476 ...Mixed with reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom

477 ...Mixed with silicon-containing reactant or polymer therefrom

478 ....Wherein one of said silicon materials contains Si-H bond

479 ...Mixed with ethylenically unsaturated reactant or polymer derived therefrom

480 ..Solid polymer or specified intermediate condensation product derived from at least one phenolic reactant and at least one aldehyde or aldehyde-type reactant or polymer therefrom

481 ...Mixed with reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom

482 ....Phenolic-aldehyde or phenolic-aldehyde-type reaction product modified with 1,2-monoepoxide prior to mixing with reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom

483 .....Contains sulfur-containing reactant or polymer therefrom

484 .....Contains nitrogen reactant or polymer therefrom

485 ....With specified material

486 .....Specified material contains nitrogen

487 ....With silicon-containing reactant or polymer derived therefrom

488 ....With carboxylic acid or derivative reactant or polymer derived therefrom

489 ....With additional aldehyde or aldehyde-type reactant or polymer therefrom which is distinct from aldehyde or aldehyde-type reactant used in forming solid polymer or SICP; or with nitrogen-containing reactant

490 ....Wherein phenolic-aldehyde or phenolic-aldehyde-type solid polymer or SICP contains nitrogen or ethylenic unsaturation

491 ...Mixed with additional aldehyde or aldehyde-type reactants which are part of a SPFI system or polymer thereof

492 ....Additional material is a hydrocarbon-aldehyde- or hydrocarbon-aldehyde-type polymer, condensate, or reactants therefrom

493 ....Additional material is ketone-aldehyde- or ketone-aldehyde-type polymer, condensate, or reactants thereof

494 .....Contains nitrogen-containing reactant or polymer therefrom

495 ....Additional material is amine-, N-C(=X)-, or N-S(=O)-containing reactant- aldehyde or -aldehyde derivative polymer, condensate, or reactants therefrom (X is chalcogen)

496 .....Contains 1,2-epoxy-containing reactant or polymer derived therefrom

497 .....Heterocyclic nitrogen reactant or polymer therefrom, e.g., melamine, etc.

498 ......-N-C(=X)-N-containing reactant or polymer, e.g., urea, etc. (X is chalcogen)

499 .....Contains sulfur reactant or polymer therefrom

500 ....Wherein the phenolic-aldehyde- or phenolic-aldehyde-type solid polymer or SICP is derived from a reactant or polymer containing an atom other than C, H, or O

	SYNTHETIC RESINS (Class 520, Subclass 1)
	.MIXING OF TWO OR MORE SOLID POLYMERS; MIXING OF SOLID POLYMER OR SICP WITH SICP OR SPFI; MIXING OF SICP WITH AN ETHYLENIC AGENT; MIXING OF SOLID POLYMER WITH A CHEMICAL TREATING OR ETHYLENIC AGENT; OR PROCESSES OF FORMING OR REACTING; OR THE RESULTANT PRODUCT OF ANY OF THE ABOVE OPERATIONS
	..Solid polymer or specified intermediate condensation product derived from at least one phenolic reactant and at least one aldehyde or aldehyde-type reactant or polymer therefrom
	...Mixed with additional aldehyde or aldehyde-type reactants which are part of a SPFI system or polymer thereof
501	....Additional phenol-aldehyde- or -aldehyde-type polymer, condensation product or reactants therefrom
501.5	...Mixed with reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil; or the reaction product of any of the above with a polycarboxylic acid or ester forming derivative and a polyhydroxy compound
502	...Mixed with unsaturated reactant or polymer derived therefrom
503	...Mixed with aldehyde or aldehyde-type chemical treating agent
504	...Mixed with nitrogen-containing chemical treating agent
505	...Mixed with sulfur-containing chemical treating agent
506	...Mixed with a boron- or polyvalent metal-containing chemical treating agent
507	...Mixed with an 1,2-epoxy-containing chemical treating agent
508	...Mixed with carboxylic acid- or derivative-containing chemical treating agent
509	..Solid polymer or SICP derived from at least one amine-, N-C(=X)- or N-S(=O)- containing reactant and at least one aldehyde or aldehyde-type reactant (X is chalcogen)
510	...Mixed with reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom
511	....With specified material
512	....Amine-, N-C(=X)- or N-S(=O)-containing reactant (X is chalcogen) aldehyde or a -aldehyde-type condensation product or polymer thereof contains atoms other than C, H, O, N, or S
513	....With sulfur-containing reactant or polymer therefrom
514	....With carboxylic acid or derivative reactant or polymer derived therefrom
515	...Mixed with additional aldehyde or aldehyde-type solid polymer; or SICP; or aldehyde or aldehyde-type reactant
516	....Contains a phenolic reactant or polymer thereof
517	....Amine-, N-C(=X)- or N-S(=O)-containing reactant-aldehyde or -aldehyde-type polymer or condensation product contains atoms other than C, H, O, N, or S (X is chalcogen)
517.5	...Mixed with a reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil; or the reaction product of any of the above with a polycarboxylic acid or ester forming derivative and a polyhydroxy compound
518	...Mixed with unsaturated reactant or polymer derived therefrom
519	...Mixed with carboxylic acid or derivative reactant or polymer therefrom
520	....Contains -N=C=X reactant or polymer therefrom (X is chalcogen)
521	..Solid polymer or SICP derived from at least one ketone reactant and at least one aldehyde or aldehyde derivative reactant
522	...Mixed with reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom
523	..Solid polymer contains more than one 1,2-epoxy group or is derived from reactant containing at least one 1,2-epoxy group
524	...Mixed with a reactant containing more than one 1,2-epoxy group per mole or polymer derived therefrom
525	....Wherein at least one of said 1,2-epoxy reactants or polymer derived therefrom contains atoms other than C, H, or O
526	.....Contains nitrogen atom
527	.....Contains halogen atom
528	...Mixed with -N=C=X-containing reactant or polymer therefrom
529	...Mixed with unsaturated reactant or polymer derived therefrom
530	....Wherein unsaturated reactant is a carboxylic acid or derivative or polymer derived therefrom
531	.....Wherein unsaturated reactant contains only one free carboxyl group
532	.....Contains polyol reactant or polymer derived therefrom
533	...Mixed with carboxylic acid or derivative reactant or polymer therefrom
534	..Solid polymer derived from phenolic reactant
535	..Solid polymer derived from sulfur-containing reactant
536	...Solid polymer derived from sulfur dioxide and ethylenically unsaturated reactant
537	...Solid polymer derived from alkali metal sulfide and halogenated aromatic reactant, e.g., polyarylene sulfide, etc.
538	..Solid polymer derived from phosphorus-containing reactant
539	..Solid polymer derived from at least one unsaturated reactant and at least one saturated reactant
540	..Solid polymer derived from nitrogen-containing reactant

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CROSS-REFERENCE ART COLLECTIONS
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901 RADIAL BLOCK
902 CORE-SHELL
903 INTERPENETRATING NETWORK
904 ACTIVATION OF PREFORMED POLYMER IN ABSENCE OR MONOMER, FOR SUBSEQUENT POLYMERIZATION THEREON (E.G., TRAPPED RADICALS)
905 POLYPHENYLENE OXIDE
906 POLYSULFONE
907 POLYCARBODIIMIDE
908 POLYMER CONTAINING A HYDANTOIN GROUP
909 POLYMER HAVING A HETEROCYCLIC RING WITH AT LEAST THREE DIFFERENT ELEMENTS WITHIN THE RING
910 POLYMER FROM ETHYLENIC MONOMERS ONLY, HAVING TERMINAL UNSATURATION
911 POLYMER FROM ETHYLENIC MONOMERS ONLY, HAVING TERMINAL FUNCTIONAL GROUP OTHER THAN UNSATURATION
912 POLYMER FROM NONETHYLENIC MONOMERS ONLY, HAVING PENDANT UNSATURATED GROUP
913 POLYMER FROM MONOMERS ONLY HAVING PENDANT GLYCIDYL GROUP
914 POLYMER FROM CONJUGATED DIENE HYDROCARBON OR HALOHYDROCARBONS HAVING MORE THAN 50 PER CENT 1,2-MICROSTRUCTURE
915 POLYMER FROM MONOETHYLENIC CYCLIC HYDROCARBON
916 POLYMER FROM ETHYLENIC MONOMERS ONLY, HAVING CATIONIC GROUP
917 POLYMER FROM AT LEAST ONE NONETHYLENIC MONOMER HAVING CATIONIC GROUP
918 POLYMER PREPARED BY CATIONIC POLYMERIZATION
919 IONOMER RESINS (CARBOXYLATE SALT-CONTAINING COPOLYMERS)
920 POLYURETHANE HAVING TERMINAL ETHYLENIC UNSATURATION
921 POLYESTER HAVING TERMINAL ETHYLENIC UNSATURATION OTHER THAN POLYESTERURETHANES
922 POLYEPOXIDE POLYMER HAVING BEEN REACTED TO YIELD TERMINAL ETHYLENIC UNSATURATION
923 AMINOPLAST HAVING TERMINAL ETHYLENIC UNSATURATION
924 PHENOPLAST HAVING TERMINAL ETHYLENIC UNSATURATION
925 POLYMER FROM AT LEAST ONE NONETHYLENIC MONOMER HAVING TERMINAL ETHYLENIC UNSATURATION OTHER THAN POLYURETHANES, POLYESTERS, POLYEPOXIDES, AMINOPLASTS, AND PHENOPLASTS
926 POLYAMIDE CONTAINING A PLURALITY OF OXYALKYLENE GROUPS
927 POLYAMIDE ADMIXED WITH OXYALKYLENE-CONTAINING POLYMER
928 POLYIMIDE OR POLYAMIDE-ACID FORMED BY CONDENSATION OF A POLYAMINE WITH A POLYCARBOXYLIC ACID HAVING AT LEAST THREE CARBOXYL GROUPS OR DERIVATIVES THEREOF
929 POLYIMIDE FORMED BY ADDITION OF POLYAMINE TO AN UNSATURATED BIS-IMIDE
930 REACTION PRODUCT OF A POLYHYDRIC PHENOL AND EPICHLOROHYDRIN OR DIEPOXIDE, HAVING A MOLECULAR WEIGHT OF OVER 5,000 (E.G., PHENOXY RESINS)
931 BLEND OF STATED INCOMPATIBILITY
932 BLEND OF MATCHED OPTICAL PROPERTIES
933 BLEND OF LIMITED GAS PERMEABILITY
934 POWDERED COATING COMPOSITION
935 MATRIX ADMIXED WITH SYNTHETIC FIBER
936 ENCAPSULATED CHEMICAL AGENT
937 UTILITY AS BODY CONTACT (IMPLANT, CONTACT LENS, I.U.D., ETC.)
938 POLYMER DEGRADATION
939 MULTIPACKAGE SYSTEM
940 HYDROGENATION OF A POLYMER
941 POLYMER MIXTURE CONTAINING BLOCK COPOLYMER IS MIXED OR REACTED WITH CHEMICAL TREATING AGENT
942 POLYMER DERIVED FROM NITRILE, CONJUGATED DIENE AND AROMATIC CO-MONOMERS

CLASS 526 PART OF THE CLASS 520 SERIES -- SYNTHETIC RESINS OR NATURAL RUBBERS

SYNTHETIC RESINS (Class 520, Subclass 1)
59 .EFFECTING A CHANGE IN A POLYMERIZATION PROCESS IN RESPONSE TO A MEASUREMENT OR TEST
60 ..Change responsive to composition property other than density
61 ..Change responsive to pressure or temperature
62 .POLYMERIZING IN REACTOR OF SPECIFIED MATERIAL, OR IN REACTOR IN WHICH SURFACE CONTACTING POLYMERIZING MATERIAL HAS BEEN TREATED
63 .POLYMERIZING IN PRESENCE OF INERT SOLID MASSES SO AS TO HEAT, COOL, OR GRIND POLYMERIZING MASS
64 .POLYMERIZING IN TUBULAR OR LOOP REACTOR
65 .POLYMERIZING IN TWO OR MORE PHYSICALLY DISTINCT ZONES
66 ..Adding material to polymerization zone in an incremental or sequential manner
67 .REMOVING AND RECYCLING REMOVED MATERIAL FROM AN ONGOING POLYMERIZATION ZONE TO A POLYMERIZATION ZONE
68 ..Recycling monomer
69 ..Recycling catalyst
70 ..Recycling diluent
71 .REMOVING ONLY NONPOLYMERIZED OR NONPOLYMERIZABLE MATERIAL DURING POLYMERIZATION PROCESS
72 .POLYMERS FROM ONLY ETHYLENIC MONOMERS OR PROCESSES OF POLYMERIZING, POLYMERIZABLE COMPOSITIONS CONTAINING ONLY ETHYLENIC MONOMERS AS REACTANTS OR PROCESSES OF PREPARING
73 ..Polymerization involving two or more specified temperature or pressure conditions
74 ..Utilizing material during polymerization to prevent or remove reactor buildup, e.g., fouling, clogging, etc.
75 ..Including step of synthesis of monomer or pre-polymer
76 ...Polymerizable material derived from petroleum fraction
77 ..Including step of purifying monomer
78 ..Adding material to an on-going polymerization reaction, said addition being other than the continuous addition of the initial charge
79 ...Adding in an incremental or sequential manner
80 ....Polymerizing in the presence of water
81 .....Added material is other than monomer per se, or composition containing monomer
82 ...Adding polymerization inhibitor or terminator, e.g., short-stopper, etc.
83 ....Added material contains nitrogen compound
84 ....Added material contains oxygen compound
85 ....Added material contains sulfur atom
86 ...Adding catalyst or catalyst component
87 ...Adding monomer
88 ..Polymerization involving specified mixing, stirring, agitating, or movement of material
89 ..Polymerizing in the presence of a specified material other than monomer
90 ...Material contains transition metal or compound thereof
91 ....In presence of water
92 .....Carbon-metal bond
93 .....Group VIII transition metal (Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt)
94 ......With organo-sulfur compound or organic-transition metal compound containing sulfur atom
95 ....Material contains transition metal oxide (other than peroxide)
96 .....Contains elemental transition metal or a non-oxide compound of a transition metal
97 ......Contains non-transition elemental metal, hydride thereof, or carbon to non-transition metal atom bond
98 .....Contains non-metallic halogen-containing material
99 .....Contains compound containing aluminum to halogen bond and wherein the same aluminum atom is not bonded to a hydrogen or carbon atom
100 .....Contains non-metal organic N, O, S or P containing compound
101 .....Two or more transition metal oxides, at least two of said oxides being other than oxides of Ti, Zr, Hf, or Th
102 .....Contains non-transition heavy metal or compound thereof
103 .....Group VIII metal oxide (Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt)
104 .....Group VIB metal oxide (Cr, Mo, W)
105 ......Contains non-transition elemental metal, hydride thereof, or nontransition metal to carbon atom bond
106 ......Metal oxide is of chromium
107 .....Group IVB metal oxide (Ti, Zr, Hf)
108 ....Contains one or more elemental transition metal atoms
109 .....With peroxy compound (-O-O-)
110 .....With non-transition elemental metal, hydride thereof, or carbon to non-transition metal atom bond
111 ......With non-metal P, S, O, or N containing material
112 .....With transition metal compound
113 ....Two or more diverse transition metal atoms in distinct compounds or in the same compound
114 .....Contains non-transition elemental metal, hydride thereof, or carbon to non-transition metal atom bond
115 ......Contains Group VIII metal atom (Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt)
116 ......At least one Group IVB metal atom (Ti, Zr, Hf) and at least one Group VB meta 1 (V, Nb, Ta)
117 .....Contains Group VIII metal atom (Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt)
118 ....Material contains two or more different compounds of same transition metal
119 .....Contains non-transition elemental metal, hydride thereof, or carbon to non-transition metal atom bond
120 ....Material contains compound of non-transition heavy metal wherein non-transition heavy metal is not bonded to hydrogen or carbon
121 .....Contains non-transition elemental metal, hydride thereof, or carbon to non-transition metal atom bond

SYNTHETIC RESINS (Class 520, Subclass 1)
.POLYMERS FROM ONLY ETHYLENIC MONOMERS OR PROCESSES OF POLYMERIZING, POLYMERIZABLE COMPOSITIONS CONTAINING ONLY ETHYLENIC MONOMERS AS REACTANTS OR PROCESSES OF PREPARING
..Polymerizing in the presence of a specified material other than monomer
...Material contains transition metal or compound thereof
....Material contains compound of non-transition heavy metal wherein non-transition heavy metal is not bonded to hydrogen or carbon
.....Contains non-transition elemental metal, hydride thereof, or carbon to non-transition metal atom bond
122 ......Non-transition heavy metal compound is halogen-containing
123 ....Material contains compound of Group IA (Li, Na, K, Rb, Cs, Fr) or Group IIA (Be, Mg, Ca, Sr, Ba, Ra) metal wherein IA or IIA metal is not bonded to hydrogen or carbon
124 .....Contains non-transition elemental metal, hydride thereof, or carbon to non-transition metal atom bond
125 ......Group IA or Group IIA compound is halogen-containing
126 ....Material contains silicon atom
127 .....Contains non-transition free metal, hydride thereof, or carbon to non-transition metal atom bond
128 ......Silicon present in organic non-metal compound
129 ......Silicon present in inorganic oxygen-containing compound
130 .....Silicon present in inorganic oxygen-containing compound
131 ....Material contains boron atom
132 .....Contains non-transition elemental metal, hydride thereof, or carbon to non-transition metal atom bond
133 ......Boron compound is halogen-containing
134 .....Boron compound contains boron bonded to hydrogen or to carbon atom
135 ....With non-metal N, P, O, S, Se, Te, or halogen material other than nitrogen gas
136 .....Contains non-transition elemental metal, hydride thereof, or carbon to non-transition metal atom bond
137 ......Non-metal material is inorganic halogen-containing material
138 ......Non-metal material is inorganic oxygen-containing material
139 ......Non-metal material is organic phosphorus-containing compound
140 ......Non-metal material is organic sulfur-containing compound
141 ......Non-metal material is organic nitrogen-containing compound
142 ......Non-metal material is organic oxygen-containing compound
143 ....Non-metal organic oxygen compound is halogen-containing
144 ......Non-metal material is organic halogen-containing compound
145 .....Non-metal phosphorus-containing material
146 .....Non-metal sulfur-containing material
147 .....Non-metal nitrogen-containing material
148 ....Contains two or more diverse non-transition elemental metals, different non-transition hydride compounds, different carbon to non-transition metal compounds, or mixture thereof
149 .....At least one atom of As, Sb, or Bi, in elemental form or bonded to hydrogen or carbon atom
150 .....At least one atom of Ge, Sn, or Pb in elemental form or bonded to hydrogen or carbon atom
151 .....At least one atom of Group IIIA metal (Al, Ga, In, Tl) in elemental form or bonded to hydrogen or carbon atom
152 ......At least one atom of Group IA metal (Li, Na, K, Rb, Cs, Fr) in elemental form or bonded to hydrogen or carbon atom
153 ......Two or more Group IIIA metals in elemental form or bonded to hydrogen or carbon atom
154 ....Material contains aluminum compound wherein aluminum atom is not bonded to hydrogen or carbon atom
155 .....Contains non-transition elemental metal, hydride thereof or carbon to non-transition metal atom bond
156 ......Inorganic oxygen containing aluminum compound
157 ......Aluminum trihalide
158 ....With Group IVB transition metal compound (Ti, Zr, Hf)
159 ....Material contains non-transition elemental metal, hydride thereof, or carbon to non-transition metal atom bond
160 .....Transition metal bonded to carbon atom
161 .....Transition metal compound contains P, S, or N atom
162 .....Non-transition metal is bonded to carbon atom in compound which contains ethylenic unsaturation
163 .....Non-transition metal hydride or carbon to non-transition metal metal atom bond compound contains P, S, or N atom
164 .....Transition metal is IB, IIIB, VIIB or atomic number 58-71, 88, 90 or higher
165 .....Non-transition metal to carbon atom bond compound contains at least two atoms of same or different non-transition metal
166 .....Group IVA (Ge, Sn, Pb) or Group VA (As, Sb, Bi) metal is bonded to hydrogen or carbon atom
167 .....Elemental non-transition metal atom
168 .....Elemental carbon
169 .....Transition metal is Group VB, VIB or VIII metal
169.1 ......Transition metal is Group VIII
169.2 ......Transition metal is vanadium
169.3 .....At least one monomer is nonhydrocarbon material
170 ....Transition metal bonded to carbon atom
171 .....Transition metal is Group VIII (Fe, Co, Ni, Ru, Ph, Pd, Os, Ir, Pt)
172 ....Transition metal compound has at least one atom of P, S, N or O therein

SYNTHETIC RESINS (Class 520, Subclass 1)
.POLYMERS FROM ONLY ETHYLENIC MONOMERS OR PROCESSES OF POLYMERIZING, POLYMERIZABLE COMPOSITIONS CONTAINING ONLY ETHYLENIC MONOMERS AS REACTANTS OR PROCESSES OF PREPARING
..Polymerizing in the presence of a specified material other than monomer
173 ...Material contains elemental alkali metal, hydride thereof, or alkali metal to carbon atom bond (Li, Na, K, Rb, Cs, Fr)
174 ....Contains at least two diverse alkali metal atoms, at least one of which is in the form of a free alkali metal, or in the form of a hydride, or has an alkali metal to carbon atom bond
175 ....Contains two or more separate chemical entities containing atoms of the same alkali metal, with at least one atom in elemental form, or in the form of a hydride, or has an alkali metal to carbon atom bond
176 ....Contains heavy metal atom
177 ....Contains aluminum atom
178 ....Contains boron or silicon atom
179 ....Contains phosphorus atom
180 ....Contains compound of nitrogen
181 ....Contains oxygen atom
182 ....Contains halogen atom
183 ...Material contains metal atom bonded to a carbon atom
184 ....With free oxygen or peroxy compound (-O-O-)
185 ....Metal bonded to carbon is aluminum
186 .....Contains aluminum not bonded to carbon
187 .....Contains Group IA or IIA atom
188 .....Contains heavy metal atom
189 .....Contains P, N, S, or O atom
190 ....Metal bonded to carbon atom is a heavy metal atom
191 ...Material contains elemental metal
192 ...Material contains a heavy metal atom containing organic compound
193 ...Material contains organic compound having a phosphorus atom
194 ...Material contains Si, Te, Se, or Group VIIIA atom, e.g., He, Ne, etc.
195 ...Material contains boron compound other than boron trihalide or non-metal organic complex of boron trihalide
196 ....Boron bonded to hydrogen or carbon atom compound
197 .....With free oxygen or peroxy compound
198 .....Contains P, S, or N atom other than as elemental nitrogen
199 ...Material contains polypeptide, e.g., protein, gelatin, etc.
200 ...Material contains carbohydrate, e.g., starch, sugar, etc.
201 ...Material contains previously formed normally solid polymer which is distinct from polymer to be formed and is a polymer formed from at least one ethylenic monomer
202 ....Normally solid polymer contains free alcohol group or alcoholate thereof
203 ....Normally solid polymer is formed from ethylenically unsaturated dicarboxylic acid, ester, salt, or anhydride thereof
204 ...Material contains heterocyclic compound
205 ....Sulfur and nitrogen together in a single ring
206 ...Material contains halogenated hydrocarbon wherein at least one halogen atom is other than chlorine, and mixtures of water and a halogenated hydrocarbon
207 ...Material contains water and a hydrocarbon
208 ...Material contains aldehyde or ketone or polymeric reaction product thereof, e.g., urea-formaldehyde, etc.
209 ...Material contains ether
210 ...Material contains alcohol or alcoholate
211 ....Alcohol or alcoholate has at least one atom of nitrogen or sulfur chemically combined therewith
212 ....Alcohol contains a single hydroxy group or is alcoholate thereof
213 ...Material contains carboxylic acid, salt, ester, or anhydride thereof
214 ....Derived from carboxylic acid containing at least one atom of halogen or sulfur
215 ....Derived from carboxylic acid containing at least one atom of nitrogen
216 ....Derived from aliphatic acid
217 ...Material contains organic nitrogen compound
218.1 ....Organic compound contains N=N or N-N group
219 .....Organic N-N or N=N containing compound also contains at least one S or O chemically bound therein
219.1 .....Organic N=N or N-N group containing compound contains carbocyclic group or element other than C,H, or N
219.2 .....N=N or N-N group-containing compound is a catalyst admixed with at least one other catalyst, co-catalyst, or accelerator, e.g., redox catalyst, etc.
219.3 .....Contains specified ingredient other than the N=N or N-N group containing compound, or water, or defined hydrocarbon or defined halogenated hydrocarbon
219.4 ......Ingredient contains halogenated hydrocarbon
219.5 ......Ingredient contains water, e.g., an emulsion, dispersion, etc.
219.6 .....Azobisisobutyronitrile (AIBN)
220 ....Organic nitrogen compound contains at least one S or O atom chemically bound therein
221 ...Material contains inorganic heavy metal compound
222 ...Material contains organic sulfur compound
223 ....Organic sulfur compound contains -S-S- or -O-O-group
224 ....Mercaptan
225 ....Organic compound contains hexavalent S atom, e.g., organosulfate, sulfonate, etc.

SYNTHETIC RESINS (Class 520, Subclass 1)

.POLYMERS FROM ONLY ETHYLENIC MONOMERS OR PROCESSES OF POLYMERIZING, POLYMERIZABLE COMPOSITIONS CONTAINING ONLY ETHYLENIC MONOMERS AS REACTANTS OR PROCESSES OF PREPARING

..Polymerizing in the presence of a specified material other than monomer

226 ...Material contains aluminum compound other than aluminum trihalide or nonmetallic organic complex of aluminum trihalide

227 ...Material contains peroxy group compound (-O-O-)

228 ....Two or more peroxide compounds

229 ....Inorganic peroxide, e.g., persulfate, hydrogen peroxide, etc.

229.5 .....Nitrogen- or halogen-containing inorganic -O-O- compound free of sulfur, or wherein an -O-O- compound is in admixture with a compound devoid of sulfur and containing a N, halogen or P atom

230 ....Hydroperoxide

230.5 ....Peroxy carbonate

231 ....Peroxide contains halogen atom chemically combined therein

232 ....Peroxide contains an aryl group

232.1 .....Benzoyl peroxide

232.3 ....Two or more peroxy groups in same compound

232.5 ....Cycloaliphatic or ethylenically unsaturated peroxy-containing compound

233 ...Material contains elemental phosphorus or inorganic phosphorus compound

234 ...Material contains sulfur or inorganic sulfur compound

235 ...Material contains free oxygen, air, or ozone

236 ...Material contains nitrogen compound

237 ...Material contains metal halide, boron halide or organic complexes thereof, hydrogen halide, elemental halogen, or compound containing only halogen atoms

238 ....At least one monomer is nonhydrocarbon material

238.1 ..From protein or biologically active polypeptide containing monomer

238.2 ..From carbohydrate, tannin, or derivative containing monomer

238.21 ...Cellulose or derivative containing monomer

238.22 ...Starch or derivative containing monomer, e.g., starch-acrylamide, etc.

238.23 ...Mono- or di-saccharide containing monomer, e.g., allyl sucrose, etc.

238.3 ..From natural resin or derivative containing monomer

239 ..From boron containing monomer

240 ..From metal containing monomer

241 ...Transition metal containing other than Zn, Cd, or Hg

242 ..From fluorine containing monomer

243 ...Fluorine-containing monomer contains a sulfur atom

244 ...Fluorine-containing monomer is a ketone or aldehyde

245 ...Fluorine containing monomer is a mono-carboxylic acid ester

246 ....Alcohol derived portion of ester contains ether group

247 ...Fluorine containing monomer is an ether

248 ...Fluorine containing monomer contains nitrogen atom

249 ...Fluorine containing monomer contains at least one diverse halogen atom

250 ...Fluorine containing monomer contains F, C and H only or F and C only

251 ....Aromatic

252 ....Fluorine compound contains two or more ethylenic groups

253 ....Five or more fluorine atoms

254 .....Contains only carbon and fluorine atoms

255 ....Two or more fluorine atoms, e.g., vinylidene fluoride, etc.

256 ..From monomer containing sulfur atom as part of a heterocyclic ring

257 ...Sulfur-containing ring contains additional hetero atom, i.e., N, O, Se, Te

258 ..From monomer containing nitrogen atom as part of a heterocyclic ring

259 ...Nitrogen atom is part of a bridged or fused ring system

260 ...5- or 6-membered nitrogen ring compound having at least one oxygen in the ring

261 ...Three or more nitrogen atoms in a single ring

262 ...Imide monomer

263 ...Nitrogen of ring is bonded directly or indirectly to extracyclic ethylenic moiety

264 ....Lactam monomer

265 ...6-membered ring contains a single nitrogen atom

266 ..From monomer containing oxygen as part of a heterocyclic ring

267 ...Polymer contains coumarone and indene

268 ...From cyclic ether which is bridged or fused to a ring system

269 ...Hetero-oxygen ring compound contains a carbonate group, i.e., -O-C(=O)-O- as ring atoms

270 ...5-membered heterocyclic ring compound contains at least one oxygen atom

271 ....Acid anhydride

272 .....Interpolymerized with hydrocarbon monomer

273 ...3-membered heterocyclic ring contains at least one oxygen atom

274 ..From monomer containing a phosphorus atom

275 ...Phosphorus is part of a ring

276 ...Phosphorus is bonded to a nitrogen atom

277 ...Phosphorus atom is pentavalent

278 ....Pentavalent phosphorus is bonded to at least one atom of carbon

279 ..From monomer containing a silicon atom

280 ..From fused or bridged ring containing monomer

281 ...Bridged monomer

282 ....Contains an exterior ethylenic substituent bonded to a single carbon atom of the bridged ring system

283 ....Compound containing dicyclopentadiene moiety

284 ...Contains an exterior ethylenic substituent bonded directly or indirectly to a single carbon atom of the fused ring system

285 ..From monomer containing an acetylenic group

286 ..From S-containing monomer

SYNTHETIC RESINS (Class 520, Subclass 1)

.POLYMERS FROM ONLY ETHYLENIC MONOMERS OR PROCESSES OF POLYMERIZING, POLYMERIZABLE COMPOSITIONS CONTAINING ONLY ETHYLENIC MONOMERS AS REACTANTS OR PROCESSES OF PREPARING

..From S-containing monomer

287 ...From monomer containing three or more oxygen atoms bonded to a single sulfur atom, e.g., sulfonate, etc.

288 ...From sulfur monomer containing nitrogen atom

289 ...From sulfide-containing monomer

290 ..Monomer from unsaturated petroleum hydrocarbon fraction; from unsaturated coal or bituminous material, extract, or derivative thereof; or from unsaturated fatty still residue

291 ..From halogen containing monomer having at least three carbon atoms

292.1 ...Halogen monomer is carboxylic acid ester

292.2 ....Contains nitrogen

292.3 ....Contains oxygen other than as part of a carboxylic acid ester group

292.4 ....Contains two or more carboxylic acid ester groups

292.5 ....Contains carbocyclic ring, e.g., aryl, etc.

292.6 ....Interpolymerized with a monomer containing atom other than carbon, hydrogen, or halogen

292.7 ....Interpolymerized

292.8 ...Halogen monomer is nitrile

292.9 ...Halogen monomer contains an ether group

292.95 ...Halogen monomer contains a carboxylic acid, salt, or carboxylic acid amide

293 ...Aromatic

294 ...Plural halogen atom

295 ...Plural ethylenic groups

296 ..From bromine or iodine containing monomer, dichloroethylene, trichloroethylene or tetrachloroethylene

297 ..From nitrile group containing monomer other than acrylonitrile or methacrylonitrile

298 ...Contains non-nitrile nitrogen atom or contains an oxygen atom

299 ...Aromatic

300 ...Plural nitrile group-containing

301 ..From monomer containing a >N-C(=O)-O- group, e.g., carbamic acid, etc.

302 ..From monomer containing a >N-C(=O)-N< or N-C(=O)-N< group, e.g., urea, etc.

303.1 ..From carboxylic acid amide-containing monomer

304 ...Contains oxygen atom other than in amide form bonded to a carbon atom

305 ...Cycloaliphatic or aromatic

306 ...Plural amide group containing

307 ...Non-amide nitrogen containing

307.1 ...N- substituted unsaturated hydrocarbon group

307.2 ...With monomer containing carboxylic acid amide group

307.3 ...With monomer containing nitrogen other than (meth)-acrylonitrile

307.4 ...With monomer containing oxygen

307.5 ....Oxygen atom is part of ether or hydroxyl group

307.6 ....Oxygen atom is part of carboxylic acid group

307.7 ....Oxygen atom is part of ester group derived from unsaturated carboxylic acid

307.8 ...With hydrocarbon monomer

308 ..From cycloaliphatic monomer

309 ...Contains atoms other than carbon and hydrogen

310 ..From nitrogen containing monomer other than acrylonitrile or methacrylonitrile

311 ...Nitrogen bonded to oxygen atom (including nitrogen containing salts)

312 ...Contains oxygen atom bonded to a carbon atom

313 ..From phenol, phenol ether, or inorganic phenolate monomer

314 ..From monomer containing a carbonate group, i.e., -O-C(=O)-O-

315 ..From aldehyde monomer

316 ..From ketone or ketene monomer

317.1 ..From carboxylic acid monomer

318 ...Carboxylic acid contains ester group

318.1 ...Carboxylic acid contains aryl group, or two or more ethylenic groups

318.2 ...Carboxylic acid contains two or more carboxyl groups

318.25 ....With hydrocarbon, vinyl chloride or vinylidene chloride monomer

318.3 ...Carboxylic acid other than acrylic or methacrylic acid

318.4 ...With ester monomer

318.41 ....Monomer contains chalcogen other than in C(=O)-O- chalcogen in any monomer)

318.42 .....Hydroxyl group

318.43 ....Monomer contains two or more ester groups

318.44 ....Two or more ester monomers

318.45 ....With hydrocarbon monomer

318.5 ...With chalcogen containing monomer, e.g., additional carboxyl monomer, etc.

318.6 ...With hydrocarbon monomer

319 ..From carboxylic acid ester monomer

320 ...Ether or hydroxy containing

321 ...Monomer containing at least two carboxylic acid ester groups

322 ....Derived from an ethylenically unsaturated alcohol

323 .....Derived from an ethylenically unsaturated acid containing plural carboxylic acid groups

323.1 ....Diester derived from an ethylenically unsaturated monocarboxylic acid and polyol

323.2 .....With additional monomer

324 ....Interpolymerized with hydrocarbon monomer

325 ....Interpolymerized with monomer of diverse carboxylic ester

326 ...Aromatic

327 ...Derived from an ethylenically unsaturated carboxylic acid and an ethylenically unsaturated alcohol

328 ...Derived from an ethylenically unsaturated carboxylic acid

328.5 ....With additional monomer

329 .....Interpolymerized with hydrocarbon monomer

329.1 ......Hydrocarbon monomer containing at least two ethylenic groups, e.g., butadiene, etc.

329.2 ......Aromatic, e.g., styrene, etc.

329.3 .....Additional monomer is acrylonitrile or methacrylonitrile

	SYNTHETIC RESINS (Class 520, Subclass 1)
	.POLYMERS FROM ONLY ETHYLENIC MONOMERS OR PROCESSES OF POLYMERIZING, POLYMERIZABLE COMPOSITIONS CONTAINING ONLY ETHYLENIC MONOMERS AS REACTANTS OR PROCESSES OF PREPARING
	..From carboxylic acid ester monomer
	...Derived from an ethylenically unsaturated carboxylic acid
	....With additional monomer
329.4	.....Additional monomer is a halogen-containing monomer
329.5	.....Additional monomer is an ester derived from saturated carboxylic acid
329.6	.....Additional monomer contains an ether group
329.7	....Polymer derived from methyl acrylate or methyl methacrylate
330	...Interpolymer of an ester derived from ethylenically unsaturated alcohol, e.g., interpolymer of vinyl acetate, etc.
331	....Interpolymerized with hydrocarbon monomer
332	..From monomer containing an ether group
333	...Plural ether groups
334	...Aromatic or plural ethylenic groups
335	..From hydrocarbon monomer containing at least two ethylenic groups, e.g., butadiene, etc.
336	...Ethylenic groups are non-conjugated, e.g., divinylbenzene, etc.
337	...Interpolymerized with at least one diverse hydrocarbon monomer containing at least two ethylenic groups
338	...Interpolymerized with non-hydrocarbon monomer
339	...Interpolymerized with aliphatic hydrocarbon
340	...Interpolymerized with aromatic hydrocarbon
340.1	...Polymerized in the presence of a water medium
340.2	...From hydrocarbon having only five carbon atoms
340.3	...From hydrocarbon having at least six carbon atoms
340.4	...Butadiene homopolymer contains at least 75% cis-1,4-configuration
341	..From acrylonitrile or methacrylonitrile
342	...Interpolymerized
343	..From vinylidene chloride
344	..From vinyl chloride
344.1	...Bulk or mass polymerization of vinyl chloride only
344.2	...Polymerization of vinyl chloride only in an aqueous medium
344.3	...Polyvinyl chloride characterized by physical shape, e.g., fiber, sheet, etc.
345	...Interpolymerized
346	..From aromatic hydrocarbon
347	...Interpolymerized
347.1	...Monomer other than styrene
347.2	...Crystalline polystyrene
348	..From hydrocarbon
348.1	...Stretched product
348.2	...At least six carbon atoms
348.3	....Ten or more carbon atoms
348.4	....Six carbon atoms only
348.5	.....N-hexene
348.6	...At least four carbon atoms
348.7	....Isobutylene
348.8	...With nonhydrocarbon monomer
351	...From propylene only
352	...From ethylene only
352.2	....Low density
	******************************
	CROSS-REFERENCE ART COLLECTIONS
	******************************
901	MONOMER POLYMERIZED IN VAPOR STATE IN PRESENCE OF TRANSITION METAL CONTAINING CATALYST
902	MONOMER POLYMERIZED IN BULK IN PRESENCE OF TRANSITION METAL CONTAINING CATALYST
903	MONOMER POLYMERIZED IN PRESENCE OF TRANSITION METAL CONTAINING CATALYST AND HYDROCARBON ADDITIVE AFFECTING POLYMER PROPERTIES OF CATALYST ACTIVITY
904	MONOMER POLYMERIZED IN PRESENCE OF TRANSITION METAL CONTAINING CATALYST AT LEAST PART OF WHICH IS SUPPORTED ON A POLYMER
905	POLYMERIZATION IN PRESENCE OF TRANSITION METAL CONTAINING CATALYST IN PRESENCE OF HYDROGEN
906	COMMINUTION OF TRANSITION METAL CONTAINING CATALYST
907	SPECIFIED MEANS OF REACTING COMPONENTS OF TRANSITION METAL CATALYST
908	CONTAINING CATALYST OF SPECIFIED PARTICLE SIZE
909	POLYMERIZATION CHARACTERIZED BY PARTICLE SIZE OF PRODUCT
910	SUSPENDING AGENTS
911	EMULSIFYING AGENTS
912	REACTION MEDIUM PURIFICATION
913	VAPOR PHASE POLYMERIZATION IN ABSENCE OF TRANSITION METAL CONTAINING CATALYST
914	POLYMER DEGRADATION
915	REDOX CATALYST
916	INTERPOLYMER FROM AT LEAST THREE ETHYLENICALLY UNSATURATED MONOOLEFINIC HYDROCARBON MONOMERS
917	MANIPULATIVE PROCESSES INVOLVING A SULFUR-CONTAINING TREATING AGENT
918	POLYMERIZATION REACTORS FOR ADDITION POLYMER PREPARATION
919	CATALYST INJECTION TECHNIQUE IN ADDITION POLYMERIZATION PROCESSES
920	APPARATUS FOR USE IN ADDITION POLYMERIZATION PROCESSES
921	TIME CYCLE USED IN ADDITION POLYMERIZATION PROCESS CONTROL
922	POLYMERIZATION PROCESS OF ETHYLENIC MONOMERS USING MANIPULATIVE TECHNIQUE
923	ETHYLENIC MONOMERS CONTAINING AT LEAST ONE SALT GROUP
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	Note. The following.........
	subclasses pertain only to..
	subclasses 317.1 and 318.1..
	to 318.5. ....
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930	WATER SWELLABLE OR HYDROPHILIC
931	PRESSURE SENSITIVE ADHESIVE
932	THICKENER OR DISPERSANT FOR AQUEOUS SYSTEM
933	DETERGENT PROPERTY OR LUBRICANT ADDITIVE
934	ELECTRODEPOSIT, E.G., ELECTROPHORETIC, XEROGRAPHIC, ETC.
935	HOT MELT ADHESIVE
936	PHYSIOLOGICAL USE, E.G., PHARMACEUTICAL, VETERINARY, DENTAL, ETC.
937	OPTICAL CLARITY
938	RUBBERY PROPERTY
939	MOSITURE PROOF OR HYDROPHOBIC

940 HIGH SOFTENING TEMPERATURE, E.G., EXPOSURE TO BOILING WATER, BOILABLE, ETC.

CLASS 527 PART OF THE CLASS 520 SERIES -- SYNTHETIC RESINS OR NATURAL RUBBERS

SYNTHETIC RESINS (Class 520, Subclass 1)

100 .FROM REACTANT WHICH IS A CELLULAR MATERIAL DERIVED FROM PLANT OR ANIMAL SOURCE AND IS OTHER THAN DIATOMACEOUS EARTH, BLOOD, COTTON, OR FARINACEOUS FLOUR, E.G., CITRUS PULP, WALNUT SHELL FLOUR, ETC.
101 ..Animal derived, e.g., hair, leather, horn, etc.
102 ...With ethylenic reactant
103 ..Wood or wood cellulose fiber or flour
105 ...With aldehyde or derivative
200 .FROM PROTEIN OR BIOLOGICALLY ACTIVE POLYPEPTIDE REACTANT
201 ..With ethylenically unsaturated reactant
202 ...Polymerization in the presence of a specified material
203 ...With nonethylenically unsaturated reactant
204 ..With N=C=X reactant wherein X is chalcogen
205 ..With aldehyde or derivative or ketone reactant
206 ...With phenolic reactant
207 ..With carboxylic acid or derivative reactant
300 .FROM CARBOHYDRATE OR DERIVATIVE AS A REACTANT
301 ..With N=C=X reactant wherein X is chalcogen
302 ...Oxyalkylated carbohydrate
303 ..With phenolic reactant
304 ..With ketone reactant other than as a ketose
305 ..With aldehyde or derivative as a reactant other than as an aldose
306 ...Ethylenically unsaturated reactant
309 ...Nitrogen-containing reactant
310 ..With phosphorus-containing reactant
311 ..With di- or higher ester of polycarboxylic acid; or with polycarboxylic acid or derivative and a compound containing two or more hydroxyl groups or salts thereof as reactants
312 ..With nitrogen-containing reactant
313 ..Ethylenically unsaturated reactant
314 ...Unsaturated carboxylic acid or derivative reactant
315 ...With heterocyclic reactant other than carbohydrate
400 .FROM LIGNIN, TANNIN, OR DERIVATIVE REACTANT
401 ..With N=C=X reactant wherein X is chalcogen or polyepoxide reactant
403 ..With phenolic reactant
500 .FROM COAL OR BITUMINOUS MATERIAL, EXTRACT OR DERIVATIVE THEREOF, OR FATTY STILL RESIDUE REACTANT
501 ..With polyepoxide reactant or N=C=X reactant wherein X is chalcogen
503 ..With phenolic reactant or aldehyde reactant
600 .FROM NATURAL RESIN OR DERIVATIVE REACTANT EXCLUDING TALL OIL OR DERIVATIVE
601 ..With polyepoxide reactant
602 ..With phenolic reactant
603 ...With ethylenically unsaturated reactant
604 ..With polycarboxylic acid or derivative and a compound having two or more hydroxyl groups as reactants

SYNTHETIC RESINS (Class 520, Subclass 1)

1 .FROM PLANT MATERIAL OF UNKNOWN CONSTITUTION

2 ..From cashew material with a sulfur-containing reactant

3 ..From cashew material with an aldehyde or derivative

4 .FROM BORON REACTANT HAVING AT LEAST ONE BORON TO HYDROGEN OR BORON TO CARBON BOND

5 ..Boron reactant contains a silicon atom

6 ..Boron reactant contains a phosphorus atom

7 ..Boron reactant contains a nitrogen atom

8 ..Boron reactant contains a boron atom bonded to at least one atom of oxygen

9 .FROM HEAVY METAL OR ALUMINUM REACTANT HAVING AT LEAST ONE HYDROGEN-TO-HEAVY METAL OR -ALUMINUM BOND OR AT LEAST ONE CARBON-TO-HEAVY METAL OR -ALUMINUM BOND

10 .FROM SILICON REACTANT HAVING AT LEAST ONE SILICON-TO-HYDROGEN OR -CARBON BOND

12 ..Polymerizing in the pressence of a specified material other than a reactant

13 ...Material is a boron-containing material

14 ...Material is a metal-containing material

15 ....Material contains a Group VIII metal atom

16 ....Material contains a Group IIIA metal

17 ....Material contains a Group IVB metal atom

18 ....Material contains a Group IVA metal atom

19 ....Material contains a heavy metal atom

20 ...Material contains an alcohol, alcoholate, or ether compound

21 ...Material is a nitrogen-containing compound

22 ....Nitrogen-containign silicon compound

23 ...Material contains a phosphorus or sulfur atom

24 ...Material contains a compound having an O-O group, e.g., peroxide, etc.

25 ..With organic silicon-free reactant

26 ...Organic Si-free reactant is a carboxylic acid or derivative

26.5 ....Reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil

27 ...Organic Si-free reactant contains a heterocyclic ring

28 ...Organic Si-free reactant is a nitrogen-containing compound

29 ...Organic Si-free reactant is an alcohol or alcoholate

30 ..From silicon-containing reactant having at least one polyvalent atom other than carbon, oxygen, or nitrogen

31 ..Silicon reactant contains a silicon-to-hydrogen bond

32 ..Silicon reactant contains an ethylenically unsaturated group

33 ..Silicon reactant contains two or more silicon atoms

34 ...With silicon reactant containing a single silicon atom

35 ...Silicon reactamt contains only carbon atom, only a carbon chain, or chain of carbon and oxygen atoms only between two silicon atoms

36 ...Silicon reactant contains at least one halogen atom bonded to a carbon atom which carbon atom is not an acyl halide carbon atom

37 ...Reactant contains a silicon atom as a ring member of a cyclic compound

38 ..Silicon reactant contains an amine nitrogen atom

39 ..With silicon reactant which is free of any silicon to carbon bond

40 ..Silicon reactant contains a fused, bridged, or cycloaliphatic ring

41 ..Silicon containing carboxylic acid or derivative or from a silicon derivative of a nonsilicon containing carboxylic acid

42 ..Silicon reactant contains at least one halogen atom bonded to a carbon atom which carbon atom is not an acyl halide carbon atom

43 ..Silicon reactant contains an aryl group

44 .FROM REACTANT HAVINC AT LEAST ONE -N=C=X GROUP (WHEREIN X IS A CHALCOGEN ATOM) AS WELL AS PRECURSORS THEREOF, E.G., BLOCKED ISOCYANATE, ETC.

45 ..From at least one blocked -N=C=X group

48 ..Process of polymerizing in the presence of a specified material other than reactant

49 ...Material contains only one -C-XH,-C-C(=X)-XH or carbon to -NH or HNH group

50 ...Material contains compound having a -O-O- group, e.g., peroxide, etc.

51 ...Material contains a phosphorus atom

52 ...Material is organic nitrogen-containing compoud

53 ....Organic nitrogen compound contains a nitrogen atom bonded to three atoms or carbon

54 .....Nitrogen compound wherein nitrogen atom is bonded to three atoms of carbon contains a bridged- or fused-ring system, e.g., triethylene diamine, etc.

55 ...Material contains at least one metal atom

56 ....Material contains a transition metal atom

57 ....Material contains at least one group IA or group IIA metal atom

58 ....Material contains at least one atom of tin

59 ..From N=C=X reactant having at least two -C-NH-C(=X)- groups

60 ...With reactant compound containing three or more XH, -C(=X)-XH, -NH, =NH, or HNH groups or combination thereof

61 ...With organic nitrogen reactant which contains two NH, =NH, or HNH groups

62 ....Organic NH, =NH, or HNH nitrogen-containing reactant contains a heterocyclic ring

63 ....Organic NH, =NH, HNH nitrogen reactant contains at least one halogen atom

64 ....Organic NH, =Nh or HNH nitrogen reactant contains a carbocyclic or aromatic ring

65 ...With reactant having two -XH groups

SYNTHETIC RESINS (Class 520, Subclass 1)

.FROM REACTANT HAVING AT LEAST ONE -N=C=X GROUP (WHEREIN X IS A CHALCOGEN ATOM) AS WELL AS PRECURSORS THEREOF, E.G., BLOCKED ISOCYANATE, ETC.

..From N=C=X reactant having at least two -C-NH-C(=X)- groups

...With reactant having two -XH groups

66 ....Reactant having two -XH groups contains two or more -C-X-C- groups or two or more carboxylic acid ester groups

67 ..From two or more reactants containing -N=C=X groups

68 ..With organic compound reactant containing at least two NH, HNH or =NH groups and wherein the reactant composition is devoid of -C-XH, -C(=X)XH or anhydride

69 ..Reactant contains a single -N=C=X group

70 ..Reactant contains a fluorine atom

71 ..Reactant contains at least one salt group, e.g., quaternary ammonium salt, etc.

72 ..Reactant contains at least one phosphorus atom

73 ..Reactant contains at least one heterocyclic ring

74 ..Reactant contains at least one bridged- or fused-ring system

74.5 ..Reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil

75 ..Reactant contains at least one ethylenically unsaturated group

76 ..With ether or thioether compound containing at least two -C-X-C- groups

77 ...Ether or thioether compound contains three or more -XH groups

78 ...Ether or thioether contains at least one nitrogen atom other than as a C-NH, C=NH, or C-N(H)-H

79 ...Ether or thioether contains a carbocyclic or aromatic group

80 ..With reactant compound containing at least two -C-C(=X)-X-C groups and which compound is devoid of C-NH, C=NH or C-N(H)-H groups

81 ...Reactant compound which contains at least two -C-C(=X)-X-C groups contains three or more XH groups

82 ...Reactant which contains at least two -C-C(=X)-X-C groups contains tertiary nitrogen atom

83 ...Reactant which contains at least two -C-C(=X)-X-C groups has been derived from only a dicarboxylic acid or derivative and only a dihydric alcohol or alcoholate derivative

84 ..With reactant containing at least two -C-C(=X)-X groups

85 ..With reactant containing at least two -XH groups

86 .FROM PHENOL, PHENOL ETHER, OR INORGANIC PHENOLATE

87 ..From 1,2-epoxy-containing phenolic reactant or with 1,2-epoxy-containing reactant

88 ...Polymerizing in the presence of a specified material other than reactant

89 ....Material contains a phosphorus atom

90 ....Material contains a sulfur atom

91 ....Material contains a boron atom

92 ....Material contains a polyvalent metal atom

93 ....Material contains a nitrogen compound

94 .....Nitrogen material contains a nitrogen atom as part of a heterocyclic ring

95 ....Material contains a Group IA metal atom (Li, Na, K, Rb, Cs, Fr)

96 ...Phenolic reactant contains a heterocyclic group other than a 1,2-epoxy group per se

97 ...Phenolic reactant contains a fused-or bridged-ring other than as a 1,2-epoxy group fused to carbocyclic or aromatic ring

98 ...Phenolic reactant contains at least three distinct aromatic or carbocyclic rings or mixtures thereof

99 ...Phenolic reactant contains at least one nitrogen, phosphorus, or sulfur atom

100 ...Phenolic reactant contains a carboxylic acid or carboxylic acid derivative thereof

101 ...Phenolic reactant contains ethylenic unsaturation or contains a 1,2-epoxy group fused to a carbocyclic ring

102 ...Phenolic reactant contains a halogen atom directly bonded to a nuclear carbon atom of the aryl-oxygen group

103 ...Two or more 1,2-epoxy reactants

103.5 ....1,2-epoxy reactant having at least one carboxylic ester group, e.g., epoxidized linseed oil, etc.

104 ...Two or more phenolic reactants

105 ...Phenolic reactant contains only one, 1,2-epoxy group

106 ...With at least one nonepoxy or nonphenolic reactant

107 ....Non-1,2-epoxy or nonphenolic reactant is an aldehyde or derivative

108 ....Non-1,2-epoxy, or nonphenolic reactant is a phosphorus-containing material

109 ....Non-1,2-epoxy, or nonphenolic reactant is a sulfur-containing material

110 ....Non-1,2-epoxy, or nonphenolic reactant is an alcohol, inorganic alcoholate, or ether

111 .....Nitrogen-containing alcohol, inorganic alcoholate, or ether

111.3 ....Non 1,2-epoxy or nonphenolic reactant which is a dimer or trimer of an ethylenically unsaturated aliphatic monocarboxylic acid having at least ten carbon atoms; or adduct of said unsaturated monocarboxylic acid with an alpha, beta ethylenically unsaturated carboxylic acid or derivative

111.5 ....Non 1,2-epoxy or nonphenolic reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil

SYNTHETIC RESINS (Class 520, Subclass 1)
.FROM PHENOL, PHENOL ETHER, OR INORGANIC PHENOLATE
..From 1,2-epoxy-containing phenolic reactant or with 1,2-epoxy-containing reactant
...With at least one nonepoxy or nonphenolic reactant
112 ....Non-1,2-epoxy or nonphenolic reactant is a carboxylic acid, salt thereof, or carboxylic acid anhydride
113 .....With nitrogen-containing reactant
114 .....Nitrogen-containing carboxylic acid, salt thereof, or anhydride, or nitrogen-containing salt of a non-nitrogen-containing carboxylic acid
115 .....At least two carboxylic acids, salts thereof, or carboxylic acid anhydrides, or mixtures thereof
116 ....Non-1,2-epoxy or nonphenolic reactant contains a heterocyclic ring
117 .....Five-membered heterocyclic ring contains at least one nitrogen atom as a ring member
118 .....Six-membered heterocyclic ring contains at least one nitrogen atom as a ring member
119 ....Non-1,2-epoxy or nonphenolic reactant contains one or more nitrogen atoms
120 .....Two or more nitrogen-containing reactants
121 .....Nitrogen reactant contains at least one amino-nitrogen atom
122 ......Nitrogen reactant having at least one amino-nitrogen atom contains a cycloaliphatic ring
123 ......Nitrogen reactant having at least one amino-nitrogen atom contains three or more nitrogen atoms
124 ......Nitrogen reactant having at least one amino-nitrogen atom contains at least one aryl group
125 ..From ketone-containing phenolic reactant or with ketone-containing reactant
126 ...Polymerizing in the presence of a specified material other than reactant
127 ...With nonketone- or nonphenolic-aldehyde or derivative as a reactant
128 ...With nonphenolic or nonketone reactant
129 ..With aldehyde or derivative
137 ...Polymerizing in the presence of a specified material other than a reactant
138 ....Material contains a boron atom
139 ....Material contains an aluminum or heavy metal atom
140 ....Material contains a Group IIA metal atom (Be, Mg, Ca, Sr, Ba, Ra)
141 ....Material contains a phosphorus atom
142 ....Material contains an alcohol, inorganic alcoholate, or ether
143 ....Material contains a sulfur atom
144 ....Material contains a carboxylic acid, anhydride thereof, ester thereof, or salt thereof
145 ....Material contains a nitrogen compound
146 .....Nitrogen-containing material contains a nitrogen atom directly bonded to a carbon atom
147 ....Material contains a Group IA metal atom (Li, Na, K, Rb, Cs, Fr)
148 ...Phenolic reactant contains a carboxylic acid or carboxylic acid salt group
149 ...Phenolic reactant contains a nitrogen atom
150 ...Phenolic reactant contains a sulfur atom
151 ...Phenolic reactant contains a halogen atom directly bonded to a nuclear carbon atom of the benzene-oxygen group
152 ...Phenolic reactant contains an ethylenically unsaturated group
153 ...Phenolic reactant contains at least two ring moieties (includes fused or bridged ring system)
154 ...Phenol ether
155 ...Two distinct phenolic reactants or two or more hydroxy groups or phenate groups bonded to nuclear carbon atoms of the same benzene ring
156 ...Two or more aldehydes or derivatives
157 ...Aldehyde or derivative is ethylenically unsaturated
158 ...With at least one nonaldehyde phosphorus- or sulfur-containing reactant
158.5 ...With a reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil
159 ...With an ethylenically unsaturated reactant
160 ...With reactant having only carbon and hydrogen atoms or only carbon, hydrogen, and halogen atoms
161 ...With at least one reactant which is other than an aldehyde or derivative and which contains a carboxylic acid, anhydride thereof, salt thereof, or ester thereof
162 ...With nitrogen-containing reactant
163 ....Nitrogen-containing reactant is a heterocyclic ring compound containing at least one nitrogen atom as a ring member or is nitrogen-containing aromatic compound
164 ....Nitrogen-containing reactant contains the -N-C(=O)-N- group
165 ...Aldehyde or derivative is sole coreactant
166 ..Aluminum- or heavy metal-containing reactant
167 ..Phosphorus-containing reactant
168 ...Nitrogen-containing reactant
169 ...Halogen-containing reactant
170 ..Imide-containing reactant
171 ..Sulfur reactant contains sulfur directly bonded to oxygen
172 ...Nitrogen-containing compound is a reactant other than wherein nitrogen is solely present as a carboxylic acid derivative
173 ...Carboxylic acid or derivative is a reactant
174 ...Halogen-containing material is a reactant
175 ....Reactant contains a (O=)S(=O)-halo group

SYNTHETIC RESINS (Class 520, Subclass 1)
.FROM PHENOL, PHENOL ETHER, OR INORGANIC PHENOLATE
176 ..With polycarboxylic acid or derivative as reactant
179 ...Polymerizing in the presence of a specified material other than a reactant and other than Group IA or Group IIA material as sole metal atom
180 ....Material contains a metal atom
181 .....At least one transition metal atom
182 ....Material is a nitrogen-containing compound
183 ...Nitrogen reactant contains at least one amino-nitrogen atom
184 ....Nitrogen reactant having at least one amino-nitrogen atom contains a carboxylic acid group or is a derivative thereof
185 ....Phenolic reactant contains at least two aryl rings and two diverse phenolic to oxygen bonds
186 ....Nitrogen reactant contains at least three amino-nitrogen atoms bonded to one or more carbon atoms
187 .....At least one reactant contains three or more carboxylic acid groups or is derivative thereof
188 ....Reactant contains three or more carboxylic acid groups or is derivative thereof
189 .....Two or more polycarboxylic acids or derivatives or mixtures thereof
190 ...Reactant contains a fused- or bridged-ring other than solely as a polycarboxylic acid anhydride group
191 ...Reactant contains a halogen atom other than solely as halogen atom bonded to a carbonyl group
192 ...Ethylenically unsaturated reactant
193 ...Two or more phenolic reactants
194 ...Two or more polycarboxylic acids or derivatives as reactants
195 ...Reactant is a nonphenolic compound having at least two hydroxyl groups or salts thereof
196 ..With reactant having halo-C(=O)-halo, halo-C(=O)-O-, or -O-C(=O)-O- group
198 ...Polymerizing in the presence of a specified material other than a reactant and other than Group IA or Group IIA material as sole metal atom
199 ....Material is a nitrogen-containing compound
200 ....Material contains a metal atom
201 ...Fused- or bridged-ring-containing reactant other than solely as a polycarboxylic acid anhydride group
202 ...Reactant contains a halogen atom other than solely as halogen bonded to a carbonyl group
203 ...Reactant contains a nitrogen atom
204 ...Two or more phenolic reactants
205 ..Ethylenically unsaturated reactant
206 ..Phenolic reactant contains at least one carboxylic acid group or is derivative thereof
207 ...Polymerizing in the presence of a specified material other than a reactant and other than Group IA or Group IIA material as sole metal atom
208 ...Nitrogen-containing reactant
209 ...With nonphenolic compound having at least two hydroxyl groups or salts thereof as reactant
210 ..Phenolic reactant contains a nitrogen atom
211 ..With nitrogen-containing reactant
212 ..Phenolic reactant contains a single phenolic -OH group or a single inorganic phenolate thereof
214 ...Polymerizing in the presence of a specified material other than a reactant and other than Group IA or Group IIA material as sole metal atom
215 ....Material is a nitrogen-containing compound
216 .....Nitrogen-containing material is a heterocyclic compound containing at least one nitrogen atom as a ring member
217 ....Material contains a metal atom
218 ...Two or more phenolic reactants each of which contains a single -OH group or inorganic phenolate group, or with a compound containing a single ether oxygen atom bonded to two discrete aryl rings
219 ..Phenolic reactant contains two or more phenolic -OH groups, or two or more inorganic phenolate groups, or mixtures thereof
220 .FROM KETONE OR KETENE REACTANT
222 ..Polymerizing in the presence of a specified material other than a reactant
223 ...Material contains a phosphorus or sulfur atom
224 ...Material contains a nitrogen-containing compound
225 ...Material contains a boron or polyvalent metal atom
226 ..With sulfur-containing reactant
227 ..With aldehyde or derivative thereof as reactant
228 ..With nitrogen-containing reactant
229 ...Nitrogen-containing reactant contains an amine group
230 .FROM ALDEHYDE OR DERIVATIVE THEREOF AS REACTANT
232 ..Polymerizing in the presence of a specified material other than a reactant
233 ...Material contains a metal atom
234 ....Material contains a transition metal atom
235 .....Transition metal atom is a Group VIII metal atom
236 ....Material contains a heavy metal atom
237 .....Heavy metal is a Group IVA metal atom (Ge, Sn, Pb)
238 ....Material contains an aluminum atom
239 ....Material contains a Group IA metal atom (Li, Na, K, Rb, Cs, Fr)
240 ...Material contains a boron atom
241 ....Boron trihalide or organic complex thereof
242 ...Material contains a phosphorus or sulfur atom
243 ...Material contains nitrogen as part of a nitrogen-containing compound
244 ..Fluorine- or phosphorus-containing reactant
245 ..From glyoxal or compound having two or more -C(=O)-H groups per se

SYNTHETIC RESINS (Class 520, Subclass 1)

.FROM ALDEHYDE OR DERIVATIVE THEREOF AS REACTANT

245.3 ..With a polycarboxylic acid reactant which is a dimer or trimer of an ethylenically unsaturated aliphatic monocarboxylic acid having at least ten carbon atoms; or adduct of said unsaturated monocarboxylic acid with an alpha, beta ethylenically unsaturated carboxylic acid or derivative

245.5 ..With a reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil

246 ..Ethylenically unsaturated reactant other than unsaturation solely in heterocyclic ring containing only oxygen as hetero atom

247 ..With hydrocarbon or halogenated hydrocarbon reactant

248 ..With heterocyclic reactant which is not an aldehyde or derivative

249 ...Nonaldehyde or nonaldehyde derivative heterocyclic compound contains an oxygen atom as a ring member of the heterocyclic compound

250 ....Heterocyclic compound contains a 1,2-epoxy ring

251 ...Nonaldehyde or nonaldehyde derivative heterocyclic compound contains a sulfur atom as a ring member of the heterocyclic compound

252 ...Nonaldehyde or nonaldehyde derivative heterocyclic compound contains only two nitrogen atoms as ring members of the heterocyclic compound

253 ...Nonaldehyde or nonaldehyde derivative heterocyclic compound contains two or more heterocyclic rings and includes shared hetero atoms in a fused or bridged ring system

254 ...Nonaldehyde or nonaldehyde derivative heterocyclic reactant contains a six-membered ring having three nitrogen and three carbon atoms as ring members

255 ....Sulfur-containing heterocyclic compound having three nitrogen and three carbon atoms

256 ....With reactant containing >NC(=O)- or >N-C(=S)- group, e.g., urea, etc.

257 ....With reactant containing at least one noncyclic carbon atom bonded to at least three atoms of nitrogen, e.g., dicyanodiamide, etc.

258 ....Six-membered heterocycle is other than melamine per se or methylol derivative thereof

259 ..With >N-C(=X)-N< -containing reactant wherein X is a chalcogen atom

260 ...Two or more >N-C(=X)-N< -containing reactants

261 ...At least one reactant is a nonaldehyde or nonaldehyde derivative, non- >N-C(=X)-N< -containing reactant

262 ....Nonaldehyde reactant, non->N-C(=X)-N< reactant contains a nitrogen atom

263 .....Non- >N-C(=X)-N< nitrogen reactant is an organic compound containing two or more amino groups

264 ...>N-C(=X)-N< reactant is other than urea or thiourea per se

265 ..Sulfur-containing reactant

266 ..With nonaldehyde or nonaldehyde derivative nitrogen-containing compound

267 ...Nitrogen-containing nonaldehyde or nonaldehyde derivative contains a nitrile group

268 ...Nitrogen-containing nonaldehyde or nonaldehyde derivative contains three or more nitrogen atoms bonded to the same carbon atom, e.g., dicyanodiamide, etc.

269 ...Nitrogen-containing nonaldehyde or nonaldehyde derivative contains a single organic amine group

270 ..From aldehyde or aldehyde derivative as sole reactant (includes copolymer of only aldehydes or aldehyde derivatives)

271 .FROM CARBOXYLIC ACID OR DERIVATIVE THEREOF

272 ..From di- or higher ester of a polycarboxylic acid as sole reactant, or from a polycarboxylic acid or derivative with a compound containing two or more hydroxyl groups or salts thereof

274 ...Polymerizing in the presence of a specified material other than reactant

275 ....Material contains a metal atom

276 .....Metal atom in elemental form

277 .....Material contains a transition metal atom

278 ......Metal atom has atomic number of 57-71, or 89 and higher

279 ......Material contains a Group IVB metal atom (Ti, Zr, Hf)

280 ......Material contains a Group VIII metal atom (Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt)

281 .....Material contains a Group IIB metal atom (Zn, Cd, Hg)

282 .....Material contains a Group IIIA metal atom (Al, Ga, In, Tl)

283 .....Material contains a Group IVA metal atom (Ge, Sn, Pb)

284 ......Material contains a lead atom

285 .....Material contains a Group VA metal atom (As, Sb, Bi)

286 ....Material contains a phosphorus atom

287 ...Phosphorus-containing reactant

288 ...Nitrogen-containing reactant

289 ....Final product contains nitrogen atom as a member of a heterocyclic ring

290 ....Sulfur-containing reactant

291 ....Nitrogen-containing polyhydroxy compound or salt of a nitrogen-containing polyhydroxy compound

292 ....Nitrogen-containing polycarboxylic acid or nitrogen-containing polycarboxylic acid derivative

293 ...Sulfur-containing reactant

294 ....Sulfur-containing polyhydroxy compound or salt of a sulfur-containing polyhydroxy compound

295 ....Sulfur-containing aryl compound

	SYNTHETIC RESINS (Class 520, Subclass 1)
	.FROM CARBOXYLIC ACID OR DERIVATIVE THEREOF
	..From di- or higher ester of a polycarboxylic acid as sole reactant, or from a polycarboxylic acid or derivative with a compound containing two or more hydroxyl groups or salts thereof
295.3	...Polycarboxylic acid reactant which is a dimer or trimer of an ethylenically unsaturated aliphatic monocarboxylic acid having at least ten carbon atoms; or adduct of said unsaturated monocarboxylic acid with an alpha, beta ethylenically unsaturated carboxylic acid or derivative
295.5	...Reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil
296	...Reactant contains three or more carboxylic acid groups or is derivative thereof
297	...1,2-epoxy containing reactant
298	...Fused- or bridged-ring-containing reactant other than solely as cyclic acid anhydride group
299	...Halogen-containing reactant other than solely as halogen atom bonded to a carbonyl group
300	...Polyhydroxy-containing compound or salt thereof having an ether-oxygen atom as reactant
301	....Acyclic ether-oxygen compound
302	...Two or more carboxylic acid or derivatives or mixtures thereof
303	....Ethylenically unsaturated carboxylic acid or ethylenically unsaturated derivative
304	.....Aryl-containing carboxylic acid or derivative of an aryl-containing carboxylic acid
305	....Each of the carboxylic acids or derivatives contains an aryl group
306	...Ethylenically unsaturated carboxylic acid or derivative of an ethylenically unsaturated carboxylic acid
307	...Cycloaliphatic ring-containing reactant (other than aryl)
308	...Aryl-containing carboxylic acid or derivative of an aryl-containing dicarboxylic acid
308.1	....Polyethylene Terephthalate per se
308.2	.....Physically after-treated solid polymer
308.3	.....Processes of preparing
308.4	......In presence of hydrocarbon, steam or water
308.5	......At least two claimed distinct temperature or pressure gradients
308.6	....Contains terephthalic acid or substituted forms thereof
308.7	.....Derived from at least two reactants simultaneously containing a C-OH group
308.8	.....Processes of preparing
309.1	......At least two claimed distinct temperature or pressure gradients
310	..From imide- or lactam-containing compound, or from an amino-nitrogen-containing carboxylic acid, or derivative of an amino-nitrogen-containing carboxylic acid
312	...Polymerizing in the presence of a specified material other than reactant
313	....Material contains a phosphorus or sulfur atom
314	....Material contains a nitrogen atom as a ring member of a heterocyclic ring other than where nitrogen heterocycle is solely part of a lactam ring
315	....Material is a nitrogen-containing compound other than a lactam
316	....Material is a ketone, aldehyde, or derivative
317	....Material is an alcohol, ether, or inorganic alcoholate
318	....Material is a carboxylic acid, acyl halide thereof, ester thereof, or lactone thereof
319	....Material contains a polyvalent metal atom
320	....Material contains a silicon atom
321	...Phosphorus- or sulfur-containing reactant
322	...Imide-containing reactant
323	...Lactam-containing reactant
324	....With two or more reactants one of which is a carboxylic acid or derivative and one of which is an organic compound containing at least two amino-nitrogen atoms
325	....Two or more lactam reactant or with an amino-containing carboxylic acid or derivative of an amino-containing carboxylic acid
326	....Lactam reactant contains 3-5 or 12 or more carbon atoms in the lactam ring
327	...Heterocyclic reactant or a reactant which contains a nitrogen atom bonded directly to another nitrogen atom
328	...From N-C-(C=O)-OH containing reactant or acid derivative thereof, e.g., alpha amino acid, etc.
329.1	...With two or more reactants one of which is a carboxylic acid or derivative thereof which is devoid of an amine group and one reactant which is a polyamine which is devoid of a carboxylic acid group or carboxylic acid derivative group
330	...Cycloaliphatic ring-containing reactant
331	...Aryl-containing reactant
332	..With organic amine, or from organic amine salt of a carboxylic acid
335	...From dicarboxylic acid or derivative thereof and an organic amine, or from an organic amine salt of a dicarboxylic acid
336	....Polymerizing in the presence of a specified material
337	....Phosphorus- or sulfur-containing reactant
338	....From at least two dicarboxylic acids or derivatives or mixtures thereof and at least two organic polyamines
339	....From at least two dicarboxylic acids or derivatives or mixtures thereof

SYNTHETIC RESINS (Class 520, Subclass 1)
.FROM CARBOXYLIC ACID OR DERIVATIVE THEREOF
..With organic amine, or from organic amine salt of a carboxylic acid
...From dicarboxylic acid or derivative thereof and an organic amine, or from an organic amine salt of a dicarboxylic acid
....From at least two dicarboxylic acids or derivatives or mixtures thereof
339.3 .....Polycarboxylic acid reactant which is a dimer or trimer of an ethylenically unsaturated aliphatic monocarboxylic acid having at least ten carbon atoms; or adduct of said unsaturated monocarboxylic acid with an alpha, beta ethylenically unsaturated carboxylic acid or derivative
339.5 .....Reactant which is a fatty acid glycerol ester, a fatty acid or salt derived from a naturally occurring glyceride, tall oil, or a fatty acid derived from tall oil
340 ....From at least two organic polyamines
341 ....Heterocyclic-containing reactant other than cyclic acid anhydride as sole hetero ring
342 ....From reactant containing at least three amino-nitrogen-containing groups or with a carboxylic acid containing at least three carboxylic acid groups or deivatives thereof
343 ....Carboxylic acid containing (C=O)-(C=O) or is a derivative thereof, e.g., oxalic acid, etc.
344 ....Bridged- or fused-ring-containing reactant other than as anhydride fused to a nonfused- or bridged-ring system
345 ....Ethylenically unsaturated reactant
346 ....Cycloaliphatic ring-containing reactant
347 ....Aryl ring-containing reactant
348 .....All reactants contain at least one aryl ring
349 ....Reactant contains three carbon atoms directly bonded to a single carbon atom
350 ...From carboxylic acid having three or more carboxylic acid groups or derivatives thereof, and an organic amine, or from an organic amine salt of a tri-or higher carboxylic acid
351 ....Polymerizing in the presence of a specified material other than a reactant
352 ....Phosphorus- or sulfur-containing reactant
353 ....Carboxylic acid contains at least four carboxylic acid groups or is a derivative of a carboxylic acid containing at least four carboxylic groups
354 ..From compound having -C-C(=O)-O-C- group as part of a heterocyclic ring, e.g., lactone, etc.
355 ...Polymerizing in the presence of a specified material other than a reactant
356 ....Material contains a phosphorus or sulfur atom
357 ....Material contains a metal atom
358 .....Material contains a Group IA (Li, Na, K, Rb, Cs, Fr) or Group IIA metal atom (Be, Mg, Ca, Sr, Ba, Ra)
359 ...Heterocyclic ring compound is a four-membered ring containing one oxygen and three carbon atoms -C-C(=O)-O-C-
360 ..From sulfur-containing carboxylic acid
361 ..From ether, metal alcoholate, or alcohol group-containing carboxylic acid; or from a derivative of a carboxylic acid which derivative contains an ether, metal alcoholate, or alcohol group
362 ..From organic nitrile group-containing compound
363 ..With nitrogen-containing reactant
364 ..With sulfur-containing reactant
365 ..With reactant containing at least one cyclic ether group
366 ...Contains a single 1,2-epoxy group
367 .FROM REACTANT HAVING A NITROGEN ATOM DIRECTLY BONDED TO THE CARBON ATOM OF A CARBONYL GROUP, I.E., N-C(=O)-
368 ..Polymerizing in the presence of a specified material other than a reactant
369 ..N-C(=O)-OH containing reactant or ester, salt, anhydride, or acyl halide thereof
370 .FROM REACTANT HAVING A HALOGEN ATOM OR OXYGEN SINGLE BONDED TO A CARBONYL GROUP, E.G., HALO-C(=O)-, -O-C(=O)-O, ETC.
371 ..Polymerizing in the presence of a specified material other than a reactant
372 ..Reactant contains a halogen atom directly bonded to a carbon atom of a carbonyl group, i.e., halo-C(=O)-
373 .FROM SULFUR-CONTAINING REACTANT
374 ..From mercaptan or mercaptide-containing reactant
375 ...Two or more mercaptan or mercaptide reactants, or mixture thereof, or with additional reactant-containing sulfur
376 ...With ethylenically unsaturated reactant
377 ..From heterocyclic compound containing a sulfur atom as a ring member
378 ...Polymerizing in the presence of a specified material other than a reactant
379 ....Material contains a Group IA (Li, Na, K, Rb, Cs, Fr) or Group IIA metal atom (Be, Mg, Ca, Sr, Ba, Ra)
380 ...Heterocyclic reactant contains a ring composed solely of carbon atoms and a single sulfur atom
381 ..From inorganic sulfur-containing reactant
382 ...Sulfur dioxide is a reactant
383 ....Polymerizing in the presence of a specified material other than a reactant
384 .....Material contains a metal atom
385 .....Material is free oxygen, peroxide, air, or ozone
386 ....With reactant containing only hydrogen and carbon atoms
387 ...Carbon disulfide or hydrogen sulfide is reactant

SYNTHETIC RESINS (Class 520, Subclass 1)
.FROM SULFUR-CONTAINING REACTANT
..From inorganic sulfur-containing reactant
388 ...Inorganic sulfur reactant contains at least one metal atom or contains an ammonium ion
389 ...Elemental sulfur is reactant
390 ..From organic reactant containing a -C(=S)-group
391 ..From organic reactant containing a sulfur to oxygen bond, e.g., -S(=O), etc.
392 .POLYMER OF AN ETHYLENICALLY UNSATURATED REACTANT WITH A SATURATED REACTANT
393 ..At least one reactant contains a three-membered heterocyclic ring having two carbon and one oxygen atoms, e.g., oxirane, etc.
394 .FROM BORON-CONTAINING REACTANT
395 .FROM ALUMINUM- OR HEAVY METAL-CONTAINING REACTANT
396 .FROM HYDROCARBON REACTANT
397 .FROM HALOGENATED HYDROCARBON REACTANT
398 .FROM PHOSPHORUS-CONTAINING REACTANT
399 ..Phosphorus reactant contains a nitrogen atom
400 ..With alcohol or alcoholate reactant
401 .FROM FLUORINE-CONTAINING REACTANT
402 ..Fluorine reactant contains a heterocyclic ring having a -C-O-C- group as part of the hetero ring atoms
403 .FROM HETEROCYCLIC REACTANT CONTAINING AS RING ATOMS OXYGEN, SELENIUM OR TELLURIUM, E.G., EPOXY, ETC.
405 ..With reactant which is devoid of a heterocyclic ring containing oxygen, selenium or tellurium atoms as ring members
406 ...Heterocyclic reactant contains at least two heterocyclic rings having oxygen, selenium or tellurium as ring members
407 ....Reactant which is devoid of a heterocyclic ring containing oxygen, selenium or tellurium as ring atoms, contains at least one nitrogen atom
408 ..Polymerizing in the presence of a specified material other than a reactant
409 ...Material contains a metal atom
410 ....Material contains a transition metal atom
411 .....Material contains a Group IVB metal atom (Ti, Zr, Hf)
412 .....Material contains a Group VIII metal atom (Fe, Co, Ni, Pd, Ru, Os, Ir, Rh, Pt)
413 ....Material contains a Group IIA metal atom (Be, Mg, Ca, Sr, Ba, Ra)
414 ....Material contains a Group IIB metal atom (Zn, Cd, Hg)
415 .....Material contains at least two diverse metal atoms either in the same compound or in different compounds
416 ....Material contains a Group IIIA metal atom (Al, Ga, In, Tl)
417 ..Reactant contains a single hetero-atom in a ring and at least three carbon atoms, e.g., oxetane, etc.
418 ..Reactant contains two or more rings each of said rings having a single oxygen and two carbon atoms
419 ..Two or more heterocyclic reactants containing rings of one oxygen and two carbon atoms
420 ..Reactant has a three-membered ring of oxygen and two carbon and contains a nitrogen atom
421 ..Reactant has a three-membered ring containing oxygen and two carbon atoms, i.e., 1,2-epoxy
422 .NITROGEN-CONTAINING REACTANT
423 ..Reactant contains nitrogen as a ring member of a heterocyclic ring
424 ...Heterocyclic nitrogen-containing ring contains a single atom of nitrogen and two atoms of carbon as ring members
425 .FROM ORGANIC OXYGEN-CONTAINING REACTANT
480 .TREATING POLYMER CONTAINING MATERIAL OR TREATING A SOLID POLYMER OR A RESINIFIABLE INTERMEDIATE CONDENSATION PRODUCT
481 ..Treating at 0 Deg C (32 Deg F) or below, or at 200 Deg C (392 Deg F) or above
482 ..Contacting with ion exchange material or solid sorbent
483 ..Contacting with exteriorly produced specified gaseous agent other than drying, blanket, or carrier gas
484 ..Preventing or removing reactor or processing equipment buildup
485 ..Contacting with aluminum or heavy metal material
486 ..Contacting with carboxylic acid, salt, or anhydride thereof
487 ..Contacting with sulfur or phosphorus-containing material
488 ..Contacting with alkali (Li, Na, K, Rb, Cs, Fr) or alkaline earth (Be, Mg, Ca, Sr, Ba) metal or compound thereof
489 ...Oxide or hydroxide
490 ..Contacting with specified element or with specified inorganic compound other than water, elemental nitrogen, air and the inert gases (Group VIII A)
491 ..Contacting with organic material
492 ...Nitrogen containing
493 ...Aldehyde or ketone
494 ...Ether
495 ...Alcohol
496 ....Contains one to four carbon atoms
497 ...Hydrocarbon
498 ....Acyclic
499 ..Contacting with water
500 ...Steam stripping or steam distilling
501 ..With distilling or pressured reduction step to remove material, e.g., flashing, autorefrigeration, etc.
502 ..Physical treatment
503 ..Temperature maintaining, heating or cooling

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CROSS-REFERENCE ART COLLECTIONS

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901 ROOM TEMPERATURE CURABLE SILICON-CONTAINING POLYMER
902 PARTICULATE MATERIAL PREPARED FROM AN ISOCYANATE
903 POLYMERIZING OR PROCESSING AN ISOCYANATE UNDER SUBSTANTIALLY ANHYDROUS CONDITIONS
904 ISOCYANATE POLYMER HAVING STATED HYDROPHILIC OR HYDROPHOBIC PROPERTY
905 POLYMER PREPARED FROM ISOCYANATE REACTANT HAS ADHESIVE PROPERTY

906 FIBER OR ELASTOMER PREPARED FROM AN ISOCYANATE REACTANT

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*SUBCLASS 950 WILL BE THE....*
*GENERIC LOCATION FOR THE....*
*520 SERIES THAT PERTAINS TO.*
*MORE THAN ONE OF THE........*
*INDIVIDUAL SERIES OTHER.....*
*THAN THOSE CONCERNED WITH...*
*COMPOSITIONS, E.G., 523,....*
*524, ETC. ..................*
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950 POLYMERS USEFUL FOR REPLACING HARD ANIMAL TISSUES, E.G., DENTURES, BONES, ETC.
930 GUAYULE RUBBER
931 PHYSICAL TREATMENT OF NATURAL RUBBER OR NATURAL RUBBER CONTAINING MATERIAL OR CHEMICAL TREATMENT OF NON-RUBBER PORTION THEREOF, E.G., EXTRACTION OF RUBBER FROM MILK WEED, ETC.
932 .Protein removal or conversion
933 .Resin removal or conversion
934 .Latex
935 ..Preserving or stabilizing
936 ..Coagulating
937 ..Concentrating, e.g., creaming, etc.

CLASS 530 CHEMISTRY, NATURAL RESINS OR DERIVATIVES; PEPTIDES OR PROTEINS; LIGNINS OR REACTION PRODUCTS THEREOF

IN THIS SERIES OF CLASSES, CLASS 530 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

200 NATURAL RESINS OR DERIVATIVES (E.G., WOOD OR PINE TAR; CATIVO RESIN DERIVATIVES, ETC.)
201 .Shellac containing starting material used in process, or product thereof (e.g., lac, sticklac, seedlac, flake shellac, bleached shellac, etc.)
202 .Cut wood starting material used in process, or product thereof (e.g., using pine stumps, chips, bark, etc., as starting material)
203 .Plant sap or fossil starting material used in process, or product thereof (e.g., using copal, coal, amber, dammar, etc., as starting material)
204 ..Pine oleoresin starting material used in process, or product thereof (e.g., using gum turpentine, pine gum, pine resin, etc., as starting material)
205 .Recovery of tall oil or derivatives from papermaking waste, purification of tall oil, or separation of components of tall oil; or product thereof (e.g., separation of rosin, fatty acids, sterols, etc.; decolorizing, etc.)
206 ..Organic sulfur or nitrogen containing material used in the process, or product thereof
207 ..Esterification used in the process, or product thereof
208 ..Inorganic material used in the process, or product thereof (e.g., using sulfuric acid, boric acid, etc.)
209 ...Phosphorus or heavy metal containing material, elemental hydrogen, sulfur dioxide, or carbon dioxide used in the process, or product thereof
210 .Rosin or derivative used as starting material in process, or product thereof (e.g., using gum rosin, wood rosin, solid tall oil rosin, etc.)
211 ..Polymerization or product thereof (e.g., dimer rosin, etc.)
212 ...Chemical treatment or color modification of polymerized rosin or derivative, or product thereof (e.g., hydrogenation or esterification of polymerized rosin; removal of color bodies from polymerized rosin, etc.)
213 ..Boron or phosphorus containing material used in the process, or product thereof
214 ..Diels-Alder adducts (e.g., of maleic anhydride, fumaric acid, etc., with conjugated dienes, such as rosin acids, terpenes, etc.)
215 ..Esterification of rosin or derivative via carboxyl group, or product thereof
216 ...Chemical treatment or color modification of esterified rosin or derivative, or product thereof (e.g., partial saponification of rosin triglycerides; removal of color bodies from rosin esters, etc.)
217 ...Oxygen containing ring or halogen containing material used in the esterification, or product thereof (e.g., using alkylene oxides, polysaccharides, alkyl halides, etc.)
218 ...Polyhydroxy material used in the esterification, or product thereof (e.g., forming ester gum, etc.)
219 ..Sulfur, selenium, or tellurium containing material used in the process, or product thereof (e.g., disproportionation of rosin, etc.)
220 ...The sulfur, selenium, or tellurium containing material is inorganic
221 ..Nitrogen containing material used in the process, or product thereof
222 ...The nitrogen containing material is inorganic
223 ..Hydrogenation or product thereof (e.g., forming dihydro rosin acids; rosinyl alcohol or derivatives; etc.)
224 ..Metal containing material used to form salts of rosin acids, or product thereof
225 ...Alkali metal containing material (i.e., Li, Na, K, Rb or Cs)
226 ..Heat treatment of rosin or derivative in the absence of nonrosin organic reactants, or product thereof (e.g., forming rosin oil; disproportionated, dehydrogenated, or isomerized rosin; etc.)
227 ...Metal, halogen, or silicon containing material used in the process, or product thereof (e.g., using clay, zeolites, etc.)
228 ..Purification process or product thereof
229 ...Immiscible solvents used in the process, or product thereof
230 .Tall oil or derivative used as starting material in process, or product thereof (e.g., metal salts of tall oil fatty acids; tall oil pitch, etc.)
231 ..Nitrogen containing material used in the process, or product thereof
232 ..Esterification of tall oil acids, or product thereof
233 ..Sulfur, boron, phosphorus, or iodine containing material used in the process, or product thereof
300 PEPTIDES OF 3 TO 100 AMINO ACID RESIDUES
301 .Thymopoietin or Lipotropin; related peptides
302 .Endorphin and Enkephalin; related peptides
303 .Insulin; related peptides
304 ..Metal complexes, e.g., Zn-insulin, etc.
305 ..Isolation or purification
306 .Corticotropin (ATCH); related peptides
307 .Calcitonin; related peptides
308 .Glucagon; related peptides
309 .Secretin or gastrin; related peptides
310 .Gramicidin or Tyrocidin; related peptides
311 .Somatostatin (SRIF); related peptides
312 .Melanotropin (MSH) or eledoisin; related peptides

PEPTIDES OF 3 TO 100 AMINO ACID RESIDUES
313 .Lutenizing hormone releasing factor (LRF); related peptides
314 .Bradykinin; kallidin; related peptides
315 .Oxytocin; vasopressin; related peptides
316 .Angiotensin; related peptides
317 .Cyclic peptides
318 ..The cyclisation occurring through the 4-amino radical of 2,4-diamino-butanoic acid
319 ...Polymyxin; related peptides
320 ..Bacitracin; related peptides
321 ..Containing only normal peptide links in the ring, i.e., homodetic cyclic peptides
322 .Peptides containing saccharide radicals, e.g., bleomycins, etc.
323 .Peptides with at least one nonpeptide bond other than a disulfide bond joining two or more sequences of amino acid residues, e.g., homomeric heterodectic peptide other than cyclic disulfide, depsipeptides, etc.
324 .25 or more amino acid residues in defined sequence
325 .24 amino acid residues in defined sequence
326 .15 to 23 amino acid residues in defined sequence
327 .11 to 14 amino acid residues in defined sequence
328 .8 to 10 amino acid residues in defined sequence
329 .6 to 7 amino acid residues in defined sequence
330 .4 to 5 amino acid residues in defined sequence
331 .Tripeptides, e.g., tripeptide thyroliberin (TRH), melanostatin (MIF), etc.
332 .Containing at least one abnormal peptide link, e.g., gamma peptide bonded, etc.
333 .Synthesis of peptides
334 ..Polymer supported synthesis, e.g., solid phase synthesis, Merrifield synthesis, etc.
335 ..Protecting or removing protective groups, e.g., carboxyl group protection, etc.
336 ...Of side chain or sulfur containing group
337 ...Of amino group
338 ..Solution phase synthesis
339 ...Segment condensation, e.g., Ugi condensation, etc.
340 ...With phosphorus containing material
341 ...With use of carbonimide or imidiazole
342 ...Mixed anhydride synthesis
343 ..By hydrolysis
344 .Separation or purification
345 .Chemical aftertreatment, e.g., acylation, methylation, etc.
350 PROTEINS, I.E., MORE THAN 100 AMINO ACID RESIDUES
351 .Lymphokines, e.g., interferons, interlukins, etc.
352 .Phosphoproteins, e.g., phosvitin, vitellogenin, etc.
353 .Scleroproteins, e.g., fibroin, elastin, silk, etc.
354 ..Gelatin
355 ...Separation, purification or synthesis
356 ..Collagen
357 ..Keratin
358 .Nucleoproteins, e.g., chromatin, chromosomal proteins, histones, protamines, salmine, etc.
359 .Lipoproteins, e.g., egg yolk proteins, cylomicrons, etc.
360 .Casein or caseinate
361 ..Separation, purification or synthesis
362 .Albumin
363 ..Serum albumin, e.g., BSA, HSA, etc.
364 ...Separation, purification or synthesis
365 ..Lactalbumin, e.g., milk source, etc.
366 ...Separation, purification or synthesis
367 ..Ovalalbumin, e.g., avidin, conalbumins, etc.
368 ...Separation, purification or synthesis
369 ..Separation, purification or synthesis
370 .Plant proteins, e.g., derived from legumes, algae or lichens, etc.
371 ..Derived from fungi, e.g., yeasts, mushroom, etc.
372 ..Derived from grain, e.g., prolamines, etc.
373 ...Zein
374 ...Gluten or gliadin
375 ...Derived from wheat
376 ...Derived from corn
377 ..Derived from oil seed, e.g., cotton seed, rapeseed, sunflower, etc.
378 ...Derived from soybean
379 ..Derived from leafy green plants, e.g., alfalfa pollen, etc.
380 .Blood proteins or globulins, e.g., proteoglycans, platelet factor 4, thyroglobulin, thyroxine, etc.
381 ..Blood coagulation factors and fibrin, e.g., thromboplastin, etc.
382 ...Fibrin or fibrin intermediates, e.g., fibrinogen, etc.
383 ...Blood coagulation factor VIII, AHF
384 ...Blood coagulation factor II or factor II + VII + IX + X, i.e., prothrombin complex or factor
385 ..Hemoglobins or globins
386 ..Globulins
387 ...Immunoglobulins, antibodies, or binding proteins
388 ....Immunoglobulin or antibody fragments, e.g., Fab, Fc, Bence-Jones protein, etc.
389 ....After treatments including a chemical reaction
390 .....Sulfur containing reactant
391 .....Nitrogen containing reactant
392 ...Alpha globulins, e.g., ceruloplastin, haptoglobins, etc.
393 ....Antithrombin III
394 ...Beta globulins, e.g., transferrin, etc.
395 .Glycoprotein, e.g., mucins proteoglycans, etc.
396 ..Lectins, e.g., concanavalin, hemagglutinin, etc.
397 ..Glycoprotein hormones
398 ...Gonadatropins
399 .Hormones, e.g., prolactin, thymosin, growth factors, etc.
400 .Metal containing, e.g., chromoproteins, ferritin, ferredoxins, etc.
401 ..Cytochromes, e.g., chlorophyl, orgotein, etc.
402 .Chemical modification or the reaction product thereof, e.g., covalent attachment or coupling, etc.
403 ..Protein is identified as an antigen, e.g., immunogenic carriers, etc.
404 ...Sulfur containing reactant
405 ...Nitrogen containing reactant

	PROTEINS, I.E., MORE THAN 100 AMINO ACID RESIDUES
	.Chemical modification or the reaction product thereof, e.g., covalent attachment or coupling, etc.
	..Protein is identified as an antigen, e.g., immunogenic carriers, etc.
406	...Oxygen containing reactant
407	..Hydrolysis of protein
408	..Sulfur containing reactant
409	..Nitrogen containing reactant
410	..Oxygen containing reactant
411	...Oxygen containing is saccharide
412	.Separation or purification
413	..Immunological separation or affinity chromatography
414	..Ultra filtration or osmosis
415	..Selective absorbtion, e.g., Ca phosphate sorbents, etc.
416	...Ion exchange
417	...Chromatography or by septum selective as to material, e.g., gel filtration, molecular sieve dialysis, etc.
418	..Precipitation
419	...With added material
420	....Inorganic
421	....Polymeric, e.g., polyethylene glycol, etc.
422	..Solvent extraction
423	...Oxygenated material
424	....Alcohol
425	....Carboxyl containing
426	...Hydrocarbon or halogenated hydrocarbon
427	..Physical treatment
500	LIGNINS OR DERIVATIVES
501	.Aldehyde, ketone or ozone reacted with a lignin or lignin containing substance, or product thereof
502	.Compound which includes phenolic hydroxy or oxygen containing hetero ring reacted with a lignin or lignin containing substance, or product thereof
503	.Hydrogenation of a lignin or lignin containing substance, or product thereof
504	.Carboxylic acid anhydride, or a compound having halogen bonded directly to acyclic carbon by nonionic bonding, reacted with a lignin or lignin containing substance, or product thereof
505	.Compound containing nitrogen attached directly or indirectly to carbon by nonionic bonding reacted with a lignin or lignin containing substance, or product therof
506	.Heavy metal, aluminum, silicon or phosphorus containing
507	.Processes utilizing an organic solvent or a compound having alcoholic hydroxy bonded directly to an acyclic carbon, or product thereof
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	CROSS-REFERENCE ART COLLECTIONS
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800	ANTIHYPERTENSIVE PEPTIDES
801	PEPTIDE SWEETNERS
802	CHROMOGENIC OR LUMINESCENT PEPTIDES
806	ANTIGENIC PEPTIDES OR PROTEINS
807	HAPTEN CONJUGATED WITH PEPTIDE OR PROTEIN
808	MATERIALS AND PRODUCTS RELATED TO GENETIC ENGINEERING OR HYBRID OR FUSED CELL TECHNOLOGY, E.G., HYBRIDOMA, MONOCLONAL PRODUCTS, ETC.
809	.Fused cells, e.g., hybridoma, etc.
810	CARRIER - BOUND OR IMMOBILIZED PEPTIDES OR PROTEINS AND THE PREPARATION THEREOF, E.G., BIOLOGICAL CELL OR CELL FRAGMENT AS CARRIER, ETC.
811	.Peptides or proteins is immobilized on, or in, an inorganic carrier
812	.Peptides or proteins is immobilized on, or in, an organic carrier
813	..Carrier is a saccharide
814	...Cellulose or derivatives thereof
815	..Carrier is a synthetic polymer
816	...Attached to the carrier via a bridging agent
817	...Entrapped within the carrier, e.g., gel, hollow fibre, etc.
820	PROTEINS FROM MICRO-ORGANISMS
821	.Separation of nucleic acid
822	.Protozoa
823	.Lower fungi, e.g., mold, etc.
824	..Yeasts
825	.Bacteria
826	.Viruses
827	PROTEINS FROM MAMMALS OR BIRDS
828	.Cancer
829	.Blood
830	..Plasma; serum
831	...Cohn fractions
832	.Milk; colostrum
833	.Whey; cheese
834	.Urine; urinary system
835	..Kidney
836	.Mucus; mucous glands; bursa; arthral fluid; spinal fluid
837	.Lymph; lymph-glands; thymus
838	.Marrow; spleen
839	.Nerves; brain
840	.Bones; tendons; teeth; cartilage
841	.Muscles; heart
842	.Skin; hair; nails; sebaceous glands; cerumen
843	.Digestive system
844	..Stomach; intestine
845	..Pancreas
846	..Liver
847	..Bile
848	..Lungs
849	.Eyes; vessels; umbilical cord
850	.Reproductive organs or embryos
851	..Placenta; amniotic fluid
852	..Sperm
853	...Ovary; eggs; embryos
854	.Glands
855	PROTEINS FROM ANIMALS OTHER THAN MAMMALS OR BIRDS
856	.Snakes; venom
857	.Fish; fish eggs; shell fish; crustacea
858	.Insects; venom
859	WASTE, WASTE MATERIAL, REFUSE OR SLUDGE, E.G., EFFLUENTS, FECAL MATTER, ETC.

CLASS 532 PART OF THE CLASS 532 - 570 SERIES -- ORGANIC COMPOUNDS

1 ORGANIC COMPOUNDS
(This subclass presently has no patents. It is intended to be the generic subclass for the 532-570 series of class when Class 260 is abolished. It does have a glossary of terms used in that serie).

CLASS 534 PART OF THE CLASS 532-570 SERIES -- ORGANIC COMPOUNDS

DECEMBER 1990

IN THIS SERIES OF CLASSES, CLASS 534 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (CLASS 532, SUBCLASS 1)

7 .Noble gas containing (i.e., He, Ne, Ar, Kr, Xe, or Rn containing)

10 .RADIOACTIVE METAL CONTAINING (At. No. 43, 61 or 84+; or radioactive isotope of another metal)

11 ..Actinide series metal (At. No. 89+)

12 ...Containing -C(=X)-, wherein X is chalcogen (e.g., carbonyl containing, etc.)

13 ....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

14 ..Technetium containing (At. No. 43; Tc)

15 .RARE EARTH METAL CONTAINING (At. No. 21, 39, 57-60 or 62-71)

16 ..Containing -C(=X)X-, wherein the X's are the same or diverse chalcogens

550 .Diazoamino (e.g., triazenes, etc.)

551 ..Hetero ring containing

552 ..Chalcogen or additional nitrogen bonded directly to the diazoamino group

553 ..Noncarbon atom double or triple bonded and the diazoamino group bonded directly to the same acyclic carbon

554 ..Plural benzene rings bonded directly to the diazoamino group

555 ..Processes

556 .Diazooxide or diazotate (e.g., -N=N-O-, etc.)

557 ..Sulfur attached directly to a ring by nonionic bonding

558 .Diazo or diazonium (e.g., -N=N-C, etc.)

559 ..With preservative or stabilizer

560 ..Hetero ring containing

561 ..Plural diazo or diazonium groups

562 ..Heavy metal or aluminum containing

563 ..Polycyclo ring system having at least three cyclos

564 ..Aldehyde or ketone group containing

565 ..Formation of diazonium group

566 .Azoxy

567 ..Hetero ring containing

568 ..Azodioxy

569 ..Heavy metal or aluminum containing

570 ..Sulfonic acid group containing (-(O=)S(=O)-OH, wherein H of -OH may be replaced by a substituted or unsubstituted ammonium ion or metal)

571 ...Stilbene containing

572 ..Formation of azoxy group

573 .Azo

574 ..Quaternary azo group containing

575 ..Specified crystalline form

576 ..With preservative or stabilizer

577 ..Liquid crystal (e.g., pleochroic, etc.)

578 ..Formation of azo group by oxidative coupling

579 ..Formation of azo group by simultaneous diazotization and coupling

580 ..Formation of azo group from diazoamino group

581 ..Formation of azo group by coupling diazonium compound with coupling component in presence of an additional organic compound

582 ..Formation of azo group by coupling diazonium compound with coupling component at a specified pH range

583 ..Formation of azo group by coupling diazonium compound with coupling component in presence of ammonia, a Group IIA light metal hydroxide or a Group IA or IIA light metal phosphate

584 ..Formation of azo group by coupling diazonium compound with coupling component in other than stoichiometric proportions

585 ..Formation of azo group by reduction of nitro group

586 ..Formation of azo group from group having nitrogen single bonded to nitrogen

587 ..Formation of azo group directly from nitrogen containing compound by process other than diazotization and coupling

588 ..Process utilizing azo compound as reactant

589 ...Formation of quaternary ammonium or hydrazinium group

590 ...Ring formation

591 ...Formation of -C(=X)HNH group, wherein X is chalcogen (substitution may be made for hydrogen only)

592 ...Formation of sulfonamide group

593 ...Additional reactant containing phosphorus or sulfur

594 ....Sulfonic acid group formed or added to the azo reactant (-(O=)S(=O)-OH, wherein H of -OH may be replaced by a substituted or unsubstituted ammonium ion or metal)

595 ...Formation of -C(=X)X- ester group, wherein the X's may be the same or diverse chalcogens

596 ...Etherification of hydroxy group

597 ...Replacement of halogen by cyano group

598 ...Replacement of halogen by amino nitrogen

599 ...Hydrolysis

600 ...Reduction of nitro or nitrogen oxide group

601 ...Nitration

602 ...Metallization of the azo reactant in presence of an additional organic compound

603 ..Quaternary ammonium or hydrazinium attached indirectly to an azo group by nonionic bonding

604 ...Hetero ring containing

605 ....The pentavalent nitrogen is a ring member

606 .....Azo bonded directly to a hetero ring or to a polycyclo ring system having a hetero ring as one of the cyclos

607 ......The hetero ring contains the pentavalent nitrogen

608 ....Plural azo groups in the same azo moiety attached indirectly to each other by nonionic bonding

609 ....Acyclic carbon bonded directly to the azo group

610 ....Additional hetero ring or polycyclo ring system having a hetero ring as one of the cyclos bonded directly to the azo group

ORGANIC COMPOUNDS (CLASS 532, SUBCLASS 1)
.Azo
..Quaternary ammonium or hydrazinium attached indirectly to an azo group by nonionic bonding
...Hetero ring containing
....The pentavalent nitrogen is a ring member
.....Azo bonded directly to a hetero ring or to a polycyclo ring system having a hetero ring as one of the cyclos
......The hetero ring contains the pentavalent nitrogen
611 ....The hetero ring is one of the cyclos in a polycyclo ring system
612 .....Acyclic -C(=X)-, wherein X is chalcogen, attached directly or indirectly to the hetero ring by nonionic bonding
613 ...Heavy metal or aluminum containing
614 ...Plural azo groups attached indirectly to each other by nonionic bonding
615 ...Plural nitrogens bonded directly to the same alkylene chain (e.g., diamino alkylene, etc.)
616 ..Nitrogen oxide, other than as nitro or nitroso, containing
617 ..Fiber- or substrate-reactive azo compound
618 ...Formazan containing (i.e., HNH-N=CH-N=NH, wherein substitution may be made for hydrogen only)
619 ...Heavy metal or aluminum containing
620 ....Halogen attached directly to a hetero ring or to an alicyclic ring by nonionic bonding
621 .....Stilbene containing
622 .....The hetero ring is six-membered and contains at least two nitrogens
623 ......Diverse azo moieties bonded to the same metal
624 ......At least two such hetero rings attached indirectly to each other by nonionic bonding
625 ......Plural azo groups in the same azo moiety attached indirectly to each other by nonionic bonding
626 ......Chalcogen or carbon bonded directly to the six-membered hetero ring and is between the hetero ring and the azo group
627 ......Plural halogens attached directly to the hetero ring by nonionic bonding
628 ......Diverse hetero ring containing
629 ....Alkylene, alkenyl or alkenylene bonded directly to sulfonyl or sulfonamide, which sulfonyl or sulfonamide is between a ring and the alkylene, alkenyl or alkenylene
630 ...Halogen attached directly to a hetero ring or to an alicyclic ring by nonionic bonding
631 ....Stilbene containing
632 ....The hetero ring is six-membered and contains at least two nitrogens
633 .....Polycyclo ring system having the hetero ring as one of the cyclos
634 .....At least two such hetero rings attached indirectly to each other by nonionic bonding
635 .....Additional hetero ring containing
636 ......Pyrazole containing (including hydrogenated)
637 .....Plural azo groups attached indirectly to each other by nonionic bonding
638 .....The hetero ring and benzene ring, to which an azo group is bonded directly, bonded directly to the same nitrogen
639 ...Aziridine containing (including unsaturated)
640 ...Alkylene, alkenyl, alkenylene, alkynyl or alkynylene attached directly or indirectlyto a ring by nonionic bonding
641 ....Alkylene, alkenyl or alkenylene bonded directly to sulfonyl or sulfonamido, which sulfonyl or sulfonamido is between a ring and the alkylene, alkenyl or alkenylene
642 .....The alkylene, alkenyl or alkenylene and the ring are both bonded directly to the same sulfonyl group
643 ....Alkylene, alkenyl or alkenylene bonded directly to carboxamido, urea or -C(=X)-, wherein X is chalcogen, which group is between a ring and the alkylene, alkenyl or alkenylene
644 ....Alkylene, alkenyl or alkenylene and a ring bonded directly to the same chalcogen or to plural chalcogens which are bonded directly to each other
645 ..Plural sulfonyl groups bonded directly to same amino nitrogen (e.g., sulfonylaminosulfonyl, etc.)
646 ..Sulfonyl and carbonyl bonded directly to the same amino nitrogen (e.g., sulfonylaminocarbonyl, etc.)
647 ..Plural amino nitrogens bonded directly to the same sulfonyl (e.g., aminosulfonylamino, etc.)
648 ..Alkyl, having at least eight carbons specified, or plural alkyl chains, each having at least five carbons specified, bonded directly to a ring, which ring is attached directly or indirectly to an acyclic carbon chain, which chain is bonded directly to a urea or carboxamide nitrogen that is between the chain and an additional ring
649 ..Alkyl chain having at least eight carbons specified bonded directly to a ring
650 ..Sulfonyl or -C(=X)-, wherein X is chalcogen, between a ring and an alkyl chain having at least eight carbons specified
651 ...The sulfonyl or -C(=X)- is bonded directly to the ring
652 ..Formazan containing (i.e., HNH-N=CH-N=NH, wherein substitution may be made for hydrogen only)
653 ..Polycyclo carbocyclic ring system having at least three cyclos
654 ...The polycyclo ring system consists of three six-membered cyclos and has plural oxygens bonded directly thereto
655 ....Hetero ring containing
656 ....At least two such ring systems having plural oxygens bonded directly thereto
657 ...The polycyclo ring system has no azo group bonded directly thereto

ORGANIC COMPOUNDS (CLASS 532, SUBCLASS 1)
.Azo
..Polycyclo carbocyclic ring system having at least three cyclos
658 ...Chalcogen double bonded directly to the polycyclo ring system
659 ..Bicyclo carbocyclic ring system consisting of a six-membered ring and a five-membered ring (e.g., indane, etc.
660 ..Hydroxy and carbonyl of -COO- bonded directly to a monocyclic benzene ring (H or hydroxy may be replaced by a substituted or unsubstituted ammonium ion or a metal)
661 ...Heavy metal or aluminum containing
662 ....Hetero ring containing
663 ....Plural azo groups in the same azo moiety attached indirectly to each other by nonionic bonding
664 ...Hetero ring containing
665 ....Azo bonded directly to the hetero ring or to a polycyclo ring system which contains the hetero ring as one of the cyclos
666 ...At least three azo groups attached indirectly to each other by nonionic bonding
667 ....Plural monocyclic benzene rings, each having hydroxy and carbonyl of -COO- bonded directly thereto
668 ....Additional monocyclic benzene ring having plural hydroxy groups, hydroxy and nitrogen, or plural nitrogens bonded directly thereto, wherein the nitrogen is other than as nitro, nitroso or azo
669 ....Additional -C(=X)-, wherein X is chalcogen
670 ...Two azo groups attached indirectly to each other by nonionic bonding
671 ....Sulfonic acid group containing (-(O=)S(=O)-OH, wherein H of -OH may be replaced by a substituted or unsubstituted ammonium ion or metal)
672 .....Plural monocyclic benzene rings, each having hydroxy and carbonyl of -COO- bonded directly thereto
673 .....Additional -C(=X)-, wherein X is chalcogen
674 ...Sulfonic acid group containing (-(O=)S(=O)-OH, wherein H of -OH may be replaced by a substituted or unsubstituted ammonium ion or metal)
675 ....Azo attached indirectly to the monocyclic benzene ring by nonionic bonding
676 ..Plural -HNH groups or -OH and -HNH bonded directly to a monocyclic benzene ring (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or metal)
677 ...Plural azo groups in the same azo moiety attached indirectly to each other by nonionic bonding
678 ....Sulfonic acid group containing (-(O=)S(=O)-OH, wherein H of -OH may be replaced by a substituted or unsubstituted ammonium ion or metal)
679 .....Plural monocyclic benzene rings, each having -OH and -HNH or plural -HNH groups bonded directly thereto
680 .....Exactly three azo groups attached indirectly to each other by nonionic bonding
681 ...Sulfonic acid group containing (-(O=)S(=O)-OH, wherein H of -OH may be replaced by a substituted or unsubstituted ammonium ion or metal)
682 ..Plural hydroxy groups or esters thereof bonded directly to a monocyclic benzene ring (H of hydroxy may be replaced by a substituted or unsubstituted ammonium ion or metal)
683 ...Azo bonded directly to the benzene ring
684 ....Heavy metal or aluminum containing
685 ....At least three azo groups attached indirectly to each other by nonionic bonding
686 .....Hetero ring containing
687 .....Plural monocyclic benzene rings, each having plural hydroxy groups or esters thereof bonded directly thereto
688 ....Two azo groups attached indirectly to each other by nonionic bonding
689 ..Stilbene containing
690 ...Heavy metal or aluminum containing
691 ...Hetero ring containing
692 ..Heavy metal or aluminum containing
693 ...Amine salt
694 ...Arsenic containing
695 ...Azo moiety and moiety which contains acyclic -CH=N- group bonded to the same metal
696 ...Diverse azo moieties bonded to the same metal
697 ....Hetero ring containing
698 .....Hetero ring in each azo moiety
699 ....Plural azo groups in the same azo moiety attached indirectly to each other by nonionic bonding
700 ...Azo bonded directly to an acyclic carbon which is bonded directly to two acyclic carbons, each of which is double or triple bonded to an atom
701 ...Hetero ring containing
702 ....Polycyclo ring system containing the hetero ring as one of the cyclos
703 .....Azo bonded directly to the polycyclo ring system
704 ......The azo group is attached indirectly in the same azo moiety to an additional azo group or to an acyclic chain which contains a -CH=N- group by nonionic bonding
705 ......Plural ring nitrogens in the polycyclo ring system
706 ......Quinoline or isoquinoline containing (including hydrogenated)
707 ....Azo bonded directly to the hetero ring
708 .....At least three azo groups in the same azo moiety attached indirectly to each other by nonionic bonding
709 .....Two azo groups in the same azo moiety attached indirectly to each other by nonionic bonding
710 .....Pyrazole (including hydrogenated)
711 ......Sulfonyl bonded directly to a ring
712 ....Additional chalcogen bonded directly to the sulfonyl
713 ...Benzene ring containing

ORGANIC COMPOUNDS (CLASS 532, SUBCLASS 1)
.Azo
..Heavy metal or aluminum containing
...Benzene ring containing
714 ....At least three azo groups in the same azo moiety attached indirectly to each other by nonionic bonding
715 .....Plural monocyclic benzene rings attached directly to each other by nonionic bonding and are between azo groups
716 ....Two azo groups in the same azo moiety attached indirectly to each other by nonionic bonding
717 .....Containing -C(=X)-, wherein X is chalcogen (e.g., carbonyl, etc.)
718 ......Plural monocyclic benzene rings attached directly or indirectly to each other by acyclic nonionic bonding and are between the azo groups
719 .....Plural monocyclic benzene rings attached directly or indirectly to each other by acyclic nonionic bonding and are between the azo groups
720 ....Containing -C(=X)-, wherein X is chalcogen (e.g., carbonyl, etc.)
721 .....Nitrogen bonded directly to the -C(=X)- group (e.g., carboxamide, etc.)
722 ....Plural bicyclo carbocyclic ring systems bonded directly to the azo group
723 ....Sulfonyl bonded directly to amino nitrogen (e.g., sulfonamide, etc.)
724 ....Sulfonic acid group containing (-(O=)S(=O)-OH, wherein H of -OH may be replaced by the ammonium ion or a metal)
725 .....Amino nitrogen containing
726 ..Boron or silicon containing
727 ..Phosphorus attached indirectly to an azo group by nonionic bonding
728 ..Amine salt
729 ..Chain containing at least fifteen alkylene oxide groups
730 ..Sulfonic acid ester group containing
731 ...Hetero ring containing
732 ..Nitrogen, other than as azo, and chalcogen or -C(=X)X- bonded directly to a -C(=X)- group, wherein the X's may be the same or diverse chalcogens (e.g., carbamic, allophanic, etc.)
733 ...Hetero ring cntaining
734 ..Halogen bonded directly to sulfur or to a -C(=X)- group, wherein X is chalcogen
735 ..Containing acyclic -XCN or -NCX, wherein X is chalcogen (e.g., thiocyanato, isocyanato, etc.)
736 ..Thiosulfuric acid group containing (-S-(O=)S(=O)-OH, wherein H of the -OH may be replaced by the ammonium ion or Group IA or IIA light metal)
737 ..Cyano and carbon bonded directly to acyclic nitrogen
738 ..Acyclic chain which contains -CH=N- (substitution may be made for hydrogen only)
739 ..Azo bonded directly to an acylic carbon which is bonded directly to two acyclic carbons, each of which is double or triple bonded to an atom
740 ...Hetero ring or polycyclo ring system which contains a hetero ring as one of the cyclos bonded directly to an azo group
741 ...Hetero ring attached indirectly to an azo group by nonionic bonding
742 ....The acyclic carbon, to which the other two acyclic carbons are bonded, is between the hetero ring and the azo group
743 ...At least three azo groups attached indirectly to each other by nonionic bonding
744 ...Two azo groups attached indirectly to each other by nonionic bonding
745 ....Each azo group is bonded directly to an acyclic carbon which is bonded directly to two acyclic carbons, each of which is double or triple bonded to an atom
746 .....Plural benzene rings bonded directly to each other and are between the azo groups
747 ......Each benzene ring is bonded directly to an azo group
748 .....Plural amino nitrogens bonded directly to a benzene ring which is between the azo groups
749 ...Sulfonyl bonded directly to nitrogen
750 ...Having -C(=X)-, wherein X is chalcogen, attached indirectly by nonionic bonding to the acyclic carbon to which the other two acyclic carbons are bonded
751 ..Hetero ring containing
752 ...Polycyclo ring system having a hetero atom shared by at least two rings or at least two hetero atoms which are not members of the same ring
753 ...Azo bonded directly to the hetero ring or to a polycyclo ring system which contains the hetero ring as one of the cyclos
754 ....At least three azo groups attached indirectly to each other by nonionic bonding
755 .....Additional hetero ring or polycyclo ring system which contains a hetero ring as one of the cyclos bonded directly to an azo group
756 ....Two azo groups attached indirectly to each other by nonionic bonding
757 .....Additional hetero ring or polycyclo ring system which contains a hetero ring as one of the cyclos bonded directly to an azo group
758 ......Both hetero rings or polycyclo ring systems are between the azo groups
759 ......Plural monocyclic benzene rings, each bonded directly to an azo group, are between the azo groups
760 ....The benzene rings are bonded directly to each other
761 .....Both azo groups are bonded directly to the hetero ring or to the polycyclo ring system
762 .....Polycyclo ring system having at least three cyclos, at least one of which is a hetero ring
763 .....Bicyclo carbocyclic ring system
764 .....Additional ring bonded directly to the hetero ring or to the polycyclo ring system

ORGANIC COMPOUNDS (CLASS 532, SUBCLASS 1)
.Azo
..Hetero ring containing
...Azo bonded directly to the hetero ring or to a polycyclo ring system which contains the hetero ring as one of the cyclos
765 ....Additional hetero ring or polycyclo ring system which contains a hetero ring as one of the cyclos bonded directly to the azo group
766 .....The hetero ring is six-membered and contains nitrogen (e.g., pyridine, etc.)
767 ......The hetero ring contains at least two nitrogens (e.g., pyrimidine, etc.)
768 ......The hetero ring is in a bicyclo ring system (e.g., quinoline, benzomorpholine, etc.)
769 .....Pyrazole (including hydrogenated)
770 ....The hetero ring is six-membered and consists of one nitrogen and five carbons (e.g., pyridine, etc.)
771 .....Acyclic oxygen bonded directly to the hetero ring
772 ......Plural acyclic chalcogens bonded directly to the hetero ring at the two positions adjacent to the ring nitrogen
773 .....Plural acyclic nitrogens, other than as nitro, nitroso or azo, bonded directly to the hetero ring at the two positions adjacent to the ring nitrogen
774 ....Additional hetero ring attached indirectly to the azo group by nonionic bonding
775 .....The additional hetero ring or a polycyclo ring system which contains the additional hetero ring as one of the cyclos is bonded directly to a ring, which ring is between the azo group and the additional hetero ring
776 .....A ring and the additional hetero ring or a polycyclo ring system which contains the additional hetero ring as one of the cyclos are bonded directly to the same nitrogen
777 .....The additional hetero ring or a polycyclo ring system which contains the additional hetero ring as one of the cyclos is bonded directly to an alkylene chain, which chain is between the azo group and the additional hetero ring
778 ....Bicyclo carbocyclic ring system bonded directly to the azo group
779 .....The bicyclo carbocyclic ring system is between the azo group and an additional carbocyclic ring
780 .....Sulfonic acid group containing (-(O=)S(=O)-OH, wherein H of the -OH may be replaced by the ammonium ion or Group IA or IIA light metal)
781 ....Sulfonic acid group containing (-(O=)S(=O)-OH, wherein H of the -OH may be replaced by the ammonium ion or a Group IA or IIA light metal)
782 .....The hetero ring is one of the cyclos in a polycyclo ring system
783 .....Additional sulfonyl containing
784 ......Plural sulfonic acid groups
785 .....Containing acyclic -C(=X)-, wherein X is chalcogen
786 ......The -C(=X)- is bonded directly to nitrogen
787 ....The hetero ring is one of the cyclos in a polycyclo ring system
788 .....The hetero ring consists of sulfur, nitrogen and carbon (e.g., benzothiazole, etc.)
789 .....Chalcogen double bonded directly to the hetero ring
790 .....The hetero ring is five-membered and consists of one nitrogen and four carbons (e.g., indole, etc.)
791 ....Carbocyclic ring bonded directly to the hetero ring or to the polycyclo ring system which contains the hetero ring
792 .....Pyrazole containing (including hydrogenated)
793 ......Sulfonyl containing
794 ....Carbocyclic ring attached indirectly to the azo group by nonionic bonding
795 ....The hetero ring is five-membered and contains at least one atom each of sulfur, nitrogen and carbon
796 ...At least three azo groups attached indirectly to each other by nonionic bonding
797 ...Two azo groups attached indirectly to each other by nonionic bonding
798 ...Plural carbocyclic rings bonded directly to the azo group
799 ....The hetero ring or a polycyclo ring system which contains the hetero ring as one of the cyclos is bonded directly to one of the carbocyclic rings or to a bicyclo ring system which contains the carbocyclic ring as one of the cyclos
800 .....The hetero ring is one of the cyclos in a polycyclo ring system
801 ....The carbocyclic ring or a bicyclo ring system which contains the carbocyclic ring as one of the cyclos and the hetero ring or a polycyclo ring system which contains the hetero ring as one of the cyclos are bonded directly to the same carboxamide group
802 ....The carbocyclic ring or a bicyclo ring system which contains the carbocyclic ring as one of the cyclos and the hetero ring or a polycyclo ring system which contains the hetero ring as one of the cyclos are bonded directly to the same nitrogen atom
803 .....The hetero ring is six-membered and contains at least two nitrogens
804 ....The hetero ring or a polycyclo ring system which contains the hetero ring as one of the cyclos is bonded directly to an alkylene chain, which chain is between the hetero ring and the carbocyclic ring
805 ..Exactly five or exactly six azo groups attached indirectly to each other by nonionic bonding
806 ..Exactly four azo groups attached indirectly to each other by nonionic bonding

ORGANIC COMPOUNDS (CLASS 532, SUBCLASS 1)

.Azo

..Exactly four azo groups attached indirectly to each other by nonionic bonding

807 ...Plural nitrogens bonded directly to the same -C(=X)- group, wherein X is chalcogen (e.g., urea, thiourea, etc.)

808 ...Benzidine containing

809 ..Exactly three azo groups attached indirectly to each other by nonionic bonding

810 ...Containing -C(=X)-, wherein X, is chalcogen or nitrogen (e.g., carbonyl, etc.)

811 ....Nitrogen single bonded directly to the -C(=X)- group (e.g., carboxamide, guanyl, etc.)

812 .....Plural -C(=X)- groups containing

813 ...Benzidine containing

814 ....Hydroxy and nitrogen, other than as nitro, nitroso or azo, bonded directly to the same bicyclo ring system (H of hydroxy may be replaced by the ammonium ion or a Group IA or IIA light metal)

815 ...Hydroxy bonded directly to a bicyclo ring system (H of hydroxy may be replaced by the ammonium ion or a Group IA or IIA light metal)

816 ..Exactly two azo groups attached indirectly to each other by nonionic bonding

817 ...Plural benzene rings bonded directly to the same urea or thiourea group and are between the azo groups

818 ....Bicyclo ring system containing

819 ...Plural benzene rings bonded directly to the same carboxamide or sulfonamide group and are between the azo groups

820 ....Plural carboxamide groups between the azo groups

821 ...Plural benzene rings bonded directly to the same chalcogen or -C(=X)- group, wherein X is chalcogen, and are between the azo groups

822 ...Plural benzene rings bonded directly to each other and are between the azo groups

823 ....Containing -C(=X)-, wherein X is chalcogen (e.g., carbonyl, etc.)

824 ....Nitrogen, other than as nitro, nitroso or azo, attached indirectly to azo by nonionic bonding

825 .....Plural nitrogens, other than as nitro, nitroso or azo, attached indirectly to azo by nonionic bonding

826 ......Plural sulfonic acid groups bonded directly to the same bicyclo ring system (-(O=)S(=O)-OH, wherein H of the -OH may be replaced by the ammonium ion or a Group IA or IIA light metal)

827 ...Hydroxy bonded directly to a bicyclo ring system which is between the azo groups (H of hydroxy may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)

828 ....Plural bicyclo ring systems, each having hydroxy bonded directly thereto

829 ...Containing -C(=X)-, wherein X is chalcogen (e.g., carbonyl, etc.)

830 ....Hydroxy and the -C(=X)- are bonded directly to the same bicyclo ring system (H of hydroxy may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)

831 ...Plural benzene rings bonded directly to each azo group

832 ....At least one of the benzene rings is part of a bicyclo ring system

833 .....Each of the benzene rings is part of a bicyclo ring system

834 .....Hydroxy bonded directly to the bicyclo ring system (H of hydroxy may be replaced by the ammonium ion or a Group IA or IIA light metal)

835 ......Plural bicyclo ring systems, each having hydroxy bonded directly thereto

836 ......Additional hydroxy or nitrogen, other than as nitro, nitroso or azo, bonded directly to the bicyclo ring system

837 ......Sulfonic acid group bonded directly to the bicyclo ring system (-(O=)S(=O)-OH, wherein H of the -OH may be replaced by the ammonium ion or a Group IA or IIA light metal)

838 ..Exactly one azo group containing or azo attached indirectly to an additional azo group by ionic bonding

839 ...Plural benzene rings bonded directly to the azo group

840 ....Each of the benzene rings is part of a bicyclo ring system

841 .....Containing -C(=X)-, wherein X is chalcogen (e.g., carbonyl, etc.)

842 .....Hydroxy bonded directly at the 2-position of the bicyclo ring system (H of hydroxy may be replaced by the ammonium ion or a Group IA or IIA light metal)

843 ....Each of the benzene rings is monocyclic

844 .....Sulfonyl containing

845 ......Oxygen bonded directly to the sulfonyl group (e.g., sulfonic acid, etc.)

846 ....Plural oxygens bonded directly to the sulfonyl group (e.g., sulfuric acid, etc.)

847 ......The sulfonyl is part of a sulfonamide group (-(O=)S(=O)HNH, wherein substitution may be made for hydrogen only)

848 ......Containing -C(=X)-, wherein X is chalcogen

849 ....The -C(=X)- is bonded directly to nitrogen, which nitrogen is bonded directly to a ring

850 .....Containing -C(=X)-, wherein X is chalcogen

851 ......The -C(=X)- is bonded directly to one of the benezene rings

852 ......The -C(=X)- is in a -C(=X)X- group, wherein the X's may be the same or diverse chalcogens

853 ....The -C(=X)X- is in a -COOH group (H of OH may be replaced by the ammonium ion or a Group IA or IIA light metal)

ORGANIC COMPOUNDS (CLASS 532, SUBCLASS 1)
.Azo
..Exactly one azo group containing or azo attached indirectly to an additional azo group by ionic bonding
...Plural benzene rings bonded directly to the azo group
....Each of the benzene rings is monocyclic
.....Containing -C(=X)-, wherein X is chalcogen
......The -C(=X)- is in a -C(=X)X- group, wherein the X's may be the same or diverse chalcogens
854 ....Additional -C(=X)- bonded directly to nitrogen, which nitrogen is bonded directly to a ring
855 ......Chalcogen, having no direct bond to a ring, attached directly by a single bond to acyclic carbon
856 .....Nitrogen, other than as nitro or nitroso, attached indirectly to the azo group by nonionic bonding
857 ......Hydroxy bonded directly to acyclic carbon or carbon chain (H of hydroxy may be replaced by the ammonium ion or Group IA or IIA light metal)
858 ....Plural chalcogens bonded directly to the acyclic carbon or carbon chain
859 ......Chalcogen bonded directly to a ring
860 ....Acyclic -C(=X)- containing, wherein X is chalcogen (e.g., carbonyl, etc.)
861 .....Hydroxy bonded directly to a bicyclo ring system (H of hydroxy may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
862 ......Nitrogen bonded directly to the -C(=X)- group (e.g., carboxamide, etc.)
863 ....The -C(=X)- is bonded directly to the bicyclo ring system
864 ....Sulfonyl containing
865 ....Additional acyclic -C(=X)- group
866 ....Additional nitrogen bonded directly to the additional -C(=X)- group
867 ....At least three -C(=X)HNH groups, wherein substitution may be made for hydrogen only
868 ....Additional amino nitrogen
869 ....Plural oxygens bonded directly to the same monocyclic benzene ring
870 ....Halogen, acyclic carbon, the azo group and an additional halogen or acyclic carbon, all bonded directly to the same benzene ring
871 ....Acyclic carbon, carboxamide and chalcogen or an additional acyclic carbon, all bonded directly to the same benzene ring
872 ....The nitrogen is additionally bonded directly to the bicyclo ring system
873 ....Additional acyclic -C(=X)- group
874 ......The -C(=X)- is bonded directly to the bicyclo ring system
875 ....Nitrogen, other than as nitro or nitroso, attached indirectly to the azo group by nonionic bonding
876 .....Oxygen bonded directly to carbon
877 ......The nitrogen and the oxygen are bonded directly to the same bicyclo ring system
878 ....Sulfonyl bonded directly to the bicyclo ring system
879 ....Plural sulfonyl groups or plural nitrogens bonded directly to the bicyclo ring system
880 ....Additional sulfonyl which is attached indirectly to the bicyclo ring system by nonionic bonding
881 .....Sulfonyl and the nitrogen bonded directly to the same bicyclo ring system
882 ....Oxygen double bonded directly to sulfur
883 .....Sulfonyl bonded directly to a bicyclo ring system
884 ......Plural sulfonyl groups bonded directly to the same bicyclo ring system
885 ...Benzene ring bonded directly to the azo group
886 ...Containing -C(=X)-, wherein X is chalcogen (e.g., carbonyl, etc.)
887 ..Purification or recovery

IN THIS SERIES OF CLASSES, CLASS 536 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (Class 532, Subclass 1)
1.1 .CARBOHYDRATES OR DERIVATIVES
2 ..Pectin or derivative
3 ..Algin or derivative
4.1 ..O- or S- Glycosides
4.4 ...Aescin or derivative
5 ...Cyclopentanohydrophenanthrene ring system
6 ....Oxygen containing six-membered hetero ring (e.g., oxathiane, etc.)
6.1 ....Oxygen containing five-membered hetero ring
6.2 .....Nitrogen, phosphorus or halogen containing
6.3 .....Processes of extracting from plant materials
6.4 ...Daunomycin or derivative
6.5 ...Oxygen containing hetero ring having at least twenty members (e.g., amphotericin, nystatin, pimaricin, etc.)
7.1 ...Oxygen containing hetero ring having 12-19 members (e.g., methymycin, carbomycin, spiramycin, etc.)
7.2 ....Erythromycin or derivative (e.g., oleandomycin, etc.)
7.3 .....Boron, phosphorus or sulfur containing
7.4 .....Additional nitrogen containing
7.5 .....Purification or recovery
8 ...Flavon sugar compounds
8.8 ...Coumermycin or derivative
13 ...Novobiocin or derivative
13.1 ...Antibiotic BM 123 or derivative
13.2 ...Neomycin B or neomycin C, or derivative
13.3 ...Paromomycin or derivative (e.g., neomycin E, etc.)
13.4 ...Antibiotic XK or derivative
13.5 ...Butirosin or derivative (e.g., ambutyrosin, etc.)
13.6 ...Gentamicin or derivative
13.7 ...Kanamycin or derivative
13.8 ....Carbonyl bonded directly to kanamycin nitrogen
13.9 ...Sisomicin or derivative
14 ...Streptomycin or derivative
15 ....Dihydrostreptomycin or derivative
16 ....Addition compounds
16.1 ...Fortimicin or derivative
16.2 ...Lincomycin or derivative
16.3 ....Cyano or -COO- containing
16.4 ....Additional sulfur containing
16.5 ....Phosphorus or halogen containing
16.6 ...Neamine or derivative (e.g., neomycin A, etc.)
16.7 ...Kasugamycin or derivative
16.8 ...Antibiotics
16.9 ....Purification or recovery
17.1 ...Boron, phosphorus, heavy metal or aluminum, containing
17.2 ...Nitrogen containing
17.3 ....Nitrogen containing hetero ring
17.4 .....Nitrogen in aglycone moiety
17.5 ....Sulfur containing (e.g., methylthiolincosaminide, etc.)
17.6 .....Nitrogen or sulfur in aglycone moiety
17.7 ....Nitro or nitroso containing
17.8 .....Nitrogen in aglycone moiety
17.9 ....Nitrogen in aglycone moiety
18.1 ...Polycyclo ring system (e.g., hellebrin, etc.)
18.2 ...Containing -C(=X)X- wherein the X's are the same or diverse chalcogens
18.3 ...Plural oxyalkylene groups bonded directly to each other
18.4 ...Halogen containing
18.5 ...Processes
18.6 ....Reacting a carbohydrate with an organic -O- containing compound (e.g., reacting glucose with methanol, etc.)
18.7 ..Nitrogen containing
20 ...Chitin or derivative
21 ...Heparin or derivative
22 ...N-Glycosides
23 ....Nitrogen containing hetero ring (e.g., morpholine, etc.)
24 .....Plural nitrogen containing hetero rings
25 ......Cobalamin
26 ......Adenosine or derivative
27 ....Phosphorus containing
28 ......Phosphorus containing
29 .....Phosphorus containing
30 ...Cellulose derivatives
31 ....Nitrogen containing hetero ring (e.g., morpholine, etc.)
32 ....Esters
33 .....Sulfur containing acid
34 .....Phosphorus containing acid
35 .....Nitrates
36 ......Mixed esters
37 ......With pretreatment process
38 ......Subsequent treatment process
39 ....Comminuting
40 ....Recovery from photographic film
41 ....Viscosity or degree of polymerization changed (e.g., degrading, cross-linking, etc.)
42 ....Stabilizing
43 ....Ethers
44 .....Mixed ethers
45 ...Starch derivatives
46 ....Dextrin derivatives
47 ....Cross-linked
48 ....Esters
49 .....Ether-esters or mixed esters
50 ....Ethers
51 ...Dextran derivatives
52 ...Gum derivatives
53 ...Oxygen double bonded and nitrogen bonded directly to the same carbon
54 ...Sulfur containing
55 ...Plural nitrogens containing
55.1 ....Polysaccharides
55.2 ...Glucosamine containing
55.3 ...Processes
56 ..Cellulose or derivative
57 ...Regenerated cellulose
58 ...Esters
59 ....Sulfur containing acid
60 .....Xanthate or viscose
61 ......Subsequent treatment process
62 ....Phosphorus containing acid
63 ....Carboxylic acid esters
64 .....Mixed carboxylate esters
65 ......Propionate, butyrate or isobutyrate containing
66 .....Ether-esters
67 .....Formates
68 .....Propionates, butyrates or isobutyrates

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.CARBOHYDRATES OR DERIVATIVES
..Cellulose or derivative
...Esters
....Carboxylic acid esters
69 .....Acetates
70 ......With pretreatment process
71 ....Acetic acid utilized in pretreatment
72 ....Halogen containing compound utilized in process
73 ....Sulfur containing compound utilized in pretreatment
74 ....Sulfur containing compound utilized in pretreatment
75 ....Halogen containing compound utilized in process
76 ......Subsequent treatment process
77 ....Comminuting or centrifuging
78 ....Recovery from photographic film
79 ....Corrosiveness reduced
80 ....Viscosity or degree of polymerization changed (e.g., degrading, cross-linking, etc.)
81 ....Stabilizing
82 ....Halogen containing compound utilized in process
83 ......Halogen containing compound utilized in process
84 ...Ethers
85 ....Subsequent treatment process
86 .....Comminuting
87 .....Liquid interaction properties changed (e.g., solubility, absorbability, etc.)
88 .....Viscosity, degree of polymerization or heat stability changed (e.g., degrading, cross-linking, etc.)
89 .....Acid employed in subsequent treatment
90 ....Mixed ethers
91 .....Hydoxyalkyl containing
92 ....Sulfur containing
93 ....Unsaturated
94 .....Aromatic nucleus containing
95 ....Hydroxyalkyl containing
96 .....Hydroxyethyl
97 ....Carboxyalkyl or salts thereof
98 .....Carboxymethyl or salts thereof
99 ....Alkyl or cycloalkyl
100 .....Ethyl
101 ...Metal containing
102 ..Starch or derivative
103 ...Dextrin or derivative
104 ...Aldehyde reaction product
105 ...Oxidized starch or derivative
106 ...Cross-linked
107 ...Esters
108 ....Ether-esters or mixed esters
109 ....Phosphorus or sulfur containing
110 ....Carboxylic
111 ...Ethers
112 ..Dextran or derivative
113 ...Iron containing
114 ..Gums or derivatives
115 ..Esters
116 ...Ether-esters
117 ...Phosphorus containing
118 ...Sulfur containing
119 ...Carboxylic
120 ..Ethers
121 ..Metal containing
122 ..Sulfur or halogen containing
123 ..Plural diverse saccharides containing (e.g., hetero polysaccharides, etc.)
124 ..Processes
125 ...Isomerization
126 ...Polymerization
127 ...Purification or recovery
128 ....From plant material

ORGANIC COMPOUNDS (Class 532, Subclass 1)

1 .HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (I.E., OXYGEN, SULFUR, SELENIUM OR TELLURIUM) OR NITROGEN AS THE ONLY RING HETERO ATOMS

2 ..Cyclopentanohydrophenanthrene ring system containing

3 ...Heavy metal or aluminum containing

4 ...Boron or silicon containing

5 ...Phosphorus attached directly or indirectly to the cyclopentanohydrophenanthrene ring system by nonionic bonding

6 ...Spiro

7 ....Plural spiro atoms

8 .....The cyclopentanohydrophenanthrene ring system is part of a polycyclo ring system having at least five cyclos

9 ......Nitrogen containing hetero ring as one of the cyclos of the polycyclo ring system

10 .....The cyclopentanohydrophenanthrene ring system shares spiro atoms with two hetero rings, each of which contains two oxygens (e.g., 3,17-bis-ketals, etc.)

11 .....The cyclopentanohydrophenanthrene ring system shares a spiro atom with a lactone ring (i.e., -C(=X)-O- is part of the ring, wherein X is chalcogen)

12 .....Plural oxygens in both rings which share a spiro atom (e.g., 17,20;20,21-bismethylenedioxy-pregnanes, etc.)

13 ......Nitrogen, sulfur, cyano or -C(=X)-, wherein X is chalcogen, bonded directly to the cyclopentanohydrophenanthrene ring system

14 ......Halogen attached directly or indirectly to the cyclopentanohydrophenanthrene ring system by acyclic nonionic bonding

15 ....The cyclopentanohydrophenanthrene ring system is part of a polycyclo ring system having at least five cyclos

16 .....Hetero ring is one of the cyclos of the polycyclo ring system

17 ......The hetero ring is five-membered, consisting of one oxygen and four carbons, and shares the spiro atom with a six-membered oxygen containing hetero ring (e.g., sapogenins, etc.)

18 ....Purification or recovery

19 ....Chalcogen bonded directly at the 12-position of the cyclopentanohydrophenanthrene ring system (e.g., hecogenin, etc.)

20 ....Chalcogen bonded directly at the 11-position of the cyclopentanohydrophenanthrene ring system

21 ....Chalcogen bonded directly at the 7-position of the cyclopentanohydrophenanthrene ring system

22 ....Halogen, cyano, nitrogen or sulfur bonded directly to the cyclopentanohydrophenanthrene ring system

23 ......The spiro atom is the 17-position carbon of the cyclopentanohydrophenanthrene ring system

24 ......The hetero ring shares the 11,12,13-positions of the cyclopentanohydrophenanthrene ring system (i.e., bridged; e.g., 11,18-oxido steroids, etc.)

25 ......The hetero ring is three-membered consisting of one oxygen and two carbons (e.g., oxirane, etc.)

26 ....The hetero ring shares the 5,6-positions of the cyclopentanohydrophenanthrene ring system

27 ......The hetero ring contains two chalcogens which are bonded directly at the 16- and 17-positions of the cyclopentanohydrophenanthrene ring system

28 ....The spiro includes the cyclopentanohydrophenanthrene ring system and a hetero ring

29 .....Nitrogen in the spiro hetero ring

30 .....Sulfur in the spiro hetero ring

31 .....Plural oxygens in the spiro hetero ring

32 ......The A ring is a benzene ring

33 ......Chalcogen bonded directly to the spiro hetero ring

34 ......The spiro hetero ring shares the 3-position carbon of the cyclopentanohydrophenanthrene ring system

35 ....Halogen bonded directly to the cyclopentanohydrophenanthrene ring system

36 ....Nitrogen attached directly or indirectly to the cyclopentanohydrophenanthrene ring system by nonionic bonding

37 ....Plural cyclic ketal rings containing (e.g., 3,20-bis-ketals, etc.)

38 ....Chalcogen bonded directly at the 11-position of the cyclopentanohydrophenanthrene ring system

39 ....The cyclopentanohydrophenanthrene ring system is fully saturated

40 ....Carbon chain having carbon-to-carbon unsaturation bonded directly at the 17-position of the cyclopentanohydrophenanthrene ring system

41 .....The spiro hetero ring contains -C(=X)-O-, wherein X is chalcogen, as part of the ring (e.g., spiro-lactones, etc.)

42 ......Sulfur bonded directly to the cyclopentanohydrophenanthrene ring system

43 ......Chalcogen bonded directly at the 11-position of the cyclopentanohydrophenanthrene ring system

44 ......Chalcogen, halogen, or nitrogen attached indirectly to the cyclopentanohydrophenanthrene ring system by acyclic nonionic bonding

45 .....The spiro hetero ring is four-membered consisting of one oxygen and three carbons

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (I.E., OXYGEN, SULFUR, SELENIUM OR TELLURIUM) OR NITROGEN AS THE ONLY RING HETERO ATOMS

..Cyclopentanohydrophenanthrene ring system containing

...Spiro

....The spiro includes the cyclopentanohydrophenanthrene ring system and a hetero ring

46 .....The spiro hetero ring is three-membered consisting of one oxygen and two carbons (e.g., oxirane, etc.)

47 ...The cyclopentanohydrophenanthrene ring system is part of a polycyclo ring system having at least five cyclos

48 ....Hetero ring is one of the cyclos of the polycyclo ring system

49 .....The hetero ring contains nitrogen

50 ......Plural nitrogens in the hetero ring

51 ....The hetero ring is five-membered

52 ....The hetero ring consists of two nitrogens and three carbons and is ortho-fused to the A ring

53 ....Having -C(=X)-, wherein X is chalcogen, bonded directly at the 17-position of the cyclopentanohydrophenanthrene ring system

54 ....The hetero ring consists of two nitrogens and three carbons and is ortho-fused to the D ring

55 ......Chalcogen in the hetero ring

56 ....The hetero ring is five-membered

57 ....The hetero ring is ortho-fused to the A ring

58 ......The hetero ring is five-membered

59 .....The hetero ring contains sulfur

60 .....The hetero ring is a cyclic anhydride (i.e., containing -C(=X)-O-C(=Y)- as part of the ring, wherein X and Y are chalcogen; e.g., 5,8-maleic anhydride adduct of 5,7,9(11)-pregnatrien-3,20-dione, etc.)

61 .....The hetero ring contains plural oxygens

62 ......Two of the cyclos share at least three ring members or a ring carbon is shared by three of the cyclos (e.g., bridged, peri-fused, etc.)

63 ......The hetero ring is ortho-fused to the D ring

64 ....At least six cyclos in the polycyclo ring system

65 ....Nitrogen or acyclic chalcogen bonded directly to the hetero ring (e.g., cyclic carbonates, etc.)

66 ....The A ring is a benzene ring

67 ....Sulfur or nitrogen attached directly or indirectly to the cyclopentanohydrophenanthrene ring system by acyclic nonionic bonding

68 ....Halogen attached indirectly to the cyclopentanohydrophenanthrene ring system by acyclic nonionic bonding

69 ....Halogen bonded directly to the cyclopentanohydrophenanthrene ring system

70 ....Oxygen bonded directly at the 11-position of the cyclopentanohydrophenanthrene ring system

71 ....Oxygen attached directly to the B ring or indirectly to the A or B ring by acyclic nonionic bonding

72 .....The hetero ring is a lactone (i.e., containing -C(=X)-O- as part of the ring, wherein X is chalcogen)

73 ......The lactone ring shares at least three ring members with one other cyclo of the polycylo ring system (i.e., bridged)

74 ....The lactone ring shares the 11,12,13-positions of the cyclopentanohydrophenanthrene ring system (e.g., 11, 18-lactones, etc.)

75 ......The lactone ring shares a ring carbon with two other cyclos of the polycyclo ring system (e.g., peri-fused, etc.)

76 .....The hetero ring is three-membered consisting of one oxygen and two carbons (e.g., oxirane, etc.)

77 ......The polycyclo ring system contains plural oxirane rings

78 ......The hetero ring shares the 1,2-positions of the cyclopentanohydrophenanthrene ring system

79 ......The hetero ring shares the 4,5-positions of the cyclopentanohydrophenanthrene ring system

80 ......The hetero ring shares the 5,6-positions of the cyclopentanohydrophenanthrene ring system

81 ......The hetero ring shares the 6,7-positions of the cyclopentanohydrophenanthrene ring system

82 ......The hetero ring shares the 11,12-positions of the cyclopentanohydrophenanthrene ring system

83 ......The hetero ring shares the 14,15-positions of the cyclopentanohydrophenanthrene ring system

84 ......The hetero ring shares the 16,17-positions of the cyclopentanohydrophenanthrene ring system

85 ....Halogen bonded directly to the cyclopentanohydrophenanthrene ring system

86 ....Saturated A ring

87 ......The hetero ring shares the 9,11-positions of the cyclopentanohydrophenanthrene ring system

88 ....Halogen bonded directly to the cyclopentanohydrophenanthrene ring system

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (I.E., OXYGEN, SULFUR, SELENIUM OR TELLURIUM) OR NITROGEN AS THE ONLY RING HETERO ATOMS
..Cyclopentanohydrophenanthrene ring system containing
...The cyclopentanohydrophenanthrene ring system is part of a polycyclo ring system having at least five cyclos
....Hetero ring is one of the cyclos of the polycyclo ring system
.....The hetero ring is three-membered consisting of one oxygen and two carbons (e.g., oxirane, etc.)
......The hetero ring shares the 9,11-positions of the cyclopentanohydrophenanthrene ring system
89 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the cyclopentanohydrophenanthrene ring system
90 .....The hetero ring shares at least three ring members with one other cyclo of the polycyclo ring system (i.e., bridged)
91 ......Bridge consisting of oxygen and carbon between the 6- and 10-positions of the cyclopentanohydrophenanthrene ring system (e.g., 6,19-oxido steroids, etc.)
92 ......Bridge consisting of oxygen and carbon between the 11- and 13-positions of the cyclopentanohydrophenanthrene ring system (e.g., 11,18-oxido steroids, etc.)
93 .....The hetero ring shares a ring carbon with two other cyclos of the polycyclo ring system (e.g., peri-fused, etc.)
94 ...Hetero ring attached directly to the cyclopentanohydrophenanthrene ring system by nonionic bonding
95 ....The hetero ring contains nitrogen
96 .....Plural nitrogen containing hetero rings bonded directly to the cyclopentanohydrophenanthrene ring system
97 .....The hetero ring is bonded directly at the 3-position of the cyclopentanohydrophenanthrene ring system
98 ......The A ring is a benzene ring
99 ......Halogen bonded directly to the cyclopentanohydrophenanthrene ring system
100 ....The hetero ring contains plural chalcogens
101 .....The hetero ring and acyclic chalcogen are both bonded directly at the 17-position of the cyclopentanohydrophenanthrene ring system
102 ....The hetero ring contains -C(=X)-O-, wherein X is chalcogen, as part of the ring (e.g., lactones, etc.)
103 .....Additional chalcogen, cyano, or -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring
104 .....Nitrogen or sulfur attached directly or indirectly to the cyclopentanohydrophenanthrene ring system by nonionic bonding
105 .....Chalcogen bonded directly at the 14-position of the cyclopentanohydrophenanthrene ring system or double bond in the D ring (e.g., cardenolides, etc.)
106 ...Nitrogen attached directly to the cyclopentanohydrophenanthrene ring system by nonionic bonding
107 ...Nitrogen containing hetero ring attached indirectly to the cyclopentanohydrophenanthrene ring system by nonionic bonding
108 ....The hetero ring is five-membered and has plural hetero atoms
109 ....The hetero ring is in the 17-position substituent of the cyclopentanohydrophenanthrene ring system
110 .....The hetero ring is bonded directly to a -C(=X)- group, wherein X is chalcogen
111 .....Having -C(=X)-, wherein X is chalcogen, bonded directly at the 17-position of the cyclopentanohydrophenanthrene ring system
112 .....Chalcogen or nitrogen in chain between the hetero ring and the cyclopentanohydrophenanthrene ring system
113 ....Chalcogen in chain between the hetero ring and the cyclopentanohydrophenanthrene ring system
114 ...Oxygen containing hetero ring attached indirectly to the cyclopentanohydrophenanthrene ring system by nonionic bonding
115 ....The hetero ring contains -C(=X)-O-, wherein X is chalcogen, as part of the ring (e.g., lactones, etc.)
116 ....Additional hetero atom in the oxygen containing hetero ring
117 ....The A ring is a benzene ring
118 ....The hetero ring is bonded directly to chalcogen which is bonded directly to the cyclopentanohydrophenanthrene ring system
119 .....The chalcogen is bonded directly at the 17-position of the cyclopentanohydrophenanthrene ring system
120 ...Chalcogen attached indirectly to the cyclopentanohydrophenanthrene ring system by nonionic bonding
121 ..Azaporphyrins
122 ...Phthalocyanines
123 ....Hetero ring attached directly or indirectly to the phthalocyanine ring system by nonionic bonding
124 .....The hetero ring is six-membered having nitrogen as a ring member
125 ......Plural hetero atoms in the six-membered hetero ring
126 ....Triazines (including hydrogenated)
127 .....The hetero ring is five-membered having plural hetero atoms, at least one of which is nitrogen
128 ....Boron, germanium, phosphorus or silicon containing

	ORGANIC COMPOUNDS (Class 532, Subclass 1)
	.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (I.E., OXYGEN, SULFUR, SELENIUM OR TELLURIUM) OR NITROGEN AS THE ONLY RING HETERO ATOMS
	..Azaporphyrins
	...Phthalocyanines
129	....Having -C(=X)-, wherein X is chalcogen, bonded directly to ring carbon of the phthalocyanine ring system (e.g., tetracarboxy copper phthalocyanine, etc.)
130	....Having -C(=X)-, wherein X is chalcogen, attached indirectly to ring carbon of the phthalocyanine ring system by nonionic bonding (e.g., phthalocyanine acetic acids, etc.)
131	....Sulfonyl bonded directly to ring carbon of the phthalocyanine ring system
132	.....Chalcogen bonded directly to the sulfonyl group
133	.....Nitrogen bonded directly to the sulfonyl group
134	......Additional nitrogen in the sulfonyl containing substituent
135	....Nitrogen attached indirectly to ring carbon of the phthalocyanine ring system by acyclic nonionic bonding
136	....Halogen bonded directly to ring carbon of the phthalocyanine ring system
137	.....At least eight halogens bonded directly to ring carbons of the phthalocyanine ring system
138	.....Processes of halogenating the phthalocyanine ring system
139	....Metal containing
140	.....Heavy metal or aluminum containing
141	......Specified crystalline form or processes of milling (e.g., alpha crystalline form, ball milling, acid milling, etc.)
142	......Processes of forming the phthalocyanine ring system
143	.......From reactant which contains plural cyano groups (e.g., preparing from phthalonitrile, etc.)
144	.......From reactant which contains plural carbonyl groups (e.g., preparing from phthalic anhydride, etc.)
145	..Porphyrins (including hydrogenated; e.g., chlorophyll, etc.)
200	..Hetero ring is four-membered containing nitrogen and having chalcogen double bonded directly to a ring carbon which is adjacent to the ring nitrogen
201	...Heavy metal containing
202	...Plural hetero atoms in the hetero ring
203	...Polycyclo ring system containing the hetero ring as one of the cyclos
204	....The ring nitrogen is shared by a ring containing at least seven members
205	....The ring nitrogen is shared by a six-membered ring
214	.....The six-membered ring contains sulfur
215	......1-thia-5-aza-bicyclo(4.2.0)oct ane (including unsaturated; e.g., cepham, etc.)
216	.......The 1-thia-5-aza-bicyclo(4.2.0)oct -ane is part of a polycyclo ring system having at least three cyclos
217	.......Double bond between the 2,3-positions of the bicyclo ring system (e.g., 2-cephem, etc.)
218	........Ring expansion to produce the bicyclo ring system
219	........7-amino cephalosporanic acid per se or salt thereof (i.e., 7-ACA or salt thereof)
220	........Purification or recovery
221	........7,7-disubstituted
222	........Additional hetero ring containing
223	.........2- or 4-position substituent contains hetero ring
224	.........3-position substituent contains a pyridine ring (e.g., quinoline, thienopyridine, lutidines, etc.)
225	..........7-position substituent contains hetero ring
226	.........3-position substituent contains sulfur
227	..........7-position substituent contains hetero ring
228	.........Alkyl, hydroxyalkyl, alkoxyalkyl or alkanoyloxyalkyl bonded directly to 3-position
229	........Sulfur containing substituent
230	........Alkyl, hydroxyalkyl, alkoxyalkyl or alkanoyloxyalkyl bonded directly to 3-position
300	.....The six-membered ring contains oxygen
301	......1-oxa-5-aza-bicyclo(4.2.0)octa ne (including unsaturated)
302	....The ring nitrogen is shared by a five-membered ring
303	.....The five-membered ring contains an additional hetero atom
304	......1-thia-4-aza-bicyclo(3.2.0)hep -tane (including unsaturated; e.g., penam, etc.)
305	.......The 1-thia-4-aza-bicyclo(3.2.0)hep -tane is part of a polycyclo ring system having at least three cyclos
306	.......Plural 1-thia-4-aza-bicyclo(3.2.0)hep -tane ring systems attached directly or indirectly to each other by nonionic bonding
307	.......Spiro
308	.......The 6-position substituent contains phosphorus attached directly or indirectly to the bicyclo ring system by nonionic bonding
309	.......Nitrogen containing hetero ring attached directly at the 3-position of the bicyclo ring system
310	.......Having -C(=X)-, wherein X is chalcogen, bonded directly at the 3-position of the bicyclo ring system
311	........Nitrogen or hydrogen bonded directly to the -C(=X)- group
312	........Nitrogen bonded directly at the 6-position of the bicyclo ring system

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (I.E., OXYGEN, SULFUR, SELENIUM OR TELLURIUM) OR NITROGEN AS THE ONLY RING HETERO ATOMS
..Hetero ring is four-membered containing nitrogen and having chalcogen double bonded directly to a ring carbon which is adjacent to the ring nitrogen
...Polycyclo ring system containing the hetero ring as one of the cyclos
....The ring nitrogen is shared by a five-membered ring
.....The five-membered ring contains an additional hetero atom
......1-thia-4-aza-bicyclo(3.2.0)hep-tane (including unsaturated; e.g., penam, etc.)
.......Having -C(=X)-, wherein X is chalcogen, bonded directly at the 3-position of the bicyclo ring system
........Nitrogen bonded directly at the 6-position of the bicyclo ring system
313 ....The 2-position substituent contains chalcogen, nitrogen or halogen
314 ....Having -C(=X)-, wherein X is chalcogen, single bonded directly to the nitrogen (e.g., penicillin F, etc.)
315 ....Processes utilizing penam containing compound
316 ....Introduction of -C(=X)- group, wherein X is chalcogen, onto nitrogen (e.g., carboxamide formation, etc.)
317 ....Boron, silicon or phosphorus containing reactant
318 ....Esterification of the 3-position -C(=X)X- group, wherein the X's may be the same or diverse chalcogens
319 ....Sulfur-oxidation, epimerization, 6-alkoxylation, de-esterification or reduction
320 ....Formation of solvate or anhydrous forms, or special crystalline forms
321 ....Conversion of amine salts to metal salts
322 ....Purification utilizing solid adsorbent
323 ....Base salt formation of 3-position -COOH group
324 ....Extracting solid from solution
325 ....The nitrogen is part of a hetero ring
326 ....Chalcogen, -C(=X)-, wherein X is chalcogen, or additional nitrogen bonded directly to the -C(=X)- group
327 ....Hetero ring or ring system bonded directly to the -C(=X)- group
328 ....Nitrogen containing ring or ring system attached by carbon or acyclic carbon chain to the -C(=X)- group
329 ....Polycyclo heterocyclic ring system in 6-position substituent
330 ....The polycyclo ring system is attached directly to a -C(=X)-NH- group, wherein X is chalcogen and substitution may be made for hydrogen only, which group is between the polycyclo ring system and the 1-thia-4-aza-bicyclo(3.2.0)hep-tane
331 ....Acyclic nitrogen or azide attached indirectly to the -C(=X)- group by acyclic nonionic bonding
332 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the nitrogen
333 ....Hetero ring bonded directly to the -C(=X)- group
334 ....Chalcogen, additional nitrogen or additional -C(=X)- bonded directly to the -C(=X)- group
335 ....Additional acyclic nitrogen or acyclic chalcogen in the 6-position substituent
336 ....The -C(=X)- group, an unsubstituted benzene ring and -NHH bonded directly to the same carbon atom (e.g., ampicillin, etc.)
337 ....Cycloaliphatic ring in 6-position substituent
338 ....Benzene or hetero ring in 6-position substituent
339 ....The ring is bonded directly to the -C(=X)- group
340 ....Having -C(=X)X-, wherein the X's may be the same or diverse chalcogens, in chain between the ring and the -C(=X)- group
341 ....Chalcogen in the chain between the ring and the -C(=X)- group
342 ....Unsubstituted hydrocarbyl chain between the ring and the -C(=X)- group
343 ....Amine addition salts of 3-position -COOH group
344 ....Nitrogen containing hetero ring in the cation (i.e., amine moiety)
345 ....Plural nitrogens in the cation (i.e., amine moiety)
346 ....Processes
347 ......Bicyclo ring system which is 1-oxa-4-aza-bicyclo(3.2.0)hep-tane (including unsaturated)
348 ....Acyclic carbon double bonded directly at the 2-position of the bicyclo ring system
349 ....Chalcogen attached directly by a single bond to the carbon or to an acyclic carbon chain which contains the carbon
350 .....The ring system is 4-aza-bicyclo(3.2.0)heptane (including unsaturated) and has sulfur bonded directly at the 2-position
351 ......Thienamycin per se or salt thereof

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (I.E., OXYGEN, SULFUR, SELENIUM OR TELLURIUM) OR NITROGEN AS THE ONLY RING HETERO ATOMS
..Hetero ring is four-membered containing nitrogen and having chalcogen double bonded directly to a ring carbon which is adjacent to the ring nitrogen
...Polycyclo ring system containing the hetero ring as one of the cyclos
352 ....Five-membered hetero ring consisting of one nitrogen, one sulfur and three carbons as one of the cyclos of the polycyclo ring system
353 .....Double bond between ring members of the five-membered hetero ring
354 ...Additional chalcogen bonded directly to the hetero ring
355 ....The additional chalcogen is bonded directly to the ring nitrogen
356 ....The additional chalcogen is double bonded directly to the hetero ring
357 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the additional chalcogen
358 ....The additional chalcogen is sulfur which is bonded directly to chalcogen
359 .....The sulfur is double bonded directly to the chalcogen
360 ....Additional carbon bonded directly to the additional chalcogen
361 ...Halogen attached directly at the 4-position of the hetero ring by nonionic bonding
362 ...The 4-position of the hetero ring is unsubstituted or alkyl substituted only
363 ....Nitrogen bonded directly at the 3-position of the hetero ring
364 ...Nitrogen bonded directly at the 3-position of the hetero ring
450 ..The hetero ring contains at least eight members including nitrogen and carbon
451 ...Chalcogen double bonded directly to a ring carbon of the hetero ring which is adjacent to the ring nitrogen (e.g., laurolactam, etc.)
452 ....Heavy metal, aluminum, boron or silicon containing
453 ....Spiro
454 ....Chalcogen in the hetero ring
455 .....Polycyclo ring system which contains the hetero ring as one of the cyclos
456 ......Two of the cyclos share at least three ring members or a ring member is shared by three of the cyclos (e.g., bridged, peri-fused, etc.)
457 ....A five-membered cyclo of the polycyclo ring system consists of four ring carbons and one ring oxygen (e.g., fused rifamycins, etc.)
458 ....Tetracyclo ring system which contains the hetero ring as one of the cyclos (e.g., rifamycin S, etc.)
459 ....Nitrogen, sulfur or halogen attached directly to the tetracyclo ring system by nonionic bonding
460 ....Plural nitrogens in the hetero ring
461 ....Polycyclo ring system which contains the hetero ring as one of the cyclos
462 .....Oxirane ring is one of the cyclos in the polycyclo ring system (e.g., maytansinol, etc.)
463 ....Nitrogen or additional chalcogen attached directly to the hetero ring by nonionic bonding
464 ....Utilizing oximes, oxime salts, hydroxylamines, hydroxylamine salts or nitrosating agents to form the hetero ring (i.e., formation of the lactam ring)
465 ...Heavy metal or aluminum containing
466 ...Spiro
467 ...The hetero ring contains chalcogen
468 ....Polycyclo ring system which contains the hetero ring as one of the cyclos
469 .....Plural nitrogens in the hetero ring
470 ...The hetero ring contains plural nitrogens
471 ....Polycyclo ring system which contains the hetero ring as one of the cyclos
472 .....Two of the cyclos share at least three ring members or a ring member is shared by three of the cyclos (e.g., bridged, peri-fused, etc., toxiferin)
473 .....Bicyclo ring system which contains the hetero ring as one of the cyclos
474 ....The hetero ring contains at least three nitrogens
475 .....Nitro bonded directly to ring nitrogen of the hetero ring (e.g., HMX, etc.)
476 ...Polycyclo ring system which contains the hetero ring as one of the cyclos
477 ....Two of the cyclos share at least three ring members or a ring member is shared by three of the cyclos (e.g., bridged, peri-fused, etc.)
478 .....Containing additional heterocyclic polycyclo ring system having plural ring nitrogens (e.g., vinblastine, vincristine, etc.)
479 ....Tricyclo ring system which contains the hetero ring as one of the cyclos
480 ...Additional hetero ring attached directly or indirectly to the hetero ring by nonionic bonding
481 ....The additional hetero ring is six-membered and contains nitrogen
482 ...Chalcogen or nitrogen attached directly to the hetero ring by nonionic bonding
483 ...Plural nitrogens attached indirectly to the hetero ring by acyclic nonionic bonding
484 ..The hetero ring contains seven members including nitrogen and carbon
485 ...Chalcogen double bonded directly to a ring carbon adjacent to the ring nitrogen (e.g., caprolactam, etc.)
486 ....Heavy metal or aluminum containing
487 ....Silicon or phosphorus attached directly or indirectly to the hetero ring by nonionic bonding
488 ....Chalcogen in the hetero ring
489 .....Plural nitrogens in the hetero ring

	ORGANIC COMPOUNDS (Class 532, Subclass 1)
	.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (I.E., OXYGEN, SULFUR, SELENIUM OR TELLURIUM) OR NITROGEN AS THE ONLY RING HETERO ATOMS
	..The hetero ring contains seven members including nitrogen and carbon
	...Chalcogen double bonded directly to a ring carbon adjacent to the ring nitrogen (e.g., caprolactam, etc.)
	....Chalcogen in the hetero ring
490	.....Bicyclo ring system having the hetero ring as one of the cyclos
491	......The chalcogen and the nitrogen are in the 1,5-positions of the bicyclo ring system (e.g., 1,5-benzothiazepinone, etc.)
492	....Plural nitrogens in the hetero ring
493	.....Tetracyclo ring system having the hetero ring as one of the cyclos
494	......Nitrogen of the hetero ring is shared by an additional cyclo of the tetracyclo ring system
495	.....Tricyclo ring system having the hetero ring as one of the cyclos
496	......Nitrogen of the hetero ring is shared by an additional cyclo of the tricyclo ring system
497	.......Additional hetero atom in the additional cyclo of the tricyclo ring system
498	........The additional cyclo is five-membered consisting of nitrogen and carbon (e.g., imidazobenzodiazepinones, etc.)
499	.........The additional cyclo consists of three nitrogens and two carbons (e.g., triazolobenzodiazepinones, etc.)
500	.....Bicyclo ring system having the hetero ring as one of the cyclos
501	......At least three nitrogens in the hetero ring
502	......At least three hetero atoms in the bicyclo ring system
503	.......Chalcogen in the bicyclo ring system
504	......The bicyclo ring system is 1,4-benzodiazepine (including hydrogenated)
505	.......The chalcogen double bonded directly to the hetero ring is sulfur
506	.......Additional chalcogen bonded directly to ring carbon of the hetero ring
507	........The additional chalcogen is bonded directly at the 3-position of the bicyclo ring system
508	.........Nitrogen or -C(=X)-, wherein X is chalcogen, attached indirectly to the chalcogen by acyclic nonionic bonding
509	.......Acyclic nitrogen bonded directly to the hetero ring
510	.......Having -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring
511	.......Halogen bonded directly to the hetero ring
512	.......Chalcogen attached indirectly to nitrogen of the hetero ring by acyclic nonionic bonding
513	.......Sulfur, -C(=X)-, wherein X is chalcogen, or nitrogen, other than as nitro or nitroso, bonded directly to the carbocyclic ring of the bicyclo ring system
514	.......Nitrogen in the 1-position substituent of the bicyclo ring system
515	.......Preparation by cyclizing benzophenones or imine derivatives thereof
516	.......Preparation from a compound containing a different hetero ring
517	......The bicyclo ring system is 1,5-benzodiazepine (including hydrogenated)
518	.......Additional chalcogen double bonded directly to ring carbon of the hetero ring
519	....Polycyclo ring system which contains the hetero ring as one of the cyclos
520	.....Two of the cyclos share at least three ring members or a ring member is shared by three of the cyclos (e.g., bridged, peri-fused, etc.)
521	.....Plural hetero atoms in the polycyclo ring system
522	.....Tricyclo ring system which contains the hetero ring as one of the cyclos
523	.....Bicyclo ring system which contains the hetero ring as one of the cyclos
524	....Additional hetero ring containing
525	.....Plural seven-membered hetero rings
526	....Additional chalcogen bonded directly to the hetero ring
527	....Nitrogen bonded directly to the hetero ring
528	.....The nitrogen is bonded additionally only to hydrogen
529	....Having -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring
530	....Halogen bonded directly to the hetero ring
531	....Chalcogen or nitrogen attached indirectly to the hetero ring by nonionic bonding
532	....Preparing from a compound containing a hetero ring
533	.....The hetero ring is a lactam (i.e., -C(=X)-NH- is part of the ring, wherein X is chalcogen and substitution may be made for the hydrogen only)
534	....Preparing from a compound containing a cycloaliphatic ring
535	.....The reactant is a cyclic oxime
536	......Gas phase rearrangement
537	.....Acyclic -C(=X)X-, wherein the X's are the same or diverse chalcogens, attached directly to the cycloaliphatic ring by nonionic bonding
538	....Cyclization to form the hetero ring
539	.....Reactant contains a cyano group
540	....Purification or recovery
541	...Heavy metal or boron containing
542	...Phosphorus attached directly or indirectly to the hetero ring by nonionic bonding
543	...Spiro
544	...The hetero ring contains chalcogen

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (I.E., OXYGEN, SULFUR, SELENIUM OR TELLURIUM) OR NITROGEN AS THE ONLY RING HETERO ATOMS

..The hetero ring contains seven members including nitrogen and carbon

...The hetero ring contains chalcogen

545 ....Plural nitrogens in the heterocyclic ring

546 ....Polycyclo ring system which contains the hetero ring as one of the cyclos

547 .....Tricyclo ring system which contains the hetero ring as one of the cyclos

548 ......At least three ring hetero atoms in the tricyclo ring system

549 ......Sulfur and nitrogen are bonded directly to each other in the hetero ring

550 ......The nitrogen of the hetero ring is bonded directly to both remaining rings of the tricyclo ring system (e.g., dibenzo(b,e)(1,4)thiazepine, etc.)

551 ......Nitrogen bonded directly to ring carbon of the hetero ring

552 .....Bicyclo ring system which contains the hetero ring as one of the cyclos

553 ...The hetero ring contains plural nitrogens (e.g., 1,3-diazepines, etc.)

554 ....The hetero ring contains at least three nitrogens

555 ....Polycyclo ring system which contains the hetero ring as one of the cyclos

556 .....Two of the cyclos share at least three ring members or a ring member is shared by three of the cyclos (e.g., bridged, peri-fused, etc.)

557 .....Tricyclo ring system which contains the hetero ring as one of the cyclos

558 ......Nitrogen of the hetero ring is shared by an additional cyclo of the tricyclo ring system

559 ....The additional cyclo has at least six ring members

560 ....Chalcogen in the tricyclo ring system

561 ....The additional cyclo consists of one nitrogen and four carbons (e.g., diazepinoindoles, etc.)

562 ....The additional cyclo consists of two nitrogens and three carbons (e.g., imidazobenzodiazepines, etc.)

563 ....s-Triazolo(4,3-a)(1,4)-benzodi-azepines (including hydrogenated)

564 ....Chalcogen, nitrogen, cyano or halogen bonded directly to ring carbon of the triazolo ring

565 ....Nitrogen attached indirectly to ring carbon of the triazolo ring by acyclic nonionic bonding

566 ....The unshared ring carbon of the triazolo ring is unsubstituted or alkyl substituted only

567 .....Bicyclo ring system which contains the hetero ring as one of the cyclos

568 ......At least three ring hetero atoms in the bicyclo ring system

569 ......1,4-benzodiazepines (including hydrogenated)

570 ....Chalcogen bonded directly to ring carbon of the hetero ring

571 ....Nitrogen bonded directly to ring carbon of the hetero ring

572 ....Chalcogen or nitrogen attached indirectly to ring carbon of the hetero ring by acyclic nonionic bonding

573 ....Chalcogen or nitrogen attached indirectly to ring carbon of the hetero ring by acyclic nonionic bonding

574 ....Formation of the 1,4-benzodiazepine ring system

575 ....The nitrogens are in the 1,4-positions of the hetero ring

576 ...Polycyclo ring system which contains the hetero ring as one of the cyclos

577 ....Plural nitrogens in the polycyclo ring system

578 .....Three or more hetero atoms in the polycyclo ring system

579 .....Nitrogen of the hetero ring is shared by an additional cyclo of the polycyclo ring system

580 .....The seven-membered hetero ring shares ring members with one other cyclo only

581 ....Two of the cyclos share at least three ring members or a ring carbon is shared by three of the cyclos (e.g., bridged, peri-fused, etc.)

582 .....Bicyclo ring system which contains the hetero ring as one of the cyclos (e.g., 3-azabicyclo-(3.2.2)nonanes, etc.)

583 ......Having -C(=X)-, wherein X is chalcogen, bonded directly to ring nitrogen of the bicyclo ring system

584 ......Chalcogen or nitrogen attached directly to ring nitrogen of the bicyclo ring system by nonionic bonding

585 ......Chalcogen or nitrogen attached indirectly to ring nitrogen of the bicyclo ring system by acyclic nonionic bonding

586 ....Tricyclo ring system which contains the hetero ring as one of the cyclos

587 .....The hetero ring shares ring members with each of two benzene rings in the tricyclo ring system (e.g., morphanthridines, etc.)

588 ......The nitrogen of the hetero ring is bonded directly to each of the two benzene rings (e.g., iminodibenzyl, etc.)

589 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to ring nitrogen of the tricyclo ring system

590 ....Nitrogen attached directly or indirectly to ring carbon of the hetero ring by acyclic nonionic bonding

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (I.E., OXYGEN, SULFUR, SELENIUM OR TELLURIUM) OR NITROGEN AS THE ONLY RING HETERO ATOMS

..The hetero ring contains seven members including nitrogen and carbon

...Polycyclo ring system which contains the hetero ring as one of the cyclos

....Tricyclo ring system which contains the hetero ring as one of the cyclos

.....The hetero ring shares ring members with each of two benzene rings in the tricyclo ring system (e.g., morphanthridines, etc.)

......The nitrogen of the hetero ring is bonded directly to each of the two benzene rings (e.g., iminodibenzyl, etc.)

591 ....Chalcogen attached directly or indirectly to the hetero ring by acyclic nonionic bonding

592 ....Nitrogen attached indirectly to ring nitrogen of the hetero ring by acyclic nonionic bonding

593 ....Bicyclo ring system which contains the hetero ring as one of the cyclos

594 .....3-Benzazepines (including hydrogenated)

595 ......Benzene ring bonded directly to ring carbon of the hetero ring

596 ...Additional hetero ring attached directly or indirectly to the hetero ring by nonionic bonding

597 ....The additional hetero ring is six-membered and contains nitrogen

598 .....Plural hetero atoms in the additional hetero ring

599 ......Polycyclo ring system having the additional hetero ring as one of the cyclos

600 ....The additional hetero ring is 1,3-diazine (including hydrogenated)

601 ......The additional hetero ring is 1,3-diazine (including hydrogenated)

602 ....The additional hetero ring is five-membered and contains nitrogen

603 .....Plural hetero atoms in the additional hetero ring

604 ...Chalcogen attached directly to the hetero ring by nonionic bonding

605 ...Nitrogen attached directly to the hetero ring by nonionic bonding

606 ....Chalcogen, additional nitrogen, or -C(=X)-, wherein X is chalcogen, attached directly to the nitrogen by nonionic bonding

607 ...Having -C(=X)-, wherein X is chalcogen, bonded directly to nitrogen of the hetero ring

608 ....Chalcogen bonded directly to the -C(=X)- group

609 ...Chalcogen or nitrogen attached indirectly to the hetero ring by acyclic nonionic bonding

610 ....The chalcogen or nitrogen is multiple bonded to a carbon (e.g., cyano or carbonyl groups, etc.)

611 ...Benzene ring bonded directly to the hetero ring

612 ...The hetero ring is unsubstituted or alkyl substituted only

CLASS 544 PART OF THE CLASS 532-570 SERIES -- ORGANIC COMPOUNDS

DECEMBER 1990

IN THIS SERIES OF CLASSES, CLASS 544 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (Class 532, subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
1 ..Hetero ring is six-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazines, etc.)
2 ...Six-membered hetero ring consists of oxygen, sulfur, nitrogen and carbon (e.g., oxathiazines, etc.)
3 ...Six-membered hetero ring consists of sulfur, nitrogen and carbon (e.g., 1,2-thiazines, etc.)
4 ....Heavy metal or aluminum containing
5 ....Plural sulfurs in the six-membered hetero ring (e.g., dithiazines, etc.)
6 ....Spiro
7 ....Plural nitrogens in the six-membered hetero ring (e.g., thiatriazines, etc.)
8 .....Thiadiazines
9 ......Polycyclo ring system having the thiadiazine ring as one of the cyclos
10 ....Bicyclo ring system having the thiadiazine ring as one of the cyclos
11 ....Benzothiadiazines
12 ....1,2,4-benzothiadiazines
13 ....Sulfamyl or substituted sulfamyl containing
14 ....Polycyclo ring system having the six-membered hetero ring as one of the cyclos
31 .....Phenothiazine as three cyclos of polycyclo ring system having at least four cyclos
32 .....Tricyclo ring system having the six-membered hetero ring as one of the cyclos
33 ......1, 2- or 2, 1-Thiazine ring in the tricyclo ring system (e.g., hydrogenated 1, 2-benzothiazine in tricyclo ring system, etc.)
34 ......Plural ring nitrogens in the tricyclo ring system
35 ......Phenothiazines (including hydrogenated)
36 ....Purification or recovery
37 ....Nitrogen bonded directly to phenothiazine ring system
38 ....Carbon bonded directly to ring nitrogen of phenothiazine ring system
39 ....Divalent chalcogen double bonded directly to the carbon
40 ....Additional chalcogen bonded directly to the carbon
41 ....Nitrogen containing substituent bonded to nitrogen of phenothiazine ring system
42 ....Nitrogen containing hetero ring in the nitrogen containing substituent (e.g., oxazole, etc.)
43 ....Plural hetero rings in the nitrogen containing substituent
44 ....Piperazine ring in the nitrogen containing substituent
45 ....Chalcogen in the nitrogen containing substituent
46 ....Chalcogen in the nitrogen containing substituent
47 .....Bicyclo ring system having the six-membered hetero ring as one of the cyclos
48 ......Three or more ring hetero atoms in the bicyclo ring system
49 ......Benzothiazines (including hydrogenated)
50 ....1,3- or 3,1- benzothiazines
51 ....1,4-benzothiazines
52 ....Double bonded divalent chalcogen containing
53 ....1,3-thiazines
54 .....Double bonded divalent chalcogen containing
55 .....Additional hetero ring containing
56 ....1,4-thiazines
57 .....Phosphorus containing
58.1 .....Double bonded divalent chalcogen containing
58.2 ......Divalent chalcogen double bonded directly to the thiazine ring
58.4 ......Having -C(=X)-, wherein X is chalcogen, bonded directly to the thiazine ring
58.5 ......Additional hetero ring containing
58.6 ....Ring nitrogen in the additional hetero ring, which is six-membered
58.7 ....Ring chalcogen in the additional hetero ring
59 .....Thiomorpholines (i.e., fully hydrogenated 1,4-thiazines)
60 ......Additional hetero ring containing
61 ....The additional hetero ring is one of the cyclos in a bicyclo ring system
62 ....Benzo is the other cyclo
63 ...Six-membered hetero ring consists of oxygen, nitrogen and carbon (e.g., 1,2-oxazines, etc)
64 ....Heavy metal or aluminum containing
65 ....Plural oxygens in the six-membered hetero ring
66 ....Plural nitrogens in the six-membered hetero ring
67 .....1,3,5-oxadiazines
68 .....Oxygen bonded directly to the six-membered hetero ring
69 ....Boron or silicon containing
70 ....Spiro
71 .....Spiro oxazine
72 ....Plural oxazine rings
73 .....Polycyclo ring system having oxazine ring as at least one of the cyclos
74 ......Plural 1,4-oxazine rings are cyclos in the polycyclo ring system
75 ....Pentacyclo ring system having the oxazine rings as cyclos
76 ....Plural nitrogens bonded directly to the pentacyclo ring system
77 ....Acyclic nitrogen is bonded directly to a -C(=X)- group, wherein X is chalcogen

ORGANIC COMPOUNDS (Class 532, subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is six-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazines, etc.)
...Six-membered hetero ring consists of oxygen, nitrogen and carbon (e.g., 1,2-oxazines, etc)
....Plural oxazine rings
78 .....Plural morpholine rings (i.e., plural fully hydrogenated 1, 4-oxazine rings)
79 ......Polycyclo ring system
80 ....Ring nitrogen in the polycyclo ring system
81 ....Four or more ring nitrogens in the polycyclo ring system
82 ......Additional nitrogen containing hetero ring (e.g., thiazole, etc.)
83 ....Triazine
84 ......Phosphorus attached directly or indirectly to a morpholine ring by nonionic bonding
85 ......Sulfur attached directly or indirectly to a morpholine ring by nonionic bonding
86 ......Nitrogen attached directly or indirectly to a morpholine ring by nonionic bonding
87 ......Oxygen attached directly or indirectly to a morpholine ring by nonionic bonding
88 ....1, 3-Oxazines
89 .....Polycyclo ring system having the oxazine ring as one of the cyclos
90 ......Bicyclo ring system having the oxazine ring as one of the cyclos
91 ....Three or more ring hetero atoms in the bicyclo ring system
92 ....Chalcogen bonded directly to the oxazine ring
93 ....Plural oxygens bonded directly to the oxazine ring
94 ....3, 1-Benzoxazine-2, 4-diones (including hydrogenated)
95 ......Three or more ring hetero atoms in the polycyclo ring system
96 .....Additional hetero ring containing
97 .....Chalcogen bonded directly to the oxazine ring
98 ....1, 4-Oxazines
99 .....Polycyclo ring system having the oxazine ring as one of the cyclos
100 ......Anthrone or anthraquinone in the polycyclo ring system
101 ......Tricyclo ring system having the oxazine ring as one of the cyclos
102 ....Phenoxazines (including hydrogenated)
103 ....Plural nitrogens bonded directly to the phenoxazine
104 ....Sulfur containing
105 ......Bicyclo ring system having the oxazine ring as one of the cyclos (e.g., benzoxazines, etc.)
106 .....Morpholines (i.e., fully hydrogenated 1, 4-oxazines)
107 ......Addition salts of morpholine which is unsubstituted or hydrocarbyl substituted only
108 ....N, N-dihydrocarbyl morpholinium
109 ....Hetero ring in ionically bonded moiety
110 ....Phosphorus or sulfur in ionically bonded moiety
111 ......Additional nitrogen containing hetero ring (e.g., thiazetidine, etc.)
112 ....Triazine ring
113 ....1, 3, 5-Triazine ring
114 ....Diazine ring
115 ....The diazine ring is one of the cyclos in a polycyclo ring system
116 ....The diazine ring is one of the cyclos in a bicyclo ring system
117 ....Three or more ring hetero atoms in the bicyclo ring system
118 ....Four or more ring nitrogens in the bicyclo ring system
119 ....Acyclic nitrogen containing
120 ....1, 4-Diazine ring
121 ....Piperazine ring
122 ....1, 3-Diazine ring
123 ....Oxygen bonded directly to the diazine ring
124 ....Six-membered ring consisting of one nitrogen and five carbons (e.g., pyridine, etc.)
125 ....The additional six-membered hetero ring is one of the cyclos in a polycyclo ring system
126 ....The additional six-membered hetero ring is one of the cyclos in a tricyclo ring system
127 ....The additional six-membered hetero ring is one of the cyclos in a bicyclo ring system
128 ....Quinoline or isoquinoline (including hydrogenated)
129 ....Piperidine ring
130 ....Double bonded divalent chalcogen containing
131 ....Double bonded divalent chalcogen containing
132 ....Five-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen
133 ....The five-membered hetero ring has at least sulfur and nitrogen as ring hetero atoms
134 ....Plural sulfurs or nitrogens in the five-membered hetero ring (e.g., thiatriazole, etc.)
135 ....Benzothiazoles (including hydrogenated)
136 ....Polysulfide containing chain between morpholine ring and benzothiazole ring system
137 ....The five-membered hetero ring has at least oxygen and nitrogen as ring hetero atoms
138 ....Oxadiazole ring (including hydrogenated)
139 ....1, 3-Diazole ring (including hydrogenated)
140 ....1, 2-Diazole ring (including hydrogenated)

	ORGANIC COMPOUNDS (Class 532, subclass 1)
	.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
	..Hetero ring is six-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazines, etc.)
	...Six-membered hetero ring consists of oxygen, nitrogen and carbon (e.g., 1,2-oxazines, etc)
	....1, 4-Oxazines
	.....Morpholines (i.e., fully hydrogenated 1, 4-oxazines)
	......Additional nitrogen containing hetero ring (e.g., thiazetidine, etc.)
141	.......Five-membered hetero ring consisting of one nitrogen and four carbons
142	........The five-membered hetero ring is one of the cyclos in a polycyclo ring system
143	.........The five-membered hetero ring is one of the cyclos in a bicyclo ring system
144	..........Chalcogen bonded directly to the bicyclo ring system
145	......Sulfur containing hetero ring (e.g., thioxane, etc.)
146	.......Thiophene ring (including hydrogenated)
147	......Additional oxygen containing hetero ring
148	.......Plural ring hetero atoms in the additional hetero ring
149	.......The additional hetero ring is six-membered
150	........The additional six-membered hetero ring is one of the cyclos in a polycyclo ring system
151	.........The additional six-membered hetero ring is one of the cyclos in a bicyclo ring system
152	.......The additional hetero ring is five-membered
153	........The five-membered hetero ring is one of the cyclos in a polycyclo ring system
154	......Polycyclo-carbocyclic ring system having at least three cyclos
155	.......Tricyclo having three six-membered carbocyclic rings
156	........Anthrone or anthraquinone
157	......Phosphorus attached directly or indirectly to morpholine ring by nonionic bonding
158	......Sulfur attached directly or indirectly to morpholine ring by nonionic bonding
159	.......Nitrogen attached directly or indirectly to morpholine ring by nonionic bonding
160	........Double bonded divalent sulfur
161	.......Double bonded divalent sulfur
162	......Nitrogen attached directed or indirectly to morpholine ring by nonionic bonding
163	.......Cyano containing
164	.......Morpholine ring bonded directly to the nitrogen
165	.......Carbocyclic ring bonded directly to the nitrogen
166	........Morpholine ring bonded directly to the carbocyclic ring
167	........Nitro bonded directly to the carbocyclic ring
168	.......Oxygen double bonded and acyclic nitrogen bonded directly to the same carbon
169	........A ring bonded directly to the carbon
170	......Oxygen attched directly or indirectly to morpholine ring by nonionic bonding
171	.......The oxygen is in a -COO- group
172	........Carbonyl of -COO- group bonded directly to a ring
173	.......The oxygen is bonded directly to a ring
174	........Ether containing
175	.......The oxygen is in a carbonyl group
176	........The carbonyl is bonded directly to nitrogen of morpholine ring
177	.......Ether containing
178	......N-hydrocarbyl morpholines
179	...Tetrazines
180	...Triazines
181	....Heavy metal or aluminum containing
182	....Asymmetrical (e.g., 1, 2, 4-triazines, etc.)
183	.....Polycyclo ring system having the asymmetrical triazine ring as one of the cyclos
184	......Four or more ring hetero atoms in the polycyclo ring system
185	....Hexamethylenetetramines
186	.....Processes
187	....Anthrone or anthraquinone containing
188	.....Polycyclo ring system having the anthrone or anthraquinone and at least one hetero ring as cyclos
189	.....Sulfur containing
190	....Cyanuric chloride or dichloroisocyanuric acid salt
191	.....Processes utilizing cyanogen chloride reactant
192	....Cyanuric acid per se or salt thereof
193	....Trimerization process to form the triazine ring
193.1	....Stilbene containing
193.2	.....Plural triazine rings containing
194	....Substituent nitrogen bonded directly to carbon of the triazine ring
195	.....Phosphorus containing
196	.....Three substituent nitrogens bonded directly to the three carbons of the triazine ring
197	......Additional ring containing
198	.......Hetero ring
199	......Halogen or sulfur containing
200	......Melamine per se, or salt thereof
201	.......Processes utilizing urea or biuret reactant
202	.......Processes utilizing cyanamide or dicyanamide reactant
203	.......Purification or recovery
204	.....Two substituent nitrogens bonded directly to two carbons of the triazine ring
205	......Guanamines
206	.......Additional ring containing
207	........Hetero ring
208	......Additional ring containing
209	.......Hetero ring
210	......Sulfur containing
211	.....Additional ring containing
212	......Hetero ring
213	.....Sulfur containing
214	....Phosphorus containing

ORGANIC COMPOUNDS (Class 532, subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is six-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazines, etc.)
...Triazines
215 ....Chalcogen or halogen containing substituent
216 .....Bonded to triazine ring carbon
217 ......Halogen bonded directly to triazine ring carbon
218 ....Chalcogen bonded directly to triazine ring carbon
219 ......Chalcogen bonded directly to triazine ring carbon
220 ....Divalent chalcogen double bonded directly to triazine ring carbon
221 ....To three ring carbons
222 ....Nitrogen containing substituent
223 ....To two ring carbons
224 ...The six-membered hetero ring consists of two nitrogens and four carbons (e.g., 1,2-diazines, etc.)
225 ....Heavy metal or aluminum containing
226 .....Arsenic or zinc containing
227 .....Mercury containing
228 ......Purine containing (including hydrogenated)
229 ....Boron or silicon containing
230 ....Spiro
231 .....Spiro diazine
232 ....Phosphorus attached directly or indirectly to a 1, 2-diazine ring by nonionic bonding
233 ....Polycyclo ring system having a 1,2-diazine ring as one of the cyclos
234 .....Tricyclo ring system having the 1,2-diazine ring as one of the cyclos
235 .....Bicyclo ring system having the 1,2-diazine ring as one of the cyclos
236 ......At least three ring nitrogens in the bicyclo ring system
237 ......Phthalazines (including hydrogenated)
238 ....1,2-diazines which contain an additional hetero ring
239 ....Chalcogen bonded directly to ring carbon of a 1,2-diazine ring
240 .....Plural chalcogens bonded directly
241 .....Halogen attached directly to the 1,2-diazine ring by nonionic bonding
242 ....1,3-diazines
243 .....Phosphorus attached directly or indirectly to the diazine ring by nonionic bonding
244 ......Polycyclo ring system having the diazine ring as one of the cyclos
245 .....Polycyclo ring system having the diazine ring as one of the cyclos
246 ......Tetracyclo ring system having the diazine ring as one of the cyclos
247 ....Three or more ring hetero atoms in the tetracyclo ring system
248 ....Ring carbon is shared by three of the cyclos (e.g., anthrapyrimidine, etc.)
249 ......Tricyclo ring system having the diazine ring as one of the cyclos
250 ....Three or more ring hetero atoms in the tricyclo ring system
251 ....Four or more ring nitrogens in the tricyclo ring system
252 ....Ring nitrogen is shared by two of the cyclos
253 ......Bicyclo ring system having the diazine ring as one of the cyclos
254 ....At least five ring hetero atoms in the bicyclo ring system
255 ....Four ring hetero atoms in the bicyclo ring system
256 ....Four ring nitrogens in the bicyclo ring system
257 ....Pteridines (including hydrogenated)
258 ....Nitrogen bonded directly to the pteridine ring system
259 ....Plural nitrogens bonded directly to the pteridine ring system
260 ....At 2- and 4-positions
261 ....Pteroyl per se or having -C(=X)-, wherein X is chalcogen, bonded directly to acyclic nitrogen of otherwise unsubstituted pteroyl
262 ....The other cyclo in the bicyclo ring system is five-membered
263 ....Ring nitrogen is shared by two cyclos
264 ....Purines (including hydrogenated)
265 ....Chalcogen bonded directly to ring carbon of the purine ring system
266 ....At 2-, 6-, and 8- positions
267 ....At 2- and 6-positions (e.g., theophyllines, etc.)
268 ....Additional polycyclo ring system, which is not another purine, having a hetero ring as one of the cyclos
269 ....Additional hetero ring which is unsaturated and is not one of the cyclos of a purine ring system
270 ....Plural ring nitrogens in the additional hetero ring
271 ....Having -C(=X)-, wherein X is chalcogen attached directly or indirectly to the purine ring system by nonionic bonding or halogen bonded directly at 8-positions (e.g., theophylline acetate, 8-chlorotheophylline, etc.)
272 ....Nitrogen attached directly or indirectly to the purine ring system by nonionc bonding
273 ....Positions other than 2- and 6- are unsubstituted or hydrocarbyl substituted only (e.g., theophylline, etc.)

ORGANIC COMPOUNDS (Class 532, subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..hetero ring is six-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazines, etc.)
...The six-membered hetero ring consists of two nitrogens and four carbons (e.g., 1,2-diazines, etc.)
....1,3-diazines
.....Polycyclo ring system having the diazine ring as one of the cyclos
......Bicyclo ring system having the diazine ring as one of the cyclos
.......Four ring hetero atoms in the bicyclo ring system
........Four ring nitrogens in the bicyclo ring system
.........The other cyclo in the bicyclo ring system is five-membered
..........Purines (including hydrogenated)
...........Chalcogen bonded directly to ring carbon of the purine ring system
............At 2- and 6-positions (e.g., theophyllines, etc.)
.............Positions other than 2- and 6- are unsubstituted or hydrocarbyl substituted only (e.g., theophylline, etc.)

274 ....Recovery of caffeine per se, theobromine per se, or salt thereof, from natural or waste material
275 ....Caffeine per se, theobromine per se, or salt thereof
276 ....Nitrogen attached directly or indirectly to the purine ring system by nonionic bonding
277 ....Nitrogen attached directly or indirectly to the purine ring system by nonionic bonding
278 ....Three ring hetero atoms in the bicyclo ring system
279 ....Three ring nitrogens in the bicyclo ring system
280 ....The other cyclo in the bicyclo ring system is five-membered
281 ....Ring nitrogen is shared by the two cyclos
282 ....Ring nitrogen is shared by two cyclos
283 ....The other cyclo in the bicyclo ring system is a benzene ring (e.g., quinazoline, etc.)
284 ....Additional nitrogen containing unsaturated hetero ring (e.g., thiazole, etc.)
285 ....Chalcogen bonded directly at 2- and 4-positions
286 ....Chalcogen bonded directly at 2-position
287 ....Chalcogen bonded directly at 4-position
288 ....Sulfur bonded directly at 6-position
289 ....Carbocyclic ring bonded directly at 2-position
290 ....Carbocyclic ring bonded directly at 3-position
291 ....Nitrogen bonded directly at 2- and 4-positions
292 ....Nitrogen bonded directly at 2-position
293 ....Nitrogen bonded directly at 4-position
294 .....Polycyclo-carbocyclic ring system having at least three cyclos
295 .....Plural diazine rings
296 ......Plural 1,3-diazine rings
297 .....Nitrogen attached directly at 2-position by nonionic bonding and sulfur bonded directly to the nitrogen
298 .....Chalcogen bonded directly to diazine ring carbon
299 ......At 2-, 4-, and 6-positions (e.g., barbituric acid, etc.)
300 ....Additional hetero ring which is unsaturated
301 ....Nitrogen attached directly or indirectly to the diazine ring by nonionic bonding
302 ....Additional chalcogen attached directly or indirectly to the diazine ring by nonionic bonding
303 ....Halogen attached directly or indirectly to the diazine ring by nonionic bonding
304 ....Alicyclic ring attached directly or indirectly to the diazine ring by nonionic bonding
305 ....Phenyl bonded directly at 5-position
306 ....Acyclic ethylenic or acetylenic unsaturation containing
307 ....Plural alkyl groups bonded directly at 5-position
308 ....Plural diverse alkyl groups bonded directly at 5-position
309 ......At 2-position and at 4- or 6-position
310 ....Additional hetero ring which is unsaturated
311 ....Nitrogen attached directly or indirectly to the diazine ring by nonionic bonding
312 ....5-position is unsubstituted or alkyl substituted only
313 ....Halogen attached directly to the diazine ring by nonionic bonding
314 ....Additional chalcogen attached directly or indirectly to the diazine ring by nonionic bonding
315 ......At 2-position
316 ....Nitrogen attached directly or indirectly to the diazine ring by nonionic bonding
317 ....The nitrogen is bonded directly at 4- or 6-position
318 ....Additional chalcogen attached directly or indirectly to the diazine ring by nonionic bonding
319 ......At 4- or 6-position
320 ....Nitrogen attached directly at 2-position by nonionic bonding
321 ....Carbocyclic ring containing
322 .....Nitrogen attached directly to diazine ring by nonionic bonding

ORGANIC COMPOUNDS (Class 532, subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is six-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazines, etc.)
...The six-membered hetero ring consists of two nitrogens and four carbons (e.g., 1,2-diazines, etc.)
....1,3-diazines
.....Nitrogen attached directly to diazine ring by nonionic bonding
323 ......At 2-position and at 4- or 6-position
324 ....Additional hetero ring which is unsaturated
325 ....Substituent on 5-position contains carbocyclic ring
326 ......At 4- or 6-position
327 ....Sulfur attached indirectly to the diazine ring by nonionic bonding (e.g., thiamines, etc.)
328 ....Additional hetero ring which is unsaturated
329 ....Carbonyl attached directly or indirectly to the diazine ring by nonionic bonding
330 ......At 2-position
331 ....Additional hetero ring which is unsaturated
332 ....Chalcogen attached indirectly to the diazine ring by nonionic bonding
333 .....Additional hetero ring which is unsaturated
334 .....Halogen attached directly to the diazine ring by nonionic bonding
335 .....Chalcogen attached indirectly to the diazine ring by nonionic bonding
336 ....1,4-diazines
337 .....Phosphorus attached directly or indirectly to the diazine ring by nonionic bonding
338 .....Polycyclo ring system having the diazine ring as one of the cyclos
339 ......Heptacyclo ring system having the diazine ring as one of the cyclos (e.g., indanthrones, etc.)
340 ....Chalcogen attached indirectly to the heptacyclo ring system by nonionic bonding
341 ....Halogen, nitrogen, or carbon attached directly to the heptacyclo ring system by nonionic bonding
342 ......Pentacyclo ring system having the diazine ring as one of the cyclos
343 ......Tetracyclo ring system having the diazine ring as one of the cyclos (e.g., benzophenazines, etc.)
344 ......Tricyclo ring system having the diazine ring as one of the cyclos
345 ....Three or more ring hetero atoms in the tricyclo ring system
346 ....Ring nitrogen is shared by two of the cyclos (e.g., ergot, alkaloids, etc.)
347 ....Phenazines (including hydrogenated)
348 ....Nitrogen attached directly to the phenazine ring system by nonionic bonding
349 ......Bicyclo ring system having the diazine ring as one of the cyclos
350 ....Three or more ring hetero atoms in the bicyclo ring system
351 ....Triethylene diamines
352 ....Process of forming, purifying, or recovering triethylene diamine per se, or salt thereof
353 ....Quinoxalines (including hydrogenated)
354 ....Chalcogen bonded directly to diazine ring carbon
355 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to diazine ring carbon
356 ....Halogen or nitrogen attached directly to diazine ring carbon by nonionic bonding
357 .....Plural diazine rings
358 .....Piperazines (i.e., fully hydrogenated 1,4-diazines)
359 ......Additional hetero ring containing
360 ....Six-membered ring consisting of one nitrogen and five carbons (e.g., pyridine, etc.)
361 ....The additional six-membered hetero ring is one of the cyclos in a polycyclo ring system
362 ....The additional six-membered hetero ring is one of the cyclos in a bicyclo ring system
363 ....Quinoline or isoquinoline (including hydrogenated)
364 ....At least three hetero rings containing
365 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to ring carbon of the additional six-membered hetero ring (e.g., nicotinic acid, etc.)
366 ....Five-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen
367 ....Ring chalcogen in the five-membered hetero ring
368 ....The five-membered hetero ring is one of the cyclos in a polycyclo ring system
369 ....1,3-oxazole ring or 1,3-thiazole ring (including hydrogenated)
370 ....1,3-diazole ring (including hydrogenated)
371 ....1,2-diazole ring (including hydrogenated)
372 ....Five-membered hetero ring consisting of one nitrogen and four carbons
373 ....The five-membered hetero ring is one of the cyclos in a bicyclo ring system
374 ....Ring chalcogen in the additional hetero ring
375 ....Polycyclo ring system having the additional hetero ring as one of the cyclos

ORGANIC COMPOUNDS (Class 532, subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is six-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazines, etc.)
...The six-membered hetero ring consists of two nitrogens and four carbons (e.g., 1,2-diazines, etc.)
....1,4-diazines
.....Piperazines (i.e., fully hydrogenated 1,4-diazines)
......Additional hetero ring containing
.......Ring chalcogen in the additional hetero ring
........Polycyclo ring system having the additional hetero ring as one of the cyclos
376 ....Bicyclo ring system having the additional hetero ring as one of the cyclos
377 ....Plural ring chalcogens in the bicyclo ring system
378 ....Plural ring chalcogens in the polycyclo ring system or the piperazine ring bonded directly to the polycyclo ring system
379 ....The additional hetero ring is five-membered and unsaturated (e.g., thienyl piperazines, etc.)
380 ......Polycyclo-carbocyclic ring system having at least three cyclos
381 ....Piperazine ring bonded directly to the polycyclo-carbocyclic ring system
382 ......Nitrogen attached directly to the piperazine ring by nonionic bonding
383 ......Chalcogen attached directly to piperazine ring nitrogen by nonionic bonding
384 ......Chalcogen bonded directly to piperazine ring carbon
385 ....Plural chalcogens bonded directly to piperazine ring carbons
386 ......Having -C(=X)-, wherein X is chalcogen, bonded directly to the piperazine ring
387 ....Plural -C(=X)- groups bonded directly to the piperazine ring
388 ....Chalcogen or acyclic nitrogen bonded directly to at least one of the -C(=X)- groups
389 ....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
390 ....Halogen or acyclic nitrogen bonded directly to the -C(=X)- group
391 ....Carbocyclic ring containing
392 ......Phenyl or naphthyl bonded directly to ring nitrogen of the piperazine ring
393 ....Acyclic nitrogen bonded directly to a -C(=X)- group, wherein X is chalcogen
394 ....The other ring nitrogen has a substituent which includes chalcogen single bonded to acyclic carbon
395 ....The other ring nitrogen is unsubstituted or alkyl substituted only, or salt thereof
396 ......Plural carbocyclic rings bonded directly to the same acyclic carbon
397 ....Chalcogen bonded directly to the carbon
398 ......Chalcogen attached indirectly to the piperazine ring by nonionic bonding
399 ....The chalcogen, X, is in a -C(=X)- group
400 ....Acyclic nitrogen bonded directly to the -C(=X)- group
401 ....The chalcogen is single bonded to both acyclic carbon and hydrogen
402 ......Nitrogen attached indirectly to the piperazine ring by nonionic bonding
403 ......Carbocyclic ring containing
404 ......N-hydrocarbyl piperazines
405 .....Additional hetero ring which is unsaturated
406 .....Having -C(=X)-, wherein X is chalcogen, bonded directly to the diazine ring
407 ......Nitrogen attached directly to the diazine ring by nonionic bonding
408 .....Chalcogen bonded directly to diazine ring carbon
409 .....Halogen attached directly to the diazine ring by nonionic bonding
410 .....Unsubstituted or hydrocarbyl substituted only, or salt thereof

CLASS 546 PART OF THE CLASS 532-570 SERIES -- ORGANIC COMPOUNDS

DECEMBER 1990

> IN THIS SERIES OF CLASSES, CLASS 546 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)

1 ..Hetero ring is six-membered consisting of one nitrogen and five carbons

2 ...Heavy metal or aluminum containing

3 ....Arsenic containing

4 ....The metal bonded directly to carbon, which carbon is a ring carbon of the six-membered hetero ring or which carbon is attached directly or indirectly to the six-membered hetero ring by nonionic bonding

5 ....The metal is bonded directly to chalcogen of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens, which group is attached directly or indirectly to the six-membered hetero ring by nonionic bonding

6 ....The metal is bonded directly to chalcogen which chalcogen is attached directly or indirectly to the six-membered hetero ring by nonionic bonding

7 .....The chalcogen is bonded directly to ring carbon of a quinoline ring system (including hydrogenated)

8 ....The metal is in an anion and the six-membered hetero ring is in a cation

9 .....The metal is bonded directly to halogen in the anion

10 ....Polycyclo ring system having the six-membered hetero ring as one of the cyclos

11 ....Piperidine containing

12 ....Azide or acyclic nitrogen containing

13 ...Boron containing

14 ...Silicon containing

15 ...Spiro

16 ....The spiro includes the six-membered hetero ring

17 .....Polycyclo ring system having one of the two rings which form the spiro as one of the cyclos

18 ......Polycyclo ring system having the six-membered hetero ring as one of the cyclos

19 .....At least three ring hetero atoms in the two rings which form the spiro

20 ......At least three ring nitrogens in the two rings which form the spiro

21 ...Phosphorus attached directly to the six-membered hetero ring by nonionic bonding

22 ...Phosphorus attached indirectly to the six-membered hetero ring by nonionic bonding

23 ....Polycyclo ring system having the six-membered hetero ring as one of the cyclos

24 ....Chalcogen bonded directly to ring carbon of the six-membered hetero ring

25 .....The phosphorus is bonded directly to the chalcogen

26 ...Polycyclo ring system having the six-membered hetero ring as one of the cyclos

27 ....The polycyclo ring system has at least ten cyclos and at least four ring nitrogens

28 ....Nonacyclo ring system having the six-membered hetero ring as one of the cyclos

29 .....The six-membered hetero ring shares ring nitrogen with a five-membered cyclo which contains additional ring nitrogen

30 ....Octacyclo ring system having the six-membered hetero ring as one of the cyclos

31 .....Plural ring hetero atoms in the octacyclo ring system (e.g., flavanthrone, cepharanthrine, etc.)

32 ......At least four ring nitrogens in the octacyclo ring system (e.g., naphthoylene dibenzimidazole, etc.)

33 ....Heptacyclo ring system having the six-membered hetero ring as one of the cyclos

34 .....Two of the cyclos share at least three ring members (e.g., protoveratrine, etc.)

35 ......At least three ring hetero atoms in the heptacyclo ring system

36 .....Plural ring hetero atoms in the heptacyclo ring system

37 ......Ring carbon is shared by three of the cyclos (e.g., perylene tetracarboxylic acid diimide, etc.)

38 ....Hexacyclo ring system having the six-membered hetero ring as one of the cyclos

39 .....Two of the cyclos share at least three ring members (e.g., etheno morphides, etc.)

40 ......Plural ring nitrogens in the hexacyclo ring system (e.g., reserpic acid lactone, etc.)

41 .....Plural ring hetero atoms in the hexacyclo ring system

42 ....Pentacyclo ring system having the six-membered hetero ring as one of the cyclos

43 .....Two of the cyclos share at least three ring members (i.e., bridged)

44 ......One of the five cyclos is five-membered and includes ring chalcogen (e.g., codeine, morphine, etc.)

45 ....Nitrogen or divalent chalcogen double bonded directly to carbocyclic ring of the pentacyclo ring system (e.g., morphinones, etc.)

46 ....A single chalcogen is bonded directly to ring carbon of the pentacyclo ring system (e.g., desoxy morphine, etc.)

47 .....Plural ring hetero atoms in the pentacyclo ring system

48 ......Three or more ring hetero atoms in the pentacyclo ring system

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)

..Hetero ring is six-membered consisting of one nitrogen and five carbons

...Polycyclo ring system having the six-membered hetero ring as one of the cyclos

....Pentacyclo ring system having the six-membered hetero ring as one of the cyclos

.....Plural ring hetero atoms in the pentacyclo ring system

49 ......Two ring nitrogens in the pentacyclo ring system (e.g., quinacridones, etc.)

50 ....Ring nitrogen is shared by two of the cyclos (e.g., yohimbanes, etc.)

51 ....Ring nitrogen is shared by five-membered cyclo and six-membered cyclo (e.g., vincamine, etc.)

52 ....Additional ring nitrogen in the five-membered cyclo

53 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to ring carbon of the pentacyclo ring system and also bonded directly to chalcogen or nitrogen

54 ....Plural chalcogens bonded directly to the same cyclo as is the -(C=X)- group

55 ....Trialkoxybenzoyl bonded directly to at least one of the chalcogens (e.g., reserpine, etc.)

56 ....Three or more ring carbons of the pentacyclo ring system are substituted (e.g., substituted quinacridones, etc.)

57 ....Three or more chalcogens containing

58 .....The pentacyclo ring system consists of five six-membered cyclos (e.g., anthraquinonebenzacridones, etc.)

59 ......Nitrogen attached directly to the pentacyclo ring system by nonionic bonding

60 ....An additional ring is bonded directly to the nitrogen

61 ....Tetracyclo ring system having the six-membered hetero ring as one of the cyclos

62 .....Plural ring hetero atoms in the tetracyclo ring system (e.g., acronycines, etc.)

63 ......Two of the cyclos share at least three ring member (i.e., bridged)

64 ......Three or more ring hetero atoms in the tetracyclo ring system

65 ....Plural ring chalcogens in the tetracyclo ring system

66 ......Ring carbon is shared by three of the cyclos

67 ....The three cyclos consist of two carbocyclic rings and a five-membered hetero ring which includes a ring nitrogen (e.g., ergolines, etc.)

68 ....Chalcogen or nitrogen bonded directly to ring carbon of the six-membered hetero ring

69 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the six-membered hetero ring (e.g., lysergic acid, etc.)

70 ......Two ring nitrogens in the tetracyclo ring system

71 .....Ring nitrogen is shared by two of the cyclos

72 ......Two of the cyclos share at least three ring members or a ring carbon is shared by three of the cyclos (i.e., bridged or peri-fused)

73 ......The six-membered hetero ring shares ring members with one other cyclo only (e.g., pyrrocolines, etc.)

74 .....Two of the cyclos share at least three ring members (e.g., morphinans, etc.)

75 .....Ring carbon is shared by three of the cyclos

76 ......Chalcogen bonded directly to ring carbon of the six-membered hetero ring (e.g., anthrapyridones, etc.)

77 .....The six-membered hetero ring shares ring members with one other cyclo only

78 ......Plural chalcogens bonded directly to carbocyclic rings of the tetracyclo ring system (e.g., pyridoanthraquinones, etc.)

79 ....Tricyclo ring system having the six-membered hetero ring as one of the cyclos

80 .....Plural ring hetero atoms in the tricyclo ring system

81 ......Plural ring nitrogens in the tricyclo ring system

82 ....Three or more ring hetero atoms in the tricyclo ring system

83 ....At least one of the ring hetero atoms is chalcogen

84 ....One of the cyclos is five-membered

85 ....The six-membered hetero ring shares ring members with the five-membered cyclo only (e.g., pyrido-indoles, etc.)

86 ....Chalcogen bonded directly to ring carbon of the tricyclo ring system

87 ....Nitrogen attached directly or indirectly to the tricyclo ring system by nonionic bonding

88 ....Phenanthrolines (including hydrogenated)

89 ......Ring oxygen in the tricyclo ring system

90 ....Plural ring oxygens in the tricyclo ring system

91 ....Tropane and oxirane in the tricyclo ring system

92 ....Plural chalcogens bonded directly to ring carbons of the tricyclo ring system

93 .....One of the cyclos has at least seven members

94 .....Ring nitrogen is shared by two of the cyclos

95 ......Benzo(a)quinolizines (including hydrogenated)

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is six-membered consisting of one nitrogen and five carbons
...Polycyclo ring system having the six-membered hetero ring as one of the cyclos
....Tricyclo ring system having the six-membered hetero ring as one of the cyclos
.....Ring nitrogen is shared by two of the cyclos
......Benzo(a)quinolizines (including hydrogenated)
96 ....Additional polycyclo ring system having ring nitrogen (e.g., emetine, etc.)
97 .....Two of the cyclos share at least three ring carbons (e.g., benzomorphans, etc.)
98 .....Ring carbon is shared by each of the three cyclos (e.g., 1,8-naphthalimides, etc.)
99 ......Nitrogen, other than as nitro or nitroso, attached directly or indirectly to the tricyclo ring system by nonionic bonding
100 ....The nitrogen is bonded directly to a carbocyclic ring of the tricyclo ring system
101 .....Each of the three cyclos is six-membered (e.g., benzoquinolines, etc.)
102 ......Acridines (including hydrogenated)
103 ....Chalcogen bonded directly to ring carbon of the six-membered hetero ring
104 ....Nitrogen, other than as nitro or nitroso, attached directly or indirectly to the acridine ring system by nonionic bonding
105 ....The nitrogen is bonded directly to ring carbon of the six-membered hetero ring
106 ....The nitrogen is part of a substituent which contains additional nonionically bonded nitrogen
107 ....Plural nitrogens, other than as nitro or nitroso, attached directly to the carbocyclic rings of the acridine ring system (e.g., 3,6-diaminoacridines, etc.)
108 ......Phenanthridines (including hydrogenated)
109 ....Unsaturated ring bonded directly to ring carbon of the six-membered hetero ring
110 ......Chalcogen or -C(=X)-, wherein X is chalcogen, attached directly to the six-membered hetero ring by nonionic bonding
111 .....The tricyclo ring system consists of a five-membered carbocyclic ring ortho fused to both a six-membered carbocyclic ring and the six-membered hetero ring (e.g., indenopyridines, etc.)
112 ....Bicyclo ring system having the six-membered hetero ring as one of the cyclos
113 .....Plural ring hetero atoms in the bicyclo ring system
114 ......Ring sulfur in the bicyclo ring system
115 ......Ring oxygen in the bicyclo ring system
116 ....Acyclic chalcogen bonded directly to ring carbon of the bicyclo ring system
117 ......At least four ring nitrogens in the bicyclo ring system
118 ......Three ring nitrogens in the bicyclo ring system
119 ....Two of the ring nitrogens are bonded directly to each other
120 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the bicyclo ring system
121 ......Ring nitrogen is shared by the two cyclos
122 ......The other cyclo in the bicyclo ring system is also six-membered (e.g., naphthyridines, etc.)
123 ....Chalcogen and -C(=X)-, wherein X is chalcogen, bonded directly to ring carbons of the bicyclo ring system (e.g., 4-oxo-naphthyridine -3-carboxylic acid, etc.)
124 .....Tropanes (including nor and dehydro forms)
125 ......Additional hetero ring containing
126 ....Additional polycyclo ring system having the additional hetero ring as one of the cyclos
127 ......Chalcogen bonded directly to ring carbon of the tropane ring system
128 ....Polycyclo-carbocyclic ring system
129 ....Additional chalcogen attached directly or indirectly to the tropane ring system by nonionic bonding
130 ....Three or more oxygens attached directly or indirectly to the tropane ring system by nonionic bonding
131 ....Hydroxy containing or containing oxy bonded directly to a Group IA or Group IIA light metal (i.e., -OH or -OM containing)
132 ......Having -C(=X)-, wherein X is chalcogen, bonded directly to the tropane ring system
133 .....Quinuclidines (including unsaturated)
134 ......Quinoline containing (including hydrogenated)
135 ....Additional hetero ring containing
136 ....Three or more chalcogens attached indirectly to the quinuclidine ring system by nonionic bonding
137 ......Chalcogen bonded directly to ring carbon of the quinuclidine ring system
138 .....Quinolizines (including hydrogenated)
139 .....Isoquinolines (including hydrogenated)
140 ......Plural isoquinoline ring systems attached directly or indirectly to each other by nonionic bonding
141 ......Chalcogen attached directly to the six-membered hetero ring by nonionic bonding

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)

..Hetero ring is six-membered consisting of one nitrogen and five carbons

...Polycyclo ring system having the six-membered hetero ring as one of the cyclos

....Bicyclo ring system having the six-membered hetero ring as one of the cyclos

.....Isoquinolines (including hydrogenated)

......Chalcogen attached directly to the six-membered hetero ring by nonionic bonding

142 ....Plural chalcogens attached directly to the six-membered hetero ring by nonionic bonding

143 ......Nitrogen, other than as nitro or nitroso, attached directly to the isoquinoline ring system by nonionic bonding

144 ......Unsaturated ring attached directly to the six-membered hetero ring by nonionic bonding

145 ......Acyclic nitrogen double or triple bonded to carbon which is attached directly or indirectly to the isoquinoline ring system by nonionic bonding

146 ......Having -C(=X)-, wherein X is chalcogen, attached directly or indirectly to the isoquinoline ring system by nonionic bonding

147 ....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

148 ......Unsaturated hetero ring attached indirectly to the isoquinoline ring system by nonionic bonding

149 ......Unsaturated carbocyclic ring attached indirectly to the six-membered hetero ring through an acyclic hydrocarbon chain

150 ......Single bond between 3,4-positions

151 ......N-alkyl or N-alkenyl isoquinoliniums which are otherwise unsubstituted or alkyl or alkenyl substituted only

152 .....Quinolines (including hydrogenated)

153 ......Chalcogen attached directly to the six-membered hetero ring by nonionic bonding

154 ....Polycyclo-carbocyclic ring system bonded directly to the six-membered hetero ring (e.g., quinophthalones, etc.)

155 ....Plural chalcogens attached directly to the six-membered hetero ring by nonionic bonding

156 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the six-membered hetero ring

157 ....Chalcogen attached directly at 2-position by nonionic bonding

158 ....Single bond between 3,4-positions

159 ......Nitrogen, other than as nitro or nitroso, attached directly to the six-membered hetero ring by nonionic bonding

160 ....Unsaturated carbocyclic ring bonded directly to the nitrogen

161 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the carbocyclic ring

162 ....Nitrogen attached indirectly to the six-membered hetero ring through the directly attached nitrogen by nonionic bonding

163 ....Both nitrogens bonded directly to the same acyclic hydrocarbon group

164 ......Fully saturated quinolines

165 ......Single bond between 1,2-positions and single bond between 3,4-positions

166 ....The six-membered hetero ring is unsubstituted or alkyl substituted only

167 ......Unsaturated hetero ring attached directly to the quinoline ring system by nonionic bonding

168 ......Having -C(=X)-, wherein X is chalcogen, bonded directly to the quinoline ring system

169 ....Acyclic nitrogen bonded directly to the -C(=X)- group

170 ....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

171 ......Nitrogen, other than as nitro or nitroso, attached directly to the carbocyclic ring of the quinoline ring system by nonionic bonding

172 ......Acyclic sulfur bonded directly to oxygen and directly or indirectly to the quinoline ring system by nonionic bonding

173 ......Unsaturated carbocyclic ring attached directly to the quinoline ring system by nonionic bonding (e.g., quinophthalones, etc.)

174 ......Having -C(=X)-, wherein X is chalcogen, attached indirectly to the quinoline ring system by nonionic bonding

175 ....Nitrogen bonded directly to the -C(=X)- group

176 ....Nitrogen, other than as nitro or nitroso, attached indirectly to the quinoline ring system by nonionic bonding

177 ....Chalcogen attached directly to the carbocyclic ring of the quinoline ring system by nonionic bonding

178 ......Chalcogen attached directly to the carbocyclic ring of the quinoline ring system by nonionic bonding

179 ....The chalcogen is in an -OH, -SH, -OM or -SM group (M is Group IA or Group IIA light metal)

180 ......Halogen or nitro attached directly or indirectly to the quinoline ring system by nonionic bonding

181 ......Quinolines which are unsubstituted or which are alkyl or alkenyl substituted only, or salt thereof

182 ....Addition salts

183 .....Chalcogen bonded directly to ring carbon of the bicyclo ring system

184 ...Piperidines

185 ....Process of forming a piperidine ring from a pyridine ring or from a partially hydrogenated pyridine ring

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is six-membered consisting of one nitrogen and five carbons
...Piperidines
186 ....Plural piperidine rings
187 .....Additional hetero ring containing
188 .....Chalcogen attached directly to a ring carbon of a piperidine ring by nonionic bonding
189 .....Having -C(=X)-, wherein X is chalcogen, bonded directly to a piperidine ring
190 .....Having -C(=X)-, wherein X is chalcogen, attached indirectly to a piperdine ring by nonionic bonding
191 .....Carbocyclic ring containing
192 ....Additional ring containing
193 .....Pyridine ring or partially hydrogenated pyridine ring
194 ......Carbocyclic ring containing
195 .....The additional ring is one of the cyclos in a polycyclo ring system
196 ......Hetero ring in the polycyclo ring system
197 ....Plural ring hetero atoms in the polycyclo ring system
198 ....Ring nitrogen in the polycyclo ring system
199 ....Plural ring nitrogens in the polycyclo ring system
200 ....Ring nitrogen in the polycyclo ring system
201 ....Bicyclo ring system which is indole (including hydrogenated)
202 ....Ring sulfur in the polycyclo ring system
203 ......The polycyclo ring system is tricyclo-carbocyclic
204 ....Chalcogen bonded directly to the tricyclo-carbocyclic ring system
205 ......The polycyclo ring system is bicyclo-carbocyclic
206 ....Chalcogen bonded directly to the bicyclo-carbocyclic ring system
207 .....The additional ring is a hetero ring
208 ......Ring nitrogen in the additional hetero ring
209 ....Ring sulfur or ring oxygen in the additional hetero ring
210 ....Plural ring nitrogens in the additional hetero ring
211 ....1,2-diazole (including hydrogenated)
212 ......The additional hetero ring consists of one sulfur and four carbons
213 ....Carbocyclic ring containing
214 ......The additional hetero ring consists of one oxygen and four carbons
215 .....Cyano bonded directly to the piperidine ring
216 .....Chalcogen bonded directly to ring carbon of the piperidine ring
217 ......Chalcogen and a carbocyclic ring bonded directly at 4-position
218 ....The chalcogen, X, is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
219 ......Plural chalcogens bonded directly to ring carbons of the piperidine ring
220 ....Having -C(=X)-, wherein X is chalcogen, attached directly or indirectly to the piperidine ring by nonionic bonding
221 ......Having -C(=X)-, wherein X is chalogen, attached directly or indirectly to the piperidine ring by nonionic bonding
222 ....The -C(=X)- group and the piperidine ring are bonded directly to the same chalcogen
223 .....Nitrogen attached directly to the piperidine ring by nonionic bonding
224 ......Acyclic nitrogen bonded directly to a -C(=X)- group, wherein X is chalcogen
225 .....Having -C(=X)-, wherein X is chalcogen, bonded directly to the piperidine ring
226 ......At 1-position
227 ......The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
228 ....Carbocyclic ring bonded directly at 4-position
229 .....Nitrogen attached indirectly to the piperidine ring by nonionic bonding
230 ......Cyano attached indirectly to the piperidine ring by nonionic bonding
231 ......Plural acyclic nitrogens bonded directly to the same carbon or single bonded directly to each other
232 ......Chalcogen attached indirectly to the piperidine ring by nonionic bonding
233 ....Acyclic nitrogen bonded directly to a -C(=X)- group, wherein X is chalcogen
234 ....Plural carbocyclic rings containing
235 ....The chalcogen, X, is in a -C(=X)- group
236 .....Chalcogen attached indirectly to the piperidine ring by nonionic bonding
237 ......The chalcogen, X, is in a -C(=X)- group
238 ....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
239 ....Plural carbocyclic rings containing
240 ......The chalcogen is in an -OH or -OM group (M is Group IA or Group IIA light metal)
241 ....The -OH or -OM is bonded to an acyclic carbon, which carbon is bonded directly to two rings
242 ....Chalcogen bonded directly to ring carbon of the piperidine ring
243 .....At 2-position
244 ....Nitrogen attached directly to the piperidine ring by nonionic bonding
245 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the piperidine ring

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is six-membered consisting of one nitrogen and five carbons
...Piperidines
246 ....Nitrogen attached indirectly to the piperidine ring by nonionic bonding
247 .....Acyclic nitrogen bonded directly to a -C(=X)- group, wherein X is chalcogen
248 ....Chalcogen attached indirectly to the piperidine ring by nonionic bonding
249 ...Process of forming partially hydrogenated pyridine ring
250 ...Process of forming pyridine ring
251 ....The pyridine ring is unsubstituted or hydrocarbyl substituted only
252 .....Starting materials include a nitrogen containing hetero ring (e.g., starting materials include a piperidine ring, etc.)
253 .....Starting materials include a hydrocarbon
254 .....Starting materials include an acyclic hydrocarbyl ether or an acyclic hydrocarbyl alcohol
255 ...Plural pyridine or partially hydrogenated pyridine rings
256 ....Additional hetero ring containing
257 ....Pyridine or partially hydrogenated pyridine rings are bonded directly to each other
258 .....Halogen containing or process utilizing halogen or halogen containing compound
259 ......Metal containing catalyst utilized
260 .....Metal containing catalyst utilized
261 ....Chalcogen bonded directly to ring carbon of pyridine or partially hydrogenated pyridine ring
262 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to pyridine or partially hydrogenated pyridine ring
263 .....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
264 ....Acyclic nitrogen attached directly or indirectly to pyridine or partially hydrogenated pyridine ring by nonionic bonding
265 .....Having -C(=X)-, wherein X is chalcogen, bonded directly to the acyclic nitrogen
266 ....Chalcogen attached indirectly to pyridine or partially hydrogenated pyridine ring by nonionic bonding
267 .....The chalcogen, X, is in a -C(=X)- group
268 ...Additional hetero ring containing
269 ....The additional hetero ring is one of the cyclos in a polycyclo ring system
270 .....Plural ring hetero atoms in the polycyclo ring system
271 ......Plural ring nitrogens in the polycyclo ring system
272 .....Ring nitrogen in the polycyclo ring system
273 ......Bicyclo ring system which is indole (including hydrogenated)
274 .....Ring sulfur in the polycyclo ring system
275 ....Ring nitrogen in the additional hetero ring (e.g., oxazole, etc.)
276 .....Plural ring nitrogens in the additional hetero ring
277 ......Ring chalcogen in the additional hetero ring
278 ......The additional hetero ring consists of two nitrogens and three carbons
279 ....1,2-diazole (including hydrogenated)
280 .....Ring sulfur in the additional hetero ring
281 .....The additional hetero ring consists of one nitrogen and four carbons
282 ......Nicotine per se or salt thereof
283 ....The additional hetero ring is five-membered
284 .....Ring sulfur in the additional hetero ring
285 ...Polycyclo-carbocyclic ring system having at least three cyclos
286 ...Cyano bonded directly to the six-membered hetero ring
287 ....Additional cyano containing
288 ....Chalcogen bonded directly to ring carbon of the six-membered hetero ring
289 ....Nitrogen attached directly to the six-membered hetero ring by nonionic bonding
290 ...Chalcogen bonded directly to ring carbon of the six-membered hetero ring
291 ....Chalcogen and acyclic nitrogen bonded directly to the same carbon
292 .....The chalcogen or the acyclic nitrogen is bonded directly to the six-membered hetero ring
293 ....Sulfur bonded directly to acyclic nitrogen
294 ....Chalcogen bonded directly to chalcogen
295 .....Halogen bonded directly to the six-membered hetero ring by nonionic bonding
296 ....Plural chalcogens bonded directly to ring carbons of the six-membered hetero ring
297 ....Nitrogen attached directly to the six-membered hetero ring by nonionic bonding
298 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the six-membered hetero ring
299 .....Plural -C(=X)- groups, wherein X is chalcogen, bonded directly to the six-membered hetero ring
300 ....Nitrogen attached indirectly to the six-membered hetero ring by nonionic bonding
301 ....Chalcogen attached indirectly to the six-membered hetero ring by nonionic bonding
302 .....Halogen attached directly or indirectly to the six-membered hetero ring by nonionic bonding
303 ....Halogen attached directly or indirectly to the six-membered hetero ring by nonionic bonding
304 ...Nitrogen attached directly to the six-membered hetero ring by nonionic bonding
305 ....Sulfur and acyclic nitrogen bonded directly to the same carbon

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is six-membered consisting of one nitrogen and five carbons
...Nitrogen attached directly to the six-membered hetero ring by nonionic bonding
306 ....Plural acyclic nitrogens bonded directly to the same carbon or single bonded directly to each other
307 ....Plural nitrogens attached directly to the six-membered hetero ring by nonionic bonding
308 .....Acyclic nitrogen bonded directly to a -C(=X)- group, wherein X is chalcogen
309 ....Acyclic nitrogen bonded directly to a -C(=X)- group, wherein X is chalcogen
310 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the six-membered hetero ring
311 ....The nitrogen bonded additionally only to hydrogen
312 ....Chalcogen attached indirectly to the six-membered hetero ring by nonionic bonding
313 ...Thiocarbonyl bonded directly to the six-membered hetero ring
314 ...Carbonyl bonded directly to the six-membered hetero ring
315 ....At 3-position
316 .....Acyclic nitrogen bonded directly to the carbonyl
317 ......Processes of obtaining nicotinamide per se
318 .....The carbonyl is in a -COO- group
319 ......Processes of obtaining nicotinic acid per se or a derivative of nicotinic acid wherein the only substituents are -COO- groups, or salt thereof
320 ....By oxidation
321 ......Additional -COO- group bonded directly to the six-membered hetero ring
322 ......Carbocyclic ring containing
323 ....Acyclic nitrogen bonded directly to the carbonyl
324 .....Acyclic nitrogen single bonded directly to acyclic nitrogen
325 ......Carbon double bonded directly to one of the acyclic nitrogens
326 ....The carbonyl is in a -COO- group
327 .....Processes
328 ....Acyclic nitrogen attached indirectly to the six-membered hetero ring by nonionic bonding
329 ...Nitrogen attached indirectly to the six-membered hetero ring by nonionic bonding
330 ....Cyano attached indirectly to the six-membered hetero ring by nonionic bonding
331 ....Sulfur and acyclic nitrogen bonded directly to the same carbon
332 ....Plural acyclic nitrogens bonded directly to the same carbon or single bonded directly to each other
333 ....The six-membered hetero ring and another ring bonded directly to the same carbon
334 ....Chalcogen attached indirectly to the six-membered hetero ring by nonionic bonding
335 .....The chalcogen, X, is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
336 .....Acyclic nitrogen bonded directly to a -C(=X)- group, wherein X is chalcogen
337 ......Additional ring containing
338 .....Acyclic nitrogen bonded directly to chalcogen
339 ...Chalcogen attached indirectly to the six-membered hetero ring by nonionic bonding (e.g., sulfato betaines, etc.)
340 ....The chalcogen, X, is in a -C(=X)- group
341 .....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same of diverse chalcogens
342 ......Additional ring containing
343 ....The six-membered hetero ring and another ring bonded directly to the same carbon
344 ....The chalcogen is in an -OH or -OM group (M is Group IA or Group IIA light metal)
345 ...Halogen attached directly to the six-membered hetero ring by nonionic bonding
346 ...Halogen attached indirectly to the six-membered hetero ring by nonionic bonding
347 ...The ring nitrogen of the six-membered hetero ring is pentavalent (e.g., quaternary pyridinium salts, etc.)
348 ...Unsubstituted or hydrocarbyl substituted only, or salt thereof
349 ....Alkylation or dealkylation process
350 ....Unsaturated hydrocarbyl side chain
351 .....Stabilized alkenyl pyridines
352 .....Process of forming the unsaturated hydrocarbyl side chain
353 ....Purification or recovery

CLASS 548 PART OF THE CLASS 532-570 SERIES -- ORGANIC COMPOUNDS

DECEMBER 1990

IN THIS SERIES OF CLASSES, CLASS 548 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
100 ..Hetero ring is five-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazoles, etc.)
101 ...Heavy metal or aluminum containing
102 ....Arsenic containing
103 ....The metal is bonded directly to carbon, which carbon is a ring carbon of the five-membered hetero ring or which carbon is attached directly or indirectly to the five-membered hetero ring by nonionic bonding
104 ....The metal is bonded directly to chalcogen of a $-C(=X)X-$ group, wherein the X's are the same or diverse chalcogens, which group is attached directly or indirectly to the five-membered hetero ring by nonionic bonding
105 ....The metal is bonded directly to chalcogen which chalcogen is attached directly to the five-membered hetero ring by nonionic bonding
106 ....The metal is bonded directly to chalcogen which chalcogen is attached indirectly to the five-membered hetero ring by nonionic bonding
107 ....The metal is in an anion and the five-membered hetero ring is in a cation
108 ....Polycyclo ring system having the five-membered hetero ring as one of the cyclos
109 ....Azide or acyclic nitrogen containing
110 ...Boron or silicon containing
111 ...Phosphorus attached directly to the five-membered hetero ring by nonionic bonding
112 ...Phosphorus attached indirectly to the five-membered hetero ring by nonionic bonding
113 ....Polycyclo ring system having the five-membered hetero ring as one of the cyclos
114 .....The polycyclo ring system and phosphorus are both bonded directly to the same chalcogen
115 ....The five-membered hetero ring and phosphorus are both bonded directly to the same nitrogen
116 ....The five-membered hetero ring and phosphorus are both bonded directly to the same chalcogen
117 .....The five-membered hetero ring contains chalcogen as a ring hetero atom
118 .....The five-membered hetero ring contains at least three ring nitrogens
119 ....The phosphorus is part of a substituent which is attached directly to ring carbon of the five-membered hetero ring
120 ...The five-membered hetero ring contains ring selenium and is one of the cyclos in a polycyclo ring system
121 ....Bicyclo ring system having the five-membered hetero ring as one of the cyclos
122 ...The five-membered hetero ring consists of sulfur, oxygen, nitrogen, and carbon
123 ...Plural ring sulfurs in the five-membered hetero ring
124 ...Plural ring oxygens in the five-membered hetero ring
125 ...The five-membered hetero ring consists of chalcogen, plural nitrogens, and carbon
126 ....Polycyclo ring system having the five-membered hetero ring as one of the cyclos
127 ....1,2,3-thiadiazoles (including hydrogenated)
128 ....1,2,4-thiadiazoles (including hydrogenated)
129 .....Chalcogen bonded directly to ring carbon of the thiadiazole ring
130 ......Nitrogen or additional chalcogen bonded directly to ring carbon of the thiadiazole ring
131 ....1,2,4-oxadiazoles (including hydrogenated)
132 .....Chalcogen bonded directly to ring carbon of the oxadiazole ring
133 .....Nitrogen attached directly to the oxadiazole ring by nonionic bonding
134 ....1,2,5-thiadiazoles (including hydrogenated)
135 .....Chalcogen or nitrogen attached directly to ring carbon of the thiadiazole ring by nonionic bonding
136 ....1,3,4-thiadiazoles (including hydrogenated)
137 .....Diazole ring attached directly to the thiadiazole ring by nonionic bonding
138 .....Nitrogen attached directly to the thiadiazole ring by nonionic bonding
139 ......Having $-C(=X)-$, wherein X is chalcogen, attached directly to the nitrogen by nonionic bonding
140 ....Additional nitrogen attached directly to the $-C(=X)-$ group by nonionic bonding
141 ......Chalcogen or additional nitrogen attached directly to ring carbon of the thiadiazole ring by nonionic bonding
142 .....Chalcogen bonded directly to the 2- and 5- positions of the thiadiazole ring
143 ....1,3,4-oxadiazoles (including hydrogenated)
144 .....Chalcogen bonded directly to ring carbon of the oxadiazole ring
145 .....Plural carbocyclic rings bonded directly to the oxadiazole ring
146 ...1,3-thiazoles (including hydrogenated)
147 ....Spiro

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is five-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazoles, etc.)
...1,3-thiazoles (including hydrogenated)
148 ....Polycyclo ring system having the thiazole ring as one of the cyclos
149 .....Tetracyclo ring system having the thiazole ring as one of the cyclos
150 .....Tricyclo ring system having the thiazole ring as one of the cyclos
151 ......At least three ring hetero atoms in the tricyclo ring system
152 .....Bicyclo ring system having the thiazole ring as one of the cyclos
153 ......At least three ring hetero atoms in the bicyclo ring system
154 ....Ring nitrogen is shared by the two cyclos
155 ....Tetramisole per se or salt thereof (including hydrogenated)
156 ......Plural benzothiazoles (including hydrogenated)
157 ....Chalcogen bonded directly to ring carbon of the thiazole ring
158 ....Plural benzothiazole ring systems bonded directly to chain consisting of plural sulfurs
159 ......Additional polycyclo heterocyclic ring system containing
160 ......Polycyclo-carbocyclic ring system having at least three cyclos
161 ......Nitrogen attached directly to the thiazole ring by nonionic bonding
162 ....The nitrogen is a ring hetero atom
163 ....Carbonyl or thiocarbonyl bonded directly to the nitrogen
164 ....The nitrogen bonded additionally only to hydrogen
165 ......Chalcogen bonded directly to ring carbon of the thiazole ring
166 ....Chalcogen bonded directly to the chalcogen
167 ....Nitrogen attached directly to the chalcogen by nonionic bonding
168 ....The nitrogen is bonded additionally directly to two carbons
169 ....Chalcogen attached indirectly to the thiazole ring by nonionic bonding
170 ....The chalcogen, X, is in a -C(=X)- group
171 ....Nitrogen bonded directly to the -C(=X)- group
172 ....Nitrogen attached directly to chalcogen by nonionic bonding
173 ....Halogen attached directly or indirectly to the bicyclo ring system by nonionic bonding
174 ....Sulfur double bonded or thiol bonded directly to ring carbon of the thiazole ring
175 ....Process of forming the bicyclo ring system
176 ....Aniline or alkyl derivative thereof utilized as starting material
177 ....Purification or recovery
178 ......Chalcogen or nitrogen attached directly to the other cyclo of the bicyclo ring system by nonionic bonding
179 ......Chalcogen attached indirectly to the bicyclo ring system by nonionic bonding
180 ....The chalcogen, X, is in a -C(=X)- group
181 ....Polycyclo heterocyclic ring system containing ring nitrogen
182 ....Chalcogen bonded directly to ring carbon of the thiazole ring
183 .....Plural chalcogens bonded directly to ring carbons of the thiazole ring
184 .....Nitrogen attached directly to the thiazole ring by nonionic bonding
185 ......Having -C(=X)-, wherein X is chalcogen, bonded directly to nitrogen
186 .....Chalcogen attached indirectly to the thiazole ring by nonionic bonding
187 ......The chalcogen, X, is in a -C(=X)- group
188 ....The -C(=X)- group is bonded directly to the thiazole ring
189 .....Nitrogen attached indirectly to the thiazole ring by nonionic bonding
190 ....Nitrogen attached directly to the thiazole ring by nonionic bonding
191 .....Plural nitrogens attached directly to the thiazole ring by nonionic bonding
192 ......Nitrogen bonded directly to a -C(=X)- group, wherein X is chalcogen
193 .....Chalcogen attached indirectly to the thiazole ring by nonionic bonding
194 ......The chalcogen, X, is in a -C(=X)- group
195 ....The -C(=X)- group is bonded directly to the nitrogen
196 ....Chalcogen or additional nitrogen bonded directly to the -C(=X)- group
197 ......Nitrogen bonded directly to chalcogen
198 .....Nitrogen attached indirectly to the thiazole ring by nonionic bonding
199 .....The nitrogen is bonded additionally only to hydrogen
200 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the thiazole ring
201 .....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
202 ....Plural double bonds between ring members of thiazole ring
203 .....Chalcogen attached indirectly to the thiazole ring by nonionic bonding
204 ......The chalcogen, X, is in a -C(=X)- group
205 ......Nitrogen attached indirectly to the thiazole ring by nonionic bonding
206 ...1,2-thiazoles (including hydrogenated)

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is five-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazoles, etc.)
...1,2-thiazoles (including hydrogenated)
207 ....Polycyclo ring system having the thiazole ring as one of the cyclos
208 .....Ring carbon is shared by three of the cyclos of the polycyclo ring system
209 .....Acyclic chalcogen bonded directly to ring carbon of the thiazole ring
210 ......At least three chalcogens bonded directly to the thiazole ring
211 ....Saccharin per se or salt thereof
212 .....Nitrogen attached directly to the thiazole ring by nonionic bonding
213 ....Chalcogen bonded directly to ring carbon of the thiazole ring
214 ....Nitrogen or chalcogen attached indirectly to the thiazole ring by nonionic bonding
215 ...1,3-oxazoles (including hydrogenated)
216 ....Spiro
217 ....Polycyclo ring system having the oxazole ring as one of the cyclos
218 .....At least three ring hetero atoms in the polycyclo ring system
219 .....Plural polycyclo ring systems having the oxazole ring as one of the cyclos in each of the ring systems
220 ......Plural oxazole-containing polycyclo ring systems each bonded directly to the same polycyclo ring system or the same hetero ring
221 .....Chalcogen bonded directly at the 2-position of the oxazole ring
222 .....Nitrogen bonded directly at the 2-position of the oxazole ring
223 .....At least four rings in the polycyclo ring system
224 .....Carbocyclic ring bonded directly at the 2-position of the oxazole ring
225 ....Chalcogen bonded directly to ring carbon of the oxazole ring
226 .....Plural chalcogens bonded directly to ring carbons of the oxazole ring
227 ......Chalcogens bonded directly at 2- and 5-positions of the oxazole ring
228 .....Chalcogen bonded directly at 5-position of the oxazole ring
229 .....Chalcogen bonded directly at 2-position of the oxazole ring
230 ......Nitrogen, halogen, or -C(=X)-, wherein X is chalcogen, attached directly to the oxazole ring by nonionic bonding
231 ......3-position substituent contains ethylenic or acetylenic unsaturation or nitrogen
232 ......4- or 5-position substituent contains chalcogen
233 ....Nitrogen bonded directly to ring carbon of the oxazole ring
234 .....Additional ring attached directly to the nitrogen by nonionic bonding
235 ....Plural double bonds between the ring members of the oxazole ring
236 .....Cyano or -C(=X)-, wherein X is chalcogen, attached directly or indirectly to the oxazole ring by nonionic bonding
237 ....One double bond between the ring members of the oxazole ring
238 .....2-position substituent contains nitrogen, other than as nitro or nitroso
239 .....2-position is unsubstituted or hydrocarbyl substituted only
240 ...1,2-oxazoles (including hydrogenated)
241 ....Polycyclo ring system having the oxazole ring as one of the cyclos
242 .....At least three ring hetero atoms in the polycyclo ring system
243 ....Chalcogen bonded directly to ring carbon of the oxazole ring
244 .....Nitrogen bonded directly to ring carbon of the oxazole ring
245 ....Nitrogen bonded directly to ring carbon of the oxazole ring
246 .....Nitrogen bonded directly to the 3-position of the oxazole ring
247 ....Plural double bonds between ring members of the oxazole ring
248 .....Having -C(=X)-, wherein X is chalcogen, bonded directly to ring carbon of the oxazole ring by nonionic bonding
249 .....4-position substituent contains plural chalcogens, attached indirectly to the oxazole ring by nonionic bonding, none of which is bonded directly to phenyl
250 ...Tetrazoles (including hydrogenated)
251 ....Chalcogen or nitrogen attached directly to the tetrazole ring by nonionic bonding
252 ....Chalcogen attached indirectly to the tetrazole ring by nonionic bonding
253 .....The chalcogen, X, is in a -C(=X)- group
254 ....Nitrogen attached indirectly to the tetrazole ring by nonionic bonding
255 ...1,2,3-triazoles (including hydrogenated)
256 ....Polycyclo heterocyclic ring system containing ring oxygen
257 ....Polycyclo ring system having the triazole ring as one of the cyclos
258 .....Ring nitrogen is shared by two of the cyclos
259 .....Chalcogen attached directly to the polycyclo ring system by nonionic bonding
260 .....Chalcogen attached indirectly to the polycyclo ring system by nonionic bonding
261 ......The chalcogen, X, is in a -C(=X)- group
262.2 ...1,2,4-triazoles (including hydrogenated)
262.4 ....Polycyclo ring system having the triazole ring as one of the cyclos
262.6 ....Having -NH-C(=X)-NHH attached directly to the triazole ring by nonionic bonding (wherein X is chalcogen or =NH, and substitution may be made for hydrogen only)

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..Hetero ring is five-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazoles, etc.)
...1,2,4-triazoles (including hydrogenated)
262.8 ....Plural nitrogens attached to the triazole ring indirectly by acyclic nonionic bonding, two of which are bonded directly to the same acyclic carbon
263.2 ....Chalcogen bonded directly to ring carbon of the triazole ring
263.4 .....Plural chalcogen bonded directly to ring carbons of the triazole ring
263.6 ......The 1- and 2- positions of the triazole ring are unsubstituted, or are alkyl or cycloalkyl substituted only
263.8 .....Halogen or nitrogen attached directly to the triazole ring by nonionic bonding
264.2 .....Carbon bonded directly to the chalcogen
264.4 ......Nitrogen or additional chalcogen attached indirectly to the chalcogen by acyclic nonionic bonding
264.6 .....Benzene ring bonded directly to the 4-position of the triazole ring
264.8 ....Nitrogen attached directly to the triazole ring by nonionic bonding
265.2 .....Plural nitrogens attached directly to the triazole ring by nonionic bonding
265.4 .....Having -C(=X)-, wherein X is chalcogen, bonded directly to the nitrogen
265.6 .....The nitrogen is further bonded to hydrogen only
265.8 ....Benzene ring bonded directly to ring nitrogen of the triazole ring, and directly to the acyclic carbon of a benzoyl or benzyl group
266.2 ....Additional unsaturated hetero ring attached directly or indirectly to the triazole ring by nonionic bonding
266.4 .....The additional unsaturated hetero ring is one of the cyclos of a polycyclo ring system (except alkylenedioxyphenyl)
266.6 .....The additional unsaturated hetero ring and the triazole ring are attached to the same acyclic atom or to the same acyclic chain
266.8 ....Cyano or -C(=X)-, wherein X is chalcogen, bonded directly to the triazole ring
267.2 ....Nitrogen attached indirectly to the triazole ring by acyclic nonionic bonding
267.4 .....The nitrogen is double or triple bonded to carbon
267.6 .....Having -C(=X)-, wherein X is chalcogen, bonded directly to the nitrogen
267.8 ....Chalcogen attached indirectly to the triaole ring by acyclic nonionic bonding
268.2 .....The triazole ring and the chalcogen are bonded directly to the same acyclic carbon
268.4 .....Acyclic carbon bonded directly to triazole ring nitrogen is multiple bonded to an additional carbon
268.6 .....Plural chalcogens attached indirectly to the triazole ring by acyclic nonionic bonding
268.8 ....The triazole ring and a hetero ring whose ring members are carbon and chalcogen are bonded directly to the same acyclic carbon
269.2 ....Processes for forming the triazole ring
269.4 ....Benzene ring bonded directly to the triazole ring
300 ...1,3-diazoles (including hydrogenated)
301 ....Divalent chalcogen or acyclic nitrogen double bonded directly to diazole ring carbon, or tautomeric equivalent
302 .....Polycyclo ring system having the diazole ring as one of the cyclos
303 ......Hetero ring fused at 4,5-positions of the diazole ring
304 ....The fused hetero ring contains ring nitrogen
305 ......Benzo fused at 4, 5-positions of the diazole ring
306 ....Nitrogen double bonded directly at 2-position, or tautomeric equivalent
307 .....Divalent chalcogen or acyclic nitrogen double bonded directly at 2-, 4- and 5-positions, or tautomeric equivalent
308 .....Divalent chalcogen or acyclic nitrogen double bonded directly at 2- and 4- positions, or tautomeric equivalent
309 ......Hetero ring attached directly or indirectly to the diazole ring by nonionic bonding
310 ....Two 1,3-diazole rings each having divalent chalcogen or acyclic nitrogen double bonded directly at 2- and 4-positions, or tautomeric equivalent, attached to each other directly or indirectly by nonionic bonding
311 ......Chalcogen, halogen, or nitrogen attached directly at 1-, 3-, or 5-position by nonionic bonding
312 ......Chalcogen, halogen, or nitrogen attached indirectly to the diazole ring by acyclic nonionic bonding
313 ....At 5-position
314 ......Benzene ring attached directly to the diazole ring by nonionic bonding
315 .....Acyclic nitrogen double bonded directly at 2-position, or tautomeric equivalent
316 ......Hetero ring attached directly or indirectly to the diazole ring by nonionic bonding
317 .....Divalent chalcogen double bonded directly at 2-position, or tautomeric equivalent
318 ......Hetero ring attached directly or indirectly to the diazole ring by nonionic bonding

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)

..Hetero ring is five-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazoles, etc.)

...1,3-diazoles (including hydrogenated)

....Divalent chalcogen or acyclic nitrogen double bonded directly to diazole ring carbon, or tautomeric equivalent

.....Divalent chalcogen double bonded directly at 2-position, or tautomeric equivalent

319 ......Chalcogen, halogen, or nitrogen attached directly at 1-, 3-, 4-, or 5-position by nonionic bonding

320 ......Chalcogen, halogen, or nitrogen attached indirectly to the diazole ring by acyclic nonionic bonding

321 ....At diazole ring carbon

322 ......Benzene ring attached directly to the diazole ring by nonionic bonding

323 ....Polycyclo ring system having the diazole ring as one of the cyclos

324 .....Ring fused at adjacent nitrogen and carbon of the diazole ring

325 .....Benzo fused at 4, 5-positions of the diazole ring

326 ......Additional ring shares two carbons of the benzo ring

327 ......Hetero ring attached directly or indirectly to the diazole ring by nonionic bonding

328 ....Two benzo fused 1,3-diazole rings attached to each other directly or indirectly by nonionic bonding

329 ......Chalcogen, halogen, or nitrogen attached directly at 1-, 2-, or 3-position of the diazole ring by nonionic bonding

330 ......Chalcogen, halogen, or nitrogen attached indirectly at 2 position of the diazole ring by acyclic nonionic bonding

331 ....Chalcogen or nitrogen double or triple bonded directly to a carbon which is attached directly at 2-position

332 ....Polyhaloalkyl attached directly at 2-position by nonionic bonding

333 ......Chalcogen, halogen, or nitrogen attached indirectly to diazole ring nitrogen by acyclic nonionic bonding

334 ......Ring attached directly at 2-position of the diazole ring by nonionic bonding

335 ....Imidazoles

336 .....Hetero ring attached directly or indirectly to the imidazole ring by nonionic bonding

337 .....Chalcogen, halogen, or nitrogen attached directly to the imidazole ring by nonionic bonding

338 ......Nitro attached directly to imidazole ring carbon by nonionic bonding

339 ....And chalcogen, halogen, or nitrogen attached indirectly to imidazole ring carbon by acyclic nonionic bonding

340 ....And ring attached directly to imidazole ring carbon by nonionic bonding

341 .....Chalcogen, halogen, or nitrogen attached indirectly to the imidazole ring by acyclic nonionic bonding

342 ......At imidazole ring carbon

343 ....Chalcogen or nitrogen double or triple bonded directly to a carbon which is bonded directly to imidazole ring carbon

344 ....Histidine or derivative

345 .....Diphenylmethyl-, dibenzomethyl- or triphenylmethyl- attached directly to imidazole ring by nonionic bonding

346 .....Ring attached directly to imidazole ring by nonionic bonding

347 ....2-imidazolines

348 .....Hetero ring attached directly or indirectly to the imidazoline ring by nonionic bonding

349 ......Two 2-imidazoline rings attached to each other directly or indirectly by nonionic bonding

350 ....Bonding or connecting group between imidazolines attached to ring carbon of a 2-imidazoline

351 .....Chalcogen, halogen, or nitrogen attached directly to 2-imidazoline ring by nonionic bonding

352 .....Chalcogen, halogen, or nitrogen attached indirectly to 2 imidazoline ring by acyclic nonionic bonding

353 ......At 2-imidazoline carbon

354 ......2-imidazolinium salts

355 .....Arylalkylene attached directly to 2-imidazoline ring at 2-position by nonionic bonding

356 ...1,2-diazoles (including hydrogenated)

357 ....Anthrone or anthraquinone containing

358 ....Divalent chalcogen or acyclic nitrogen double bonded directly to diazole ring carbon, or tautomeric equivalent

359 .....Polycyclo ring system having the diazole ring as one of the cyclos

360 .....Divalent chalcogen or acyclic nitrogen double bonded directly at 3- and 5-positions, or tautomeric equivalent

361 ......Oxygen double bonded directly at 3- and 5-positions or tautomeric equivalent

362 .....Acyclic nitrogen double bonded directly at 3- or 5-position, or tautomeric equivalent

363 .....Divalent chalcogen double bonded directly at 3- or 5-position, or tautomeric equivalent

364 ......Hetero ring attached directly or indirectly to the diazole ring by nonionic bonding

365 ......Chalcogen, halogen, or nitrogen attached directly at 1-, 2-, or 4-position or at remaining 5- or 3-position by nonionic bonding

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is five-membered having two or more ring hetero atoms of which at least one is nitrogen (e.g., selenazoles, etc.)
...1,2-diazoles (including hydrogenated)
....Divalent chalcogen or acyclic nitrogen double bonded directly to diazole ring carbon, or tautomeric equivalent
.....Divalent chalcogen double bonded directly at 3- or 5-position, or tautomeric equivalent
......Chalcogen, halogen, or nitrogen attached directly at 1-, 2-, or 4-position or at remaining 5- or 3-position by nonionic bonding
366 ....Aminopyrine or derivative
367 ......Chalcogen, halogen, or nitrogen attached indirectly to the diazole ring by acyclic nonionic bonding
368 ......Antipyrine or derivative
369 ....Polycyclo ring system having the diazole ring as one of the cyclos
370 .....Hetero ring shares two carbons of diazole ring
371 .....Benzo shares two carbons of diazole ring
372 ......Chalcogen, halogen, or nitrogen attached at 1-, 2-, or 3-position directly by nonionic bonding or indirectly by acyclic nonionic bonding
373 ....Pyrazoles
374 .....Hetero ring attached directly or indirectly to the pyrazole ring by nonionic bonding
375 .....Chalcogen, halogen, or nitrogen attached directly to the pyrazole ring by nonionic bonding
376 ......Additional chalcogen, halogen, or nitrogen attached directly to the pyrazole ring by nonionic bonding
377 ......Chalcogen, halogen, or nitrogen bonded directly to carbon or to an acyclic carbon chain, which carbon or chain is bonded directly to pyrazole ring carbon
378 .....Chalcogen, halogen, or nitrogen attached indirectly to the pyrazole ring by acyclic nonionic bonding
379 ....2-pyrazolines
400 ..Hetero ring is five-membered consisting of one nitrogen and four carbons (e.g., halopyrrolidines, etc.)
401 ...With preservative or stabilizer
402 ...Heavy metal or aluminum containing
403 ....The metal is bonded directly to chalcogen, which chalcogen is attached directly or indirectly to the five-membered hetero ring by nonionic bonding
404 ....Plural chalcogens bonded directly to ring carbons of the five-membered hetero ring (e.g., cyclic imides, etc.)
405 ...Boron containing
406 ...Silicon containing
407 ...Spiro
408 ....The spiro includes the five-membered hetero ring
409 .....Both rings which form the spiro are hetero rings
410 ......Acyclic chalcogen attached directly to the five-membered nitrogen containing spiro hetero ring by nonionic bonding
411 .....Polycyclo ring system having one of the two rings which form the spiro as one of the cyclos
412 ...Phosphorus attached directly to the five-membered hetero ring by nonionic bonding
413 ...Phosphorus attached indirectly to the five-membered hetero ring by nonionic bonding
414 ....Polycyclo ring system having the five-membered hetero ring as one of the cyclos
415 .....Plural chalcogens bonded directly to ring carbons of the five-membered hetero ring
416 ...Polycyclo ring system having the five-membered hetero ring as one of the cyclos
417 ....The polycyclo ring system has at least six cyclos, and has either a ring carbon that is shared by three of the cyclos or has a ring chalcogen
418 ....Pentacyclo ring system having the five-membered hetero ring as one of the cyclos
419 .....Two of the cyclos share at least three ring members, or a ring carbon is shared by three of the cyclos (e.g., bridged, peri-fused, etc.)
420 ....Tetracyclo ring system having the five-membered hetero ring as one of the cyclos
421 .....Plural ring hetero atoms in the tetracyclo ring system
422 ......Three-membered nitrogen containing hetero ring is cyclo in the tetracyclo ring system (e.g., mitomycin C, etc.)
423 ......Plural chalcogens bonded directly to ring carbons of the five-membered hetero ring (e.g., cyclic imides, etc.)
424 .....Two of the cyclos share at least three ring members, or a ring carbon is shared by three of the cyclos (e.g., bridged, peri-fused, etc.)
425 ......Benzene ring is cyclo in the tetracyclo ring system
426 .....The five-membered hetero ring shares ring members with one other cyclo only
427 ....Tricyclo ring system having the five-membered hetero ring as one of the cyclos
428 .....Ring nitrogen is shared by two of the cyclos
429 .....Plural ring hetero atoms in the tricyclo ring system
430 ......Ring chalcogen in the tricyclo ring system
431 ....Chalcogen bonded directly to ring carbon of the five-membered hetero ring (e.g., cyclic imides, etc.)

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)

..Hetero ring is five-membered consisting of one nitrogen and four carbons (e.g., halopyrrolidines, etc.)

...Polycyclo ring system having the five-membered hetero ring as one of the cyclos

....Tricyclo ring system having the five-membered hetero ring as one of the cyclos

.....Plural ring hetero atoms in the tricyclo ring system

......Ring chalcogen in the tricyclo ring system

432 ....Pyrano(3,4-b)indoles or thiopyrano(3,4-b) indoles (including hydrogenated)

433 ......The tricyclo ring system consists of a benzene ring which shares ring carbons with two nitrogen containing hetero rings (e.g., pyromellitic diimide, etc.)

434 .....Two of the cyclos share at least three ring members (i.e., bridged)

435 ......Plural chalcogens bonded directly to ring carbons of the five-membered hetero ring (e.g., cyclic imides, etc.)

436 .....A ring carbon is shared by three of the cyclos (e.g., peri-fused, etc.)

437 ......Chalcogen bonded directly to ring carbon of the five-membered hetero ring (e.g., naphthostyril, etc.)

438 ......Benzene ring, which is not a cyclo in the tricyclo ring system, bonded directly to ring carbon of the five-membered hetero ring

439 .....The five-membered hetero ring shares ring carbons with two carbocyclic rings (e.g., tetrahydrocarbazoles, etc.)

440 ......The five-membered hetero ring shares ring carbons with two benzene rings (i.e., carbazoles)

441 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the tricyclo ring system (e.g., carbazole-3-carboxylic acid, etc.)

442 ....One of the benzene rings and an additional carbocyclic ring bonded directly to the same acyclic nitrogen

443 ....Azido or sulfonyl attached directly to the tricyclo ring system by nonionic bonding (e.g., carbazole sulfonic acid, etc.)

444 ....Chalcogen or nitrogen attached indirectly to the tricyclo ring system by acyclic nonionic bonding

445 ....The tricyclo ring system is unsubstituted or is hydrocarbyl substituted only (e.g., N-vinyl carbazole, etc.)

446 ....Carbazole per se or alkyl substituted only

447 ....Processes of forming by cyclization or alkylation

448 ......Having -C(=X)-, wherein X is chalcogen, bonded directly to ring carbon of the tricyclo ring system (e.g., 1, 2, 3, 4-tetrahydrocarbazole -3-carboxylic acid, etc.)

449 ......Chalcogen or nitrogen attached indirectly to ring nitrogen of the five-membered hetero ring by acyclic nonionic bonding

450 .....Chalcogen bonded directly to ring carbon of the five-membered hetero ring (e.g., indigoid dyes, etc.)

451 ......Plural chalcogens bonded directly to ring carbons of the five-membered hetero ring (e.g., cyclic imides, naphthisatins, etc.)

452 ....Bicyclo ring system having the five-membered hetero ring as one of the cyclos (e.g., octahydroindoles, etc.)

453 .....Plural ring hetero atoms in the bicyclo ring system, or ring nitrogen is shared by the two cyclos of the bicyclo ring system

454 .....Additional polycyclo heterocyclic ring system attached directly or indirectly to the bicyclo ring system by nonionic bonding

455 ......The additional polycyclo ring system includes a five-membered nitrogen containing hetero ring

456 ....Lactone ring containing (e.g., 3,3-bisindolyl phthalides, etc.)

457 ....Ring carbon of one of the five-membered hetero rings is bonded directly to ring carbon of the other (e.g., indigo dyes, etc.)

458 ....By a single bond (e.g., leuco indigo, etc.)

459 ....Halogen attached directly or indirectly to the bicyclo ring system by nonionic bonding (e.g., dibromoindigo, etc.)

460 ....Ring carbon of each of the two five-membered hetero rings is bonded directly to chalcogen or nitrogen (e.g., both rings may be bonded to the same nitrogen atom or to different nitrogen atoms, etc.)

461 ....Plural chalcogens bonded directly to ring carbons of each of the two five-membered hetero rings (e.g., bisphthalimides, etc.)

462 ....The ring nitrogen of each of the two five-membered hetero rings is bonded directly to the same atom or chain, which chain may include a ring (e.g., N,N'-ethylene-bisphthalimide, etc.)

463 ......The additional polycyclo heterocyclic ring system has a lactone ring as one of the cyclos

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)

..Hetero ring is five-membered consisting of one nitrogen and four carbons (e.g., halopyrrolidines, etc.)

...Polycyclo ring system having the five-membered hetero ring as one of the cyclos

....Bicyclo ring system having the five-membered hetero ring as one of the cyclos (e.g., octahydroindoles, etc.)

.....Additional polycyclo heterocyclic ring system attached directly or indirectly to the bicyclo ring system by nonionic bonding

464 ......Ring carbon of the five-membered hetero ring is bonded directly to a ring carbon of the hetero ring which is a cyclo in the additional polycyclo heterocyclic ring system (e.g., indigoid dyes, etc.)

465 .....Additional hetero ring, attached directly or indirectly to the bicyclo ring system by nonionic bonding

466 ......The additional hetero ring is bonded directly to a ring carbon of the bicyclo ring system

467 ......Substituent on ring carbon of the bicyclo ring system contains the additional hetero ring

468 ....The additional hetero ring and the bicyclo ring system are attached directly to the same acyclic carbon or acyclic carbon chain

469 .....The bicyclo ring system consists of the five-membered hetero ring and a benzene ring (e.g., indole, etc.)

470 ......The ring nitrogen is bonded directly to two ring carbons of the same cyclo which carbons are members of one cyclo only (i.e., isoindoles or isoindolenines)

471 ....Nitrogen bonded directly to ring carbon of the five-membered hetero ring

472 ....Chalcogen bonded directly to ring carbon of the five-membered hetero ring (e.g., phthalimidines, etc.)

473 ....Plural chalcogens bonded directly to ring carbons of the five-membered hetero ring (e.g., phthalimides, etc.)

474 ....Polycyclo carbocyclic ring system having at least three cyclos

475 ....Chalcogen or nitrogen attached directly to the ring nitrogen of the five-membered hetero ring by nonionic bonding

476 ....Benzene ring bonded directly to the ring nitrogen of the five-membered hetero

477 ....Nitrogen attached indirectly to the ring nitrogen of the five-membered hetero ring by acyclic nonionic bonding

478 ....Chalcogen attached indirectly to the ring nitrogen of the five-membered hetero ring by acyclic nonionic bonding

479 ....The chalcogen, X, is in a -C(=X)- group (e.g., beta-phthalimidopropionaldehyde, etc.)

480 ....The ring nitrogen of the five-membered hetero ring is unsubstituted or hydrocarbyl substituted only

481 ....Chalcogen or nitrogen attached indirectly to ring carbon of the bicyclo ring system by acyclic nonionic bonding

482 ....The five-membered hetero ring contains one double bond only (i.e., isoindolines)

483 ......Nitrogen attached directly to the five-membered hetero ring by nonionic bonding (e.g., 2-amino indoles, etc.)

484 ......Chalcogen bonded directly to ring carbon of the five-membered hetero ring (e.g., 3-indolols, etc.)

485 ....Plural chalcogens bonded directly to ring carbons of the five-membered hetero ring (e.g., isatins, etc.)

486 ....The chalcogen is bonded directly to a ring carbon of the five-membered hetero ring which is adjacent to the ring nitrogen (e.g., 2-indolinones, etc.)

487 ....Two benzene rings bonded directly to the same ring carbon of the five-membered hetero ring

488 ....Polycyclo carbocyclic ring system bonded direcly to a ring carbon of the five-membered hetero ring (e.g., indol-alpha-naphtholindigo, etc.)

489 ....Process of forming the bicyclo ring system directly from reactant which contains acyclic nitrogen bonded directly to a benzene ring (e.g., indoxyl from phenylglycine, etc.)

490 ......The five-membered hetero ring contains one double bond only (i.e., indolines)

491 ....Chalcogen or nitrogen attached indirectly to the five-membered hetero ring by acyclic nonionic bonding

492 ......Having -C(=X)-, wherein X is chalcogen, bonded directly to ring carbon of the five-membered hetero ring (e.g., indole-2-carboxylic acids, etc.)

493 ....Hydrogen or additional carbon bonded directly to the -C(=X)- group (e.g., aldehydes,ketones, etc.)

494 ......Having -C(=X)-, wherein X is chalcogen, attached indirectly to ring carbon of the five-membered hetero ring by an acyclic carbon or acyclic carbon chain (e.g., indole-3-acetic acid, etc.)

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)

..Hetero ring is five-membered consisting of one nitrogen and four carbons (e.g., halopyrrolidines, etc.)

...Polycyclo ring system having the five-membered hetero ring as one of the cyclos

....Bicyclo ring system having the five-membered hetero ring as one of the cyclos (e.g., octahydroindoles, etc.)

.....The bicyclo ring system consists of the five-membered hetero ring and a benzene ring (e.g., indole, etc.)

......Having -C(=X)-, wherein X is chalcogen, attached indirectly to ring carbon of the five-membered hetero ring by an acyclic carbon or acyclic carbon chain (e.g., indole-3-acetic acid, etc.)

495 ....Acyclic nitrogen bonded directly to the acyclic carbon or acyclic carbon chain

496 ....The acyclic carbon or acyclic carbon chain is further unsubstituted or alkyl substituted only (e.g., tryptophane, etc.)

497 ....Processes

498 ....Racemization or optical resolution

499 ....Preparing from hydantoins or proteins

500 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to ring nitrogen of the five-membered hetero ring (e.g., indomethacin, etc.)

501 ....Processes

502 ....Processes

503 ......Nitrogen attached indirectly to ring carbon of the bicyclo ring system by acyclic nonionic bonding

504 ....Nitrogen attached indirectly to ring carbon of the five-membered hetero ring by acyclic nonionic bonding (e.g., tryptamine, etc.)

505 ....The nitrogen is double or triple bonded directly to carbon

506 ....Benzene ring bonded directly or attached indirectly by an acyclic carbon or an acyclic carbon chain to ring carbon of the five-membered hetero ring

507 ....Chalcogen or additional nitrogen attached indirectly to ring carbon of the five-membered hetero ring by acyclic nonionic bonding

508 ......Processes of forming the bicyclo ring system by cyclization (e.g., forming indole from o-ethyl aniline, etc.)

509 ......Chalcogen attached indirectly to the bicyclo ring system by acyclic nonionic bonding

510 ....The chalcogen, X, is in a -C(=X)- group

511 ......Benzene ring bonded directly or attached indirectly by an acyclic carbon or an acyclic carbon chain to ring carbon of the five-membered hetero ring

512 .....Chalcogen bonded directly to ring carbon of the five-membered hetero ring (e.g., adrenochrome, etc.)

513 ......Plural chalcogens bonded directly to ring carbons of the five-membered hetero ring (e.g., imides, etc.)

514 ....Chalcogen or nitrogen attached directly to ring nitrogen of the five-membered hetero ring by nonionic bonding

515 .....The ring nitrogen is bonded directly to two ring carbons of the same cyclo which carbons are members of one cyclo only (e.g., cyclopenta(c)pyrroles, etc.)

516 .....Two double bonds between ring members of the five-membered hetero ring (e.g., 4,5,6,7-tetrahydroindoles, etc.)

517 ...Additional hetero ring, which is attached directly or indirectly to the five-membered hetero ring by nonionic bonding

518 ....The additional hetero ring also contains nitrogen

519 .....Ring carbon of each of the two nitrogen containing hetero rings is bonded directly to chalcogen (e.g., both rings may be bonded to the same oxygen atom or to different oxygen atoms, etc.)

520 ......Plural chalcogens bonded directly to ring carbons of each of the two nitrogen containing hetero rings (e.g., bis-succinimides, etc.)

521 ....Double bond between ring carbons in each of the two nitrogen containing hetero rings (e.g., bis-maleimides, etc.)

522 ....Processes

523 .....Ring nitrogens of the two nitrogen containing hetero rings are bonded directly to the same atom or chain, which chain may include a ring

524 ......The atom is carbon or the chain consists of carbons

525 ....Polycyclo ring system which includes ring chalcogen

526 .....Plural ring chalcogens in the polycyclo ring sytem (e.g., methylenedioxyphenyl containing, etc.)

527 ....Sulfur containing hetero ring

528 ...Polycyclo carbocyclic ring system having at least three cyclos

529 ....Attached directly to the five-membered hetero ring

530 ...Having -C(=X)-, wherein X is chalcogen, bonded directly to the five-membered hetero ring (e.g., pyrrole carbonyl halides, pyrrole carboxaldehyde, etc.)

531 ....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens (e.g., pyrrole-3-carboxylic acid, etc.)

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)

..Hetero ring is five-membered consisting of one nitrogen and four carbons (e.g., halopyrrolidines, etc.)

...Having -C(=X)-, wherein X is chalcogen, bonded directly to the five-membered hetero ring (e.g., pyrrole carbonyl halides, pyrrole carboxaldehyde, etc.)

....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens (e.g., pyrrole-3-carboxylic acid, etc.)

532 .....And is bonded directly to a ring carbon which is adjacent to the ring nitrogen of the five-membered hetero ring (e.g., 4-hydroxy proline, etc.)

533 ......Additional -C(=X) bonded directly to the five-membered hetero ring (e.g., N-n-butyryl-L-proline, etc.)

534 ......Chalcogen bonded directly to the other ring carbon which is adjacent to the ring nitrogen of the five-membered hetero ring (e.g., 2-pyrrolidone-5-carboxylic acid, etc.)

535 ......The five-membered hetero ring is further unsubstituted or alkyl substituted only (e.g., proline, etc.)

536 .....Additional -C(=X)- bonded directly to the five-membered hetero ring (e.g., pyrrole-3,4-dicarboxylic acid esters, etc.)

537 ....Acyclic nitrogen bonded directly to the -C(=X)- (e.g., 4,5-dihalopyrrole -2-carboxamides, etc.)

538 .....The -C(=X)- is bonded directly to the ring nitrogen of the five-membered hetero ring (e.g., 1-pyrrolidine carboxanilides, etc.)

539 ....Carbocyclic ring bonded directly to the -C(=X)- (e.g., 3-benzoyl pyrrolidine, etc.)

540 ....Acyclic carbon bonded directly to the -C(=X)- (e.g., N-oleoylpyrrolidine, etc.)

541 ...Chalcogen attached directly to the five-membered hetero ring by nonionic bonding (e.g., 3-pyrrolidinols, etc.)

542 ....Chalcogen attached directly to ring nitrogen of the five-membered hetero ring by nonionic bonding (e.g., pyrrolidine-N-oxides, etc.)

543 ....Chalcogen bonded directly to a ring carbon of the five-membered hetero ring which is adjacent to the ring nitrogen (e.g., 2-pyrrolidones, etc.)

544 .....And chalcogen bonded directly to a ring carbon of the five membered hetero ring which is not adjacent to the ring nitrogen (e.g., 2,4-pyrrolidinediones, etc.)

545 .....And chalcogen bonded directly to the other ring carbon of the five-membered hetero ring which is adjacent to the ring nitrogen (e.g., succinimide, etc.)

546 ......Nitrogen attached directly or indirectly to the five-membered hetero ring by acyclic nonionic bonding

547 ......Chalcogen attached indirectly to the five-membered hetero ring by acyclic nonionic bonding

548 ......Carbon to carbon unsaturation between ring members of the five-membered hetero ring (e.g., maleimide, etc.)

549 ....Benzene ring bonded directly to ring nitrogen of the five-membered hetero ring (e.g., N-phenylmaleimide, etc.)

550 .....Nitrogen attached directly or indirectly to the five-membered hetero ring by acyclic nonionic bonding

551 .....Chalcogen attached indirectly to the five-membered hetero ring by acyclic nonionic bonding

552 .....Processes of forming 2-pyrrolidone which is unsubstituted or alkyl or alkenyl substituted only

553 ......Directly from a cyano containing compound (e.g., from succinonitrile, etc.)

554 ......Directly from a -COO- containing compound (e.g., from methyl acrylate, etc.)

555 .....Purification or recovery of 2-pyrrolidone which is unsubstituted or alkyl substituted only

556 ....Chalcogen attached indirectly to the five-membered hetero ring by acyclic nonionic bonding (e.g., 4-hydroxy -3-pyrrolidinemethanol, etc.)

557 ...Nitrogen attached directly to the five-membered hetero ring by nonionic bonding

558 ....The nitrogen is bonded directly to a ring carbon which is adjacent to the ring nitrogen of the five-membered hetero ring

559 .....Carbocyclic ring bonded directly to the nitrogen

560 ...Two double bonds between ring members of the five-membered hetero ring

561 ....Nitrogen attached indirectly to the five-membered hetero ring by acyclic nonionic bonding

562 ....Chalcogen attached indirectly to the five-membered hetero ring by acyclic nonionic bonding

563 ....Benzene ring bonded directly to ring nitrogen of the five -membered hetero ring

564 ....The five-membered hetero ring is unsubstituted or alkyl substituted only (e.g., pyrrole, etc.)

565 ...One double bond between ring members of the five-membered hetero ring (i.e., pyrrolines)

566 ...Nitrogen attached indirectly to the five-membered hetero ring by acyclic nonionic bonding

567 ....The nitrogen is bonded directly to -C(=X)-, wherein X is chalcogen (e.g., 2-benzamidomethyl - pyrrolidines, etc.)

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Hetero ring is five-membered consisting of one nitrogen and four carbons (e.g., halopyrrolidines, etc.)
...Nitrogen attached indirectly to the five-membered hetero ring by acyclic nonionic bonding
....The nitrogen is bonded directly to -C(=X)-, wherein X is chalcogen (e.g., 2-benzamidomethyl - pyrrolidines, etc.)
568 .....Hydrogen or acyclic carbon bonded directly to the -C(=X)- (e.g., 2-pyrrolidine acrylamide, etc.)
569 ....The nitrogen is in a substituent attached to the ring nitrogen of the five-membered hetero ring
570 ...Chalcogen attached indirectly to the five-membered hetero ring by acyclic nonionic bonding
571 ....The chalcogen, X, is in a -C(=X)- group (e.g., 1-phenyl -2-pyrrolidino-hexanone-1, etc.)
572 .....The -C(=X)- is part of a -C(=X)X- group wherein the X's are the same or diverse chalcogens (e.g., 3-pyrrolidinemethanol propionates, etc.)
573 ......The -C(=X)X- group is in a substituent attached to the ring nitrogen of the five-membered hetero ring (e.g., beta-pyrrolidyl ethyl ester of benzoic acid, etc.)
574 ....The chalcogen is in a substituent attached to the ring nitrogen of the five-membered hetero ring
575 .....Carbocyclic ring bonded directly to the chalcogen
576 ......The substituent on the ring nitrogen of the five-membered hetero ring contains a bicyclo carbocyclic ring system
577 ...Benzene ring bonded directly to the five-membered hetero ring
578 ...Benzene ring in a substituent attached to the ring nitrogen of the five-membered hetero ring by nonionic bonding
579 ...The five-membered hetero ring is unsubstituted or is alkyl substituted only (e.g., pyrrolidine, etc.)
950 ..The hetero ring contains four members including nitrogen and carbon
951 ...Plural hetero atoms in the hetero ring
952 ...Chalcogen bonded directly to ring carbon of the hetero ring
953 ...Nitrogen or -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring
954 ..Hetero ring is three-membered including nitrogen and carbon
955 ...Heavy metal, boron or silicon containing
956 ...Phosphorus attached directly or indirectly to the hetero ring by nonionic bonding
957 ....Plural phosphori
958 ...Spiro
959 ...Plural hetero atoms in the hetero ring
960 ....Plural nitrogens in the hetero ring
961 ...Polycyclo ring system having the hetero ring as one of the cyclos
962 ...Additional hetero ring containing
963 ....Plural three-membered nitrogen containing hetero rings bonded directly to the same ring
964 ....Having -C(=X)-, wherein X is chalcogen, in chain between the hetero rings
965 ...Chalcogen, nitrogen or halogen attached directly to the hetero ring by nonionic bonding
966 ...Having -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring
967 ...Nitrogen, other than as nitro or nitroso, attached indirectly to the hetero ring by nonionic bonding
968 ...Chalcogen attached indirectly to the hetero ring by nonionic bonding
969 ...The three-membered hetero ring is unsubstituted or alkyl substituted only

CLASS 549 PART OF THE CLASS 532-570 SERIES -- ORGANIC COMPOUNDS

DECEMBER 1990

IN THIS SERIES OF CLASSES, CLASS 549 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)

1 ..Sulfur containing hetero ring (e.g., thiiranes, etc.)

2 ...With preservative or stabilizer

3 ...Heavy metal or aluminum containing

4 ...Boron or silicon containing

5 ...Phosphorus attached directly or indirectly to the hetero ring by nonionic bonding

6 ....The hetero ring is five-membered

7 .....Plural ring hetero atoms in the hetero ring

8 .....Four chalcogens bonded directly to the same phosphorus

9 ...The hetero ring has at least seven members

10 ....Plural ring hetero atoms in the hetero ring

11 .....Plural ring sulfurs in the hetero ring

12 ....Polycyclo ring system having at least three cyclos and having the hetero ring as one of the cyclos

13 ...The hetero ring is six-membered

14 ....Plural ring hetero atoms in the hetero ring

15 .....Polycyclo ring system having the hetero ring as one of the cyclos

16 ......Tricyclo ring system having the hetero ring as one of the cyclos

17 ....Plural ring sulfurs in the hetero ring

18 .....Three or more ring hetero atoms in the hetero ring

19 ......Plural ring sulfurs in the hetero ring

20 .....Two ring sulfurs in the hetero ring

21 ......Chalcogen or nitrogen attached directly to the hetero ring by nonionic bonding

22 ......Chalcogen or nitrogen attached indirectly to the hetero ring by nonionic bonding

23 ....Polycyclo ring system having the hetero ring as one of the cyclos

24 .....The polycyclo ring system has at least four cyclos

25 ......Chalcogen attached directly to the hetero ring by nonionic bonding

26 .....Tricyclo ring system having the hetero ring as one of the cyclos

27 ......Chalcogen attached directly to the hetero ring by nonionic bonding

28 ....Chalcogen or nitrogen attached directly to the hetero ring by nonionic bonding

29 ...The hetero ring is five-membered

30 ....Plural ring hetero atoms in the hetero ring

31 .....Polycyclo ring system having the hetero ring as one of the cyclos

32 ......Bicyclo ring system having the hetero ring as one of the cyclos

33 ....Chalcogen attached directly to the hetero ring by nonionic bonding

34 .....Three or more ring hetero atoms in the hetero ring

35 .....Two ring sulfurs in the hetero ring

36 ......Chalcogen bonded directly to ring carbon of the hetero ring

37 ....Nitrogen or chalcogen attached indirectly to the hetero ring by nonionic bonding

38 ......Nitrogen attached directly to the hetero ring by nonionic bonding

39 ......Chalcogen attached indirectly to the hetero ring by nonionic bonding

40 .....Chalcogen attached directly to ring sulfur of the hetero ring by nonionic bonding

41 ....Polycyclo ring system having the hetero ring as one of the cyclos

42 .....Tetracyclo ring system having the hetero ring as one of the cyclos

43 .....Tricyclo ring system having the hetero ring as one of the cyclos

44 ......Chalcogen attached directly to the tricyclo ring system by nonionic bonding

45 ....Chalcogen attached directly to the hetero ring by nonionic bonding

46 ....Chalcogen attached directly to ring sulfur of the hetero ring by nonionic bonding

47 ....Halogen attached directly to the tricyclo ring system by nonionic bonding

48 ....Nitrogen attached directly or indirectly to the tricyclo ring system by nonionic bonding

49 .....Bicyclo ring system having the hetero ring as one of the cyclos

50 ......Plural ring hetero atoms in the bicyclo ring system

51 ......Chalcogen attached directly to the bicyclo ring system by nonionic bonding

52 ....Chalcogen attached directly to the hetero ring by nonionic bonding

53 ....Chalcogen attached directly to ring sulfur of the hetero ring by nonionic bonding

54 ....Plural chalcogens bonded directly to the bicyclo ring system

55 ....Nitrogen attached directly or indirectly to the bicyclo ring system by nonionic bonding

56 ....Halogen attached directly or indirectly to the bicyclo ring system by nonionic bonding

57 ......Nitrogen or a -C(=X)- group, wherein X is chalcogen, attached directly to the bicyclo ring system by nonionic bonding

58 ......Chalcogen attached indirectly to the bicyclo ring system by nonionic bonding

59 ....Additional hetero ring containing

60 .....Ring oxygen in the additional hetero ring

61 ....Cyano bonded directly to the hetero ring

62 ....Chalcogen bonded directly to ring carbon of the hetero ring

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Sulfur containing hetero ring (e.g., thiiranes, etc.)
...The hetero ring is five-membered
....Chalcogen bonded directly to ring carbon of the hetero ring
63 .....Nitrogen attached directly to the hetero ring by nonionic bonding
64 .....Having -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring
65 .....Nitrogen attached indirectly to the hetero ring by nonionic bonding
66 .....Chalcogen attached indirectly to the hetero ring by nonionic bonding
67 .....Chalcogen attached directly to ring sulfur of the hetero ring by nonionic bonding
68 ....Nitrogen attached directly to the hetero ring by nonionic bonding
69 .....Having -C(=X)-, wherein X is chalcogen, bonded directly to the nitrogen
70 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring
71 .....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
72 .....Nitrogen or chalcogen attached indirectly to the hetero ring by nonionic bonding
73 .....Halogen attached directly or indirectly to the hetero ring by nonionic bonding
74 ....Nitrogen attached indirectly to the hetero ring by nonionic bonding
75 .....Chalcogen attached indirectly to the hetero ring by nonionic bonding
76 ......The chalcogen, X, is in a -C(=X)- group
77 ....Unsaturated carbocyclic ring or acyclic carbon to carbon unsaturation containing
78 ....Chalcogen attached indirectly to the hetero ring by nonionic bonding
79 .....The chalcogen, X, is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
80 ....Unsaturated carbocyclic ring or acyclic carbon to carbon unsaturation containing
81 ....Halogen attached directly to the hetero ring by nonionic bonding
82 .....Three or more halogens attached directly to the hetero ring by nonionic bonding
83 ....The compound consists of the ring sulfur, carbon, and hydrogen
84 .....Process of forming the hetero ring from acyclic reactants only
85 ......Metal containing catalyst utilized
86 .....Process of alkylating the hetero ring
87 ....Plural chalcogens double bonded directly to ring sulfur of the hetero ring
88 ...The hetero ring is four-membered
89 ....Plural ring hetero atoms in the hetero ring
90 ...The hetero ring is three-membered and has chalcogen or nitrogen attached directly or indirectly thereto by nonionic bonding
200 ..Oxygen containing hetero ring (e.g., dioxirane, etc.)
201 ...With preservative or stabilizer
202 ....Oxirane containing compound with preservative or stabilizer
203 ....Cyclic anhydride containing compound with preservative or stabilizer
204 ....Lactone containing compound with preservative or stabilizer
205 ....Compound in which the hetero ring is five-membered with preservative or stabilizer
206 ...Heavy metal or aluminum containing
207 ....Arsenic containing
208 ....The hetero ring has three members or at least seven members
209 ....The metal is bonded directly to carbon, which carbon is a ring carbon of the hetero ring or which carbon is attached directly or indirectly to the hetero ring by nonionic bonding
210 ....The metal is bonded directly to chalcogen, which chalcogen is attached directly or indirectly to the hetero ring by nonionic bonding
211 .....The chalcogen, X, is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
212 ....Polycyclo ring system having the hetero ring as one of the cyclos
213 ...Boron containing
214 ...Silicon containing
215 ....Oxirane ring containing
216 ...Phosphorus bonded directly to the hetero ring
217 ....Oxirane ring containing
218 ...Phosphorus attached indirectly to the hetero ring by nonionic bonding
219 ....Oxirane ring containing
220 ....Polycyclo ring system having the hetero ring as one of the cyclos
221 ....Plural ring oxygens in the hetero ring
222 ....Chalcogen bonded directly to the hetero ring
223 ...Xanthene ring system having a benzene ring bonded directly thereto para to the xanthene ring oxygen, wherein the carbon of a -COO- group is bonded directly to the benzene ring ortho to its position of attachment to the xanthene ring system, and spirolactone derivatives thereof (e.g., fluoresceins, chlorofluorans, etc.)
224 ....The xanthene ring system is three cyclos of a polycyclo ring system having at least four rings (e.g., benz(c)fluorans, etc.)
225 ....Nitrogen bonded directly to the xanthene ring system (e.g., rhodols, aminofluorans, etc.)
226 .....Plural nitrogens bonded directly to the xanthene ring system (e.g., 2,6-diaminofluorans, etc.)
227 ......Rhodamines

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Oxygen containing hetero ring (e.g., dioxirane, etc.)
228 ...The hetero ring contains -O-C(=X)-O- as part of its structure, wherein X is chalcogen (e.g., cyclic carbonates, etc.)
229 ....The hetero ring is five-membered
230 .....The five-membered hetero ring, except for the =X to the ring, is unsubstituted or hydrocarbyl substituted only
231 ...Cyclic anhydrides (i.e., -C(=X)OC(=X)-, wherein the X's are the same or diverse chalcogens, is part of the hetero ring)
232 ....The cyclic anhydride has at least six members and is a cyclo in a polycyclo ring system
233 ....The cyclic anhydride is five-membered (e.g., succinic anhydride, etc.)
234 .....Polycyclo ring system having the cyclic anhydride as one of the cyclos
235 ......Tetracyclo ring system having the cyclic anhydride as one of the cyclos
236 ......Tricyclo ring system having the cyclic anhydride as one of the cyclos
237 ....Two of the cyclos share at least three ring members (i.e., bridged)
238 ....Halogen bonded directly to the tricyclo ring system
239 ....Plural ring oxygens in the tricyclo ring system
240 ......Bicyclo ring system having the cyclic anhydride as one of the cyclos
241 ....Plural bicyclo ring systems each having the cyclic anhydride as one of the cyclos
242 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to at least one of the bicyclo ring systems
243 ....Nitrogen or additional chalcogen bonded directly to the bicyclo ring system
244 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the bicyclo ring system
245 ....The -C(=X)- is part of a -C(=X)XH group, wherein the X's are the same or diverse chalcogens, or salt thereof (e.g., trimellitic anhydride, etc.)
246 ....Halogen bonded directly to the bicyclo ring system
247 ....Phthalic anhydride per se
248 ....Preparing by oxidation
249 ....Fluidized catalyst
250 ....Purification or recovery
251 ....By chemical reaction of impurity in presence of added chemical substance
252 .....Plural hetero rings
253 .....Nitrogen or additional chalcogen attached directly or indirectly to the cyclic anhydride by nonionic bonding
254 .....Halogen attached directly or indirectly to the cyclic anhydride by nonionic bonding
255 .....Acyclic carbon chain containing carbon to carbon unsaturation bonded directly to the cyclic anhydride
256 .....Preparing by oxidation
257 ......Of benzene or hydrocarbyl substituted benzene
258 ......Of acyclic or alicyclic hydrocarbon
259 ....Vanadium and phosphorus, in compound or elemental form, utilized
260 ....Additional heavy metal, other than titanium, utilized
261 .....Double bond between ring members of the cyclic anhydride
262 ......Maleic anhydride per se
263 ...Lactones (i.e., -C(=X)O-, wherein X is chalcogen, is part of the hetero ring)
264 ....Spiro
265 .....The spiro includes the lactone ring
266 ....The lactone ring has at least seven members
267 .....Plural ring oxygens in the lactone ring
268 .....Polycyclo ring system having the lactone ring as one of the cyclos
269 ......Bicyclo ring system having the lactone ring as one of the cyclos
270 ....Additional acyclic chalcogen bonded directly to the lactone ring (e.g., zearalanone, etc.)
271 .....Additional chalcogen attached directly or indirectly to the lactone ring by nonionic bonding
272 .....Preparing from a cyclic ketone (i.e., a ketone where the carbonyl is part of a ring)
273 ....The lactone ring is six-membered
274 .....Plural ring oxygens in the lactone ring
275 .....Polycyclo ring system having the lactone ring as one of the cyclos
276 ......Tetracyclo ring system having the lactone ring as one of the cyclos
277 ....The tetracyclo ring system consists of four six-membered cyclos
278 ....At least two additional chalcogens bonded directly to the tetracyclo ring system
279 ....Ring oxygen bonded directly to ring carbon which is a member of two cyclos in the tetracyclo ring system
280 ......Tricyclo ring system having the lactone ring as one of the cyclos
281 ....Two of the cyclos share at least three ring members or ring carbon is shared by the three cyclos (e.g., bridged or peri compounds, etc.)
282 ....Plural ring oxygens in the tricyclo ring system
283 ......Bicyclo ring system having the lactone ring as one of the cyclos

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Oxygen containing hetero ring (e.g., dioxirane, etc.)
...Lactones (i.e., -C(=X)O-, wherein X is chalcogen, is part of the hetero ring)
....The lactone ring is six-membered
.....Polycyclo ring system having the lactone ring as one of the cyclos
......Bicyclo ring system having the lactone ring as one of the cyclos
284 ....Plural bicyclo ring systems each having the lactone ring as one of the cyclos
285 ....Additional acyclic chalcogen bonded directly to the lactone ring
286 ....Benzene ring and the lactone ring bonded directly to the same acyclic carbon
287 ....Acyclic -C(=X)-, wherein X is chalcogen, bonded directly to the lactone ring
288 ....Nitrogen bonded directly to the bicyclo ring system
289 ....The other cyclo of the bicyclo ring system is a six-membered carbocyclic ring to which chalcogen is directly attached
290 ....The bicyclo lactone consists of two six-membered rings and is unsubstituted or hydrocarbyl substituted only
291 .....Acyclic -C(=X)-, wherein X is chalcogen, bonded directly to the lactone ring
292 .....Additional chalcogen bonded directly to the lactone ring
293 .....Nitrogen attached directly or indirectly to the lactone ring by nonionic bonding
294 .....Double bond between ring members of the lactone ring
295 ....The lactone ring is five-membered
296 .....Plural ring oxygens in the lactone ring
297 .....Polycyclo ring system having the lactone ring as one of the cyclos
298 ......Tetracyclo ring system having the lactone ring as one of the cyclos
299 ......Tricyclo ring system having the lactone ring as one of the cyclos
300 ....Two of the cyclos share at least three ring members or ring carbon is shared by the three cyclos (e.g., bridged or peri compounds, etc.)
301 ....The tricyclo ring system consists of the lactone ring, a five-membered carbocyclic ring, and a three-membered carbocyclic ring
302 ......Bicyclo ring system having the lactone ring as one of the cyclos
303 ....Nitrogen bonded directly to the lactone ring
304 ....Nitrogen attached indirectly to the lactone ring by acyclic nonionic bonding
305 ....Chalcogen attached indirectly to the lactone ring by acyclic nonionic bonding
306 ....Plural ring oxygens in the bicyclo ring system
307 ....The other cyclo of the bicyclo ring system is benzene (e.g., phthalides, etc.)
308 ....Two carbocyclic rings bonded directly to the same ring atom of the lactone ring
309 ....Nitrogen bonded directly to each of the carbocyclic rings
310 ....Additional chalcogen bonded directly to the bicyclo ring system
311 ....The bicyclo ring system consists of two five-membered rings
312 ....Acyclic carbon chain containing carbon to carbon unsaturation attached directly or indirectly to the lactone ring by nonionic bonding
313 .....Additional chalcogen bonded directly to the lactone ring
314 ......At least two additional chalcogens bonded directly to the lactone ring
315 ....Double bond between ring members of the lactone ring or chalcogen double bonded directly at the 3- or 4-position of the lactone ring (e.g., ascorbic acid, etc.)
316 ....Amine addition salts
317 ....Sulfur or -C(=X)-, wherein X is chalcogen, bonded directly to acyclic chalcogen
318 ......Acyclic -C(=X)-, wherein X is chalcogen, attached directly or indirectly to the lactone ring by nonionic bonding
319 ......Plural alkyl groups bonded directly to the same ring carbon of the lactone ring (e.g., pantolactone, etc.)
320 .....Plural hetero rings
321 .....Nitrogen attached directly or indirectly to the lactone ring by acyclic nonionic bonding
322 .....Having -C(=X), wherein X is chalcogen, bonded directly to the lactone ring
323 .....Chalcogen attached indirectly to the lactone ring by nonionic bonding
324 .....Halogen attached directly or indirectly to the lactone ring by nonionic bonding
325 .....Preparing by hydrogenation of cyclic anhydrides
326 .....Preparing from compound containing -COO- group
327 ....Acyclic carbon double bonded directly to a ring carbon of a four-membered lactone ring
328 ....Four-membered lactone ring formed
329 .....From a ketene (HCH=C=O, wherein H may be substituted)
330 ...Spiro
331 ....The spiro includes a hetero ring
332 .....The spiro includes a three- or four-membered hetero ring
333 .....Plural ring oxygens in a spiro hetero ring

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Oxygen containing hetero ring (e.g., dioxirane, etc.)
...Spiro
....The spiro includes a hetero ring
.....Plural ring oxygens in a spiro hetero ring
334 ......both rings which form the spiro are hetero rings
335 ....Two six-membered hetero rings, which each contain plural ring oxygens, form the spiro (e.g., spirobi-(meta-dioxane), etc.)
336 ......Polycyclo ring system having one of the two rings which form the spiro as one of the cyclos
337 ....Additional hetero ring containing
338 ....Plural five-membered hetero rings
339 ....Spiro ring is a cyclo in a tricyclo-carbocyclic ring system
340 ....Acyclic -C(=X)-, wherein X is chalcogen, containing
341 ......The spiro hetero ring is five-membered
342 ....Acyclic -C(=X)-, wherein X is chalcogen, containing
343 .....Both rings which form the spiro are hetero rings
344 ......Polycyclo ring system having one of the two hetero rings which form the spiro as one of the cyclos
345 .....Bicyclo ring system having the spiro hetero ring as one of the cyclos (e.g., griseofulvin, etc.)
346 ...The hetero ring has at least seven members
347 ....Plural ring oxygens in the hetero ring
348 .....Polycyclo ring system having the hetero ring as one of the cyclos
349 ......Tricyclo ring system having the hetero ring as one of the cyclos
350 ......Bicyclo ring system having the hetero ring as one of the cyclos
351 ....Three or more ring oxygens in the bicyclo ring system
352 .....Three or more ring oxygens in the hetero ring
353 ......Exactly four oxygens in the hetero ring
354 ....Polycyclo ring system having the hetero ring as one of the cyclos
355 .....Bicyclo ring system having the hetero ring as one of the cyclos
356 ...The hetero ring is six-membered
357 ....Plural ring oxygens in the hetero ring (e.g., 1,2-dioxin, etc.)
358 .....Polycyclo ring system having the hetero ring as one of the cyclos
359 ......Tricyclo ring system having the hetero ring as one of the cyclos
360 ....Two of the cyclos share at least three ring members (i.e., bridged)
361 ....Three or more ring oxygens in the tricyclo ring system (e.g., actinospectacin, etc.)
362 ......Bicyclo ring system having the hetero ring as one of the cyclos
363 ....The two cyclos share at least three ring members (i.e., bridged)
364 ....Three or more ring oxygens in the bicyclo ring system
365 ....The ring oxygens are in the 1,2- or 1,3-positions of the hetero ring
366 ....Nitrogen attached indirectly to the hetero ring by acyclic nonionic bonding
367 .....Three or more ring oxygens in the hetero ring
368 ......Trioxane per se
369 .....The ring oxygens are in the 1,3-positions of the hetero ring (e.g., 1,3-dioxane, etc.)
370 ......Plural hetero rings
371 ......Nitrogen bonded directly to the hetero ring
372 ......Chalcogen or -C(=X), wherein X is chalcogen, bonded directly to the hetero ring
373 ......Nitrogen attached indirectly to the hetero ring by nonionic bonding
374 ......Chalcogen attached indirectly to the hetero ring by nonionic bonding
375 ....The chalcogen, X, is in a -C(=X)- group
376 ......Preparing by reacting an aldehyde with a compound containing acyclic carbon to carbon unsaturation
377 .....The ring oxygens are in the 1,4-positions of the hetero ring (e.g., 1,4-dioxane, etc.)
378 ......Chalcogen attached directly or indirectly to the hetero ring by nonionic bonding
379 ....Plural chalcogens bonded directly to the hetero ring
380 ......Halogen attached directly or indirectly to the hetero ring by nonionic bonding
381 ....Polycyclo ring system having the hetero ring as one of the cyclos
382 .....Pentacyclo ring system having the hetero ring as one of the cyclos
383 .....Tetracyclo ring system having the hetero ring as one of the cyclos
384 ......The tetracyclo ring system consists of four six-membered cyclos
385 .....Tricyclo ring system having the hetero ring as one of the cyclos
386 ......Two of the cyclos share at least three ring members or ring carbon is shared by the three cyclos (e.g., bridged or peri compounds, etc.)
387 ......Plural ring oxygens in the tricyclo ring system
388 ......The tricyclo ring system consists of three six-membered cyclos (e.g., xanthene, etc.)
389 ....Naphtho-pyrans (including hydrogenated)
390 ....Dibenzo(b,d)pyrans (including hydrogenated)
391 ....Plural chalcogens bonded directly to the tricyclo ring system
392 ....Chalcogen bonded directly to the hetero ring

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..Oxygen containing hetero ring (e.g., dioxirane, etc.)
...The hetero ring is six-membered
....Polycyclo ring system having the hetero ring as one of the cyclos
.....Tricyclo ring system having the hetero ring as one of the cyclos
......The tricyclo ring system consists of three six-membered cyclos (e.g., xanthene, etc.)
.......Chalcogen bonded directly to the hetero ring
393 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the tricyclo ring system
394 ....Nitrogen bonded directly to the tricyclo ring system
395 ......Acyclic chalcogen bonded directly to the hetero ring
396 .....Bicyclo ring system having the hetero ring as one of the cyclos
397 ......The two cyclos share at least three ring members (i.e., bridged)
398 ......The bicyclo ring system consists of the hetero ring and a six-membered carbocyclic ring
399 ....Chalcogen bonded directly to the hetero ring
400 ....Plural chalcogens bonded directly to the hetero ring
401 ....Chalcogen bonded directly to the ring carbon para to the ring oxygen (e.g., chromones, etc.)
402 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring
403 ....Benzene ring bonded directly to the hetero ring (e.g., flavones, etc.)
404 ....Nitrogen bonded directly to the bicyclo ring system
405 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the bicyclo ring system
406 ....Carbocyclic ring bonded directly to the hetero ring of the bicyclo ring system (e.g., flavanes, etc.)
407 ....Chalcogen or nitrogen attached indirectly to the hetero ring by acyclic nonionic bonding
408 ....Chalcogen bonded directly to the carbocyclic ring of the bicyclo ring system (e.g., tocopherols, etc.)
409 ....Chalcogen double bonded or plural chalcogens bonded directly to the carbocyclic ring (e.g., coenzyme Q, etc.)
410 ....Chalcogen of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens, bonded directly to the carbocyclic ring of the bicyclo ring system (e.g., tocopherol esters, etc.)
411 ....Preparing from 1,4-di-oxygen substituted carbocyclic ring (e.g., of p-benzoquinones, p-hydroquinones, etc.)
412 ....Processes for chemical modification of substituents on the carbocyclic ring of the bicyclo ring system (e.g., alkylation of tocopherols, etc.)
413 ....Purification or recovery
414 ....Plural hetero rings
415 .....Plural six-membered hetero rings
416 ....Chalcogen bonded directly to the hetero ring
417 .....Plural chalcogens bonded directly to the hetero ring
418 ......Hydroxy bonded directly at the 3-position and oxygen double bonded directly at the 4-position of the hetero ring (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
419 .....Nitrogen attached directly or indirectly to the hetero ring by acyclic nonionic bonding
420 .....Having -C(=X)-, wherein X is chalcogen, attached directly or indirectly to the hetero ring by acyclic nonionic bonding
421 .....Alicyclic ring bonded directly to the chalcogen
422 .....Five-membered carbocyclic ring having the hetero ring as part of one substituent and -COO- as part of another substituent (e.g., prostaglandin intermediates, etc.)
423 .....Hydroxy or halogen attached directly or indirectly to the hetero ring by acyclic nonionic bonding (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
424 ....Nitrogen bonded directly to the hetero ring
425 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring
426 ....Nitrogen attached indirectly to the hetero ring by nonionic bonding
427 ....Chalcogen attached indirectly to the hetero ring by nonionic bonding
428 ....Halogen attached directly or indirectly to the hetero ring by nonionic bonding
429 ...The hetero ring is five-membered
430 ....Plural ring oxygens in the hetero ring
431 .....Three or more ring oxygens in the hetero ring (e.g., ozonides, etc.)
432 .....Polycyclo ring system having the hetero ring as one of the cyclos
433 ......Tricyclo ring system having the hetero ring as one of the cyclos
434 ......Bicyclo ring system having the hetero ring as one of the cyclos
435 ....Plural hetero rings
436 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the bicyclo ring system
437 ....Acyclic chalcogen bonded directly to the bicyclo ring system
438 ....Having -C(=X)-, wherein X is chalcogen, attached indirectly to the bicyclo ring system by nonionic bonding

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)

..Oxygen containing hetero ring (e.g., dioxirane, etc.)

...The hetero ring is five-membered

....Plural ring oxygens in the hetero ring

.....Polycyclo ring system having the hetero ring as one of the cyclos

......Bicyclo ring system having the hetero ring as one of the cyclos

439 ....Nitrogen bonded directly to the bicyclo ring system

440 ....Nitrogen attached indirectly to the bicyclo ring system by nonionic bonding

441 ....The nitrogen is bonded directly to a -C(=X)- group, wherein X is chalcogen

442 ....The nitrogen is attached directly to carbon by a double or triple bond

443 ....Chalcogen attached indirectly to the bicyclo ring system by nonionic bonding

444 ....The chalcogen, X, is in a -C(=X)- group

445 ....Chalcogen attached indirectly to the ring system by nonionic bonding

446 ....The chalcogen, X, is in a -C(=X)- group

447 ....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

448 .....Plural hetero rings

449 .....Nitrogen or chalcogen bonded directly to the hetero ring

450 .....Having -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring

451 .....Nitrogen attached indirectly to the hetero ring by nonionic bonding

452 ......The nitrogen is bonded directly to a -C(=X)- group, wherein X is chalcogen

453 .....Chalcogen attached indirectly to the hetero ring by nonionic bonding

454 ......The chalcogen, X, is in a -C(=X)- group

455 .....Halogen attached directly or indirectly to the hetero ring by nonionic bonding

456 ....Polycyclo ring system having the hetero ring as one of the cyclos

457 .....Tetracyclo ring system having the hetero ring as one of the cyclos

458 .....Tricyclo ring system having the hetero ring as one of the cyclos

459 ......Two of the cyclos share at least three ring members (i.e., bridged)

460 ......Dibenzofurans (including hydrogenated)

461 ....Having -C(=X)-, wherein X is chalcogen, attached directly or indirectly to the tricyclo ring system by nonionic bonding

462 .....Bicyclo ring system having the hetero ring as one of the cyclos

463 ......The two cyclos share at least three ring members (i.e., bridged)

464 ......Plural ring oxygens in the bicyclo ring system

465 ......The bicyclo ring system consists of two five-membered cyclos

466 ......Acyclic chalcogen bonded directly to the hetero ring

467 ......Nitrogen attached directly or indirectly to the hetero ring by acyclic nonionic bonding

468 ......Having -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring

469 ......Benzene ring bonded directly to the hetero ring

470 ......Chalcogen of -C(=X)X-, wherein the X's are the same or diverse chalcogens, bonded directly to the carbocyclic ring of the bicyclo ring system

471 ......Plural double bonds between ring members of the hetero ring

472 ....Plural hetero rings

473 .....Acyclic -C(=X)-, wherein X is chalcogen, attached directly or indirectly to the hetero ring by nonionic bonding

474 ....Cyano bonded directly to the hetero ring

475 ....Chalcogen bonded directly to the hetero ring

476 .....Plural chalcogens bonded directly to the hetero ring

477 ......Chalcogen double bonded directly to the hetero ring

478 ......Having -C(=X)-, wherein X is chalcogen, attached directly or indirectly to the hetero ring by nonionic bonding

479 .....Double bond between ring members of the hetero ring

480 ....Nitrogen bonded directly to the hetero ring

481 .....Nitro bonded directly to the hetero ring

482 ......The hetero ring and an additional nitrogen are bonded directly to the same carbon

483 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring

484 .....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

485 ......Plural -C(=X)X- groups bonded directly to the hetero ring

486 ......The carbon of the -C(=X)X- group is bonded directly at the 3-position of the hetero ring

487 .....Nitrogen bonded directly to the -C(=X)- group

488 .....Additional chalcogen attached indirectly to the hetero ring by nonionic bonding

489 .....Preparation of furfural (i.e., furan-2-aldehyde)

490 ......Purification or recovery of furfural

491 ....Nitrogen attached indirectly to the hetero ring by nonionic bonding

492 .....Nitrogen and the hetero ring are single bonded directly to the same acyclic saturated hydrocarbon group

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Oxygen containing hetero ring (e.g., dioxirane, etc.)
...The hetero ring is five-membered
....Nitrogen attached indirectly to the hetero ring by nonionic bonding
.....Nitrogen and the hetero ring are single bonded directly to the same acyclic saturated hydrocarbon group
493 ......The nitrogen is bonded directly to a -C(=X)- group, wherein X is chalcogen
494 ......Having -C(=X)-, wherein X is chalcogen, attached indirectly to the hetero ring by nonionic bonding
495 ......Chalcogen attached indirectly to the hetero ring by acyclic nonionic bonding
496 .....Having -C(=X)-, wherein X is chalcogen, attached indirectly to the hetero ring by nonionic bonding
497 ....Chalcogen attached indirectly to the hetero ring by nonionic bonding
498 .....The chalcogen, X, is in a -C(=X)- group
499 ......The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
500 ....Plural -C(=X)X- groups attached indirectly to the hetero ring by nonionic bonding
501 ....Additional chalcogen attached indirectly to the hetero ring by nonionic bonding
502 .....Plural chalcogens attached indirectly to the hetero ring by nonionic bonding
503 .....Preparing by hydrogenation of furfural
504 ....Halogen attached directly or indirectly to the hetero ring by nonionic bonding
505 ....Plural double bonds between ring members of the hetero ring
506 .....Hydrocarbyl substituted
507 ....One double bond between ring members of the hetero ring
508 ....Preparing from compound containing -COO- group
509 ....Preparing from a hydroxy containing compound
510 ...The hetero ring is four-membered
511 ....Sulfur or halogen attached directly or indirectly to the hetero ring by nonionic bonding
512 ...The hetero ring is three-membered consisting of one oxygen and two carbons
513 ....Processes
514 .....Epihalohydrin, glycerol monohalohydrin or glycerol dihalohydrin reactant
515 ......Glycidyl ester formed by bonding the oxy of a -COO- group directly to an acyclic carbon which is bonded directly to an oxirane ring
516 ......Glycidyl ether formed by bonding oxygen directly to an acyclic carbon which is bonded directly to an oxirane ring
517 ....Phenolic ether formed
518 .....Oxirane ring formed
519 ......Carbonyl of aldehyde or ketone reacted to form oxirane ring
520 ......By dehydrohalogenation of a halohydrin or by reacting a hypohalite or hypohalous acid with an ethylenically unsaturated compound at the site of unsaturation
521 ....Oxirane ring and chalcogen, cyano, nitrogen, or halogen are bonded directly to the same carbon (e.g., glycidyl ester formed, etc.)
522 ....Oxirane ring is unsubstituted or hydrocarbyl substituted only
523 ......Epoxidation at site of ethylenic unsaturation
524 ....Liquid phase epoxidation
525 ....Organic peracid utilized
526 ....In situ formation of the organic peracid from carboxylic acid and hydrogen peroxide
527 ....Epoxidizing unsaturated fat or fatty oil, or unsaturated derivative thereof
528 ....Epoxidizing unsaturated fat or fatty oil, or unsaturated derivative thereof
529 ....Organic hydroperoxide reactant
530 ....Boron containing catalyst utilized
531 ....Hydrogen peroxide utilized
532 ....Air or molecular oxygen utilized
533 ....Heavy metal containing catalyst utilized
534 ....Silver containing catalyst utilized
535 ....Fluidized catalyst
536 ....Additional heavy metal containing material utilized (e.g., promoter which contains heavy metal utilized, etc.)
537 ....Group IIA light metal containing material utilized
538 ....Purification or recovery
539 .....Ether or -COO- group formed
540 .....Isomerization, halogenation, hydrogenation, or dehydrohalogenation to form compound
541 .....Purification or recovery
542 ......By adsorption or by chemical reaction with impurity
543 ....Polycyclo ring system having the hetero ring as one of the cyclos
544 .....Tetracyclo ring system having the hetero ring as one of the cyclos
545 .....Tricyclo ring system having the hetero ring as one of the cyclos
546 .....Bicyclo ring system having the hetero ring as one of the cyclos
547 ......Plural bicyclo ring systems each having a hetero ring as one of the cyclos
548 ....Having -C(=X)-, wherein X is chalcogen, bonded directly to the hetero ring
549 .....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HETEROCYCLIC CARBON COMPOUNDS CONTAINING A HETERO RING HAVING CHALCOGEN (i.e., O, S, Se, or Te) OR NITROGEN AS THE ONLY RING HETERO ATOMS (Class 260, Subclass 239R)
..Oxygen containing hetero ring (e.g., dioxirane, etc.)
...The hetero ring is three-membered consisting of one oxygen and two carbons
550 ....Cyano, nitrogen, or halogen bonded directly to the hetero ring
551 ....Nitrogen attached indirectly to the hetero ring by nonionic bonding
552 .....Cyano or nitrogen and the hetero ring bonded directly to the same carbon
553 .....The nitrogen is bonded directly to a -C(=X)- group, wherein X is chalcogen
554 ....Chalcogen attached indirectly to the hetero ring by nonionic bonding
555 .....Chalcogen and the hetero ring bonded directly to the same carbon (e.g., glycidyl ethers, etc.)
556 ......Sulfur or -C(=X)-, wherein X is chalcogen, attached indirectly to the hetero ring by nonionic bonding
557 ....The chalcogen, X, is part of a -C(=X)X- group or a -X-X- group, wherein the X's are the same or diverse chalcogens (e.g., -COO-HCH-oxirane, etc.)
558 ......Halogen attached indirectly to the hetero ring by nonionic bonding
559 ....Carbocyclic ring containing
560 ......Carbocyclic ring containing
561 .....The chalcogen, X, is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
562 ......Additional -C(=X)- or other sulfur attached indirectly to the hetero ring
563 ....Halogen attached indirectly to the hetero ring by nonionic bonding

ORGANIC COMPOUNDS
1 .Azides
2 ..With preservative or stabilizer
3 ..Phoshorus attached directly or indirectly to the azide group by nonionic bonding
4 ..Silicon, boron, aluminum or heavy metal containing
5 ..Chalcogen or nitrogen bonded directly to the azide group (e.g., sulfonyl azides, etc.)
6 ..Having -C(=X)-, wherein X is chalcogen, bonded directly to the azide group
7 ...Chalcogen bonded directly to the -C(=X)- group
8 ..Benzene ring bonded directly to the azide group
9 ..Cyclopentanohydrophenanthrene ring system containing
10 ..Acyclic carbon bonded directly to the azide group
11 ...Nitrogen attached indirectly to the azide group by acyclic nonionic bonding (e.g., diazides, etc.)
12 ....Having -C(=X)-, wherein X is chalcogen, attached indirectly to the azide group by acyclic nonionic bonding
100 .Acyclic carbon bonded directly to three benzene rings and to cyano (e.g., triphenylacetonitrile, etc.)
101 .Acyclic carbon bonded directly to three benzene rings or to two benzene rings and a cyclohexadienyl ring, which acyclic carbon may not be bonded to a fourth carbon (e.g., triphenylmethane dyestuffs, etc.)
102 ..With preservative or stabilizer
103 ..Heavy metal or alumium containing
104 ..Nitrogen, sulfur, phosphorus, or peroxy attached directly to the acyclic carbon by nonionic bonding
105 ..The acyclic carbon and an additional carbon are bonded directly to the same oxygen (ethers, esters, etc.)
106 ..One of the rings, or a polycyclo ring system containing one of the rings, is bonded directly to -N=C=O or to -C(=O)OH (wherein H may be replaced by a group IA or IIA light metal, or by substituted or unsubstituted ammonium)
107 ...Chalcogen bonded directly to the ring or ring system (e.g., salicyclic type, hydroxynaphthoic type, etc.)
108 ..One of the rings is part of a polycyclo ring system (e.g., naphthyldiphenylcarbinol, etc.)
109 ..An acyclic alkylene group is bonded directly to nitrogen and to chalcogen, cyano, carbonyl or additional nitrogen (e.g., N-hydroxyalkyl, N-cyanoalkyl, N-sulfatoalkyl, aminoalkylamino groups, etc.)
110 ..One of the rings and a benzene ring are bonded directly to the same nitrogen (e.g., triphenylrosaniline, etc.)
111 ..Nitrogen, except as cyano, attached indirectly to a ring by acyclic nonionic bonding (e.g., benzyl rosanilines, etc.)
112 ..Carbon bonded directly to -S(=O)(=O)OH (wherein H may be replaced by a group IA or IIA light metal, or by substituted or unsubstituted ammonium; i.e., sulfonic acids and salts thereof)
113 ..Nitrogen bonded directly to one of the rings (e.g., malachite green, rosophenoline, etc.)
114 ...Nitrogen bonded directly to each of the rings (e.g., rosaniline, crystal violet, etc.)
115 ..Chalcogen bonded directly to one of the rings (e.g., fuchsone, etc.)
200 .Tetracyclo naphthacene configured ring system having at least one double bond between ring members and having oxygen bonded directly to a carbon of an interior ring which carbon is a member of one ring only
201 ..Two oxygens double bonded directly to the interior ring in para positions
202 ..At least six oxygens bonded directly to the tetracyclo ring system
203 ...Nitrogen and carbonyl or cyano bonded directly to the tetracyclo ring system (e.g., tetracycline, etc.)
204 ....Carbon double bonded directly to the tetracyclo ring system (e.g., 6-methylene tetracycline, etc.)
205 ....Plural nitrogens bonded directly to the tetracyclo ring system
206 ....Processes
207 .....Heavy metal or aluminum containing material utilized
208 .Polycyclo ring system containing anthracene configured ring system having at least one double bond between ring members and having oxygen single bonded or any atom double bonded directly at the 9- and 10-positions (e.g., anthraquinones, etc.)
209 ..Phosphorus, selenium, silicon, heavy metal or aluminum containing
210 ..Nitrogen or carbon double bonded directly at the 9- or 10-position
211 ..Sulfur bonded directly to oxygen which is single bonded directly at the 9- or 10-position
212 ..The polycyclo ring system is bonded directly to an additional polycyclo ring system having at least three cyclos (e.g., plural anthracene configured ring systems bonded directly to each other, etc.)
213 ..The polycyclo ring system and an additional polycyclo ring system having at least three cyclos are bonded directly to the same atom (e.g., plural anthracene configured ring systems bonded directly to the same sulfur, etc.)
214 ...The atom is nitrogen (e.g., anthrimides, etc.)
215 ....At least five cyclos in the polycyclo ring system
216 ....The polycyclo ring system is tetracyclic
217 ....Nitrogen, oxygen, sulfur, carbon or halogen bonded directly at beta position of the anthracene configured ring system (i.e., 2-, 3-, 6- or 7-position)

ORGANIC COMPOUNDS

.Polycyclo ring system containing anthracene configured ring system having at least one double bond between ring members and having oxygen single bonded or any atom double bonded directly at the 9- and 10-positions (e.g., anthraquinones, etc.)

218 ..The polycyclo ring system is attached indirectly by nonionic bonding to an additional polycyclo ring system having at least three cyclos (e.g., plural anthracene ring systems attached indirectly to each other by nonionic bonding, etc.)

219 ...Nitrogen, oxygen, sulfur, carbon or halogen bonded directly at beta position of the anthracene configured ring system (i.e. 2-, 3-, 6- or 7-position)

220 ..The polycyclo ring system contains at least four cyclos

221 ..Sulfur bonded directly at beta position (i.e., 2-, 3-, 6- or 7-position)

222 ...Nitrogen or additional sulfur bonded directly to the sulfur

223 ...Additional carbon bonded directly to the sulfur

224 ...Carbonyl, nitrogen, oxygen or halogen bonded directly at beta position (i.e., 2-, 3-, 6- or 7-position)

225 ...Nitrogen bonded directly at alpha position (i.e., 1-, 4-, 5- or 8-position)

226 ....Oxygen, sulfur or halogen bonded directly at alpha position (i.e., 1-, 4-, 5- or 8-position)

227 .....Plural nitrogens, plural oxygens, plural sulfurs, or plural halogens bonded directly at alpha positions

228 ....Additional ring containing

229 .....Containing cyano or containing nitrogen bonded directly to sulfur (e.g., sulfonamide containing, etc.)

230 .....Acyclic carbonyl or thiocarbonyl containing (e.g., thiocarboxamide containing, etc.)

231 ......Oxygen, sulfur or halogen bonded directly to the additional ring

232 .....Oxygen, sulfur, nitro or halogen bonded directly to the additional ring

233 ......Plural additional rings containing

234 ..Sulfur bonded directly at alpha position (i.e., 1-, 4-, 5- or 8-position)

235 ...Nitrogen or halogen bonded directly to the anthracene configured ring system

236 ..Nitrogen bonded directly at beta position (i.e., 2-, 3-, 6- or 7-position)

237 ...Oxygen, nitrogen or additional carbon bonded directly to the nitrogen

238 ..Nitrogen bonded directly at alpha position (i.e., 1-, 4-, 5- or 8-position)

239 ...Cyano bonded directly to the anthracene configured ring system

240 ...Oxygen bonded directly at beta position (i.e., 2-, 3-, 6- or 7-position)

241 ....Additional carbon bonded directly to the oxygen

242 .....The additional carbon is part of a ring

243 ...Oxygen bonded directly at alpha position (i.e., 1-, 4-, 5- or 8-position)

244 ....Halogen bonded directly to the anthracene configured ring system

245 ....Carbon bonded directly to the anthracene configured ring system

246 ....Oxygen bonded directly to the nitrogen (e.g., nitro bonded directly at 8-position, etc.)

247 ....Additional carbon bonded directly to the nitrogen

248 .....Cyano, carboxamide, sulfonamide or halogen containing

249 ...Halogen bonded directly to the anthracene configured ring system

250 ....Carbonyl, oxygen or sulfur bonded directly to he nitrogen

251 ...Carbon bonded directly to the anthracene configured ring system

252 ....Nitrogen or halogen bonded directly to the carbon (e.g., carboxamide bonded directly to the anthracene configured ring system, etc.)

253 ...Oxygen or sulfur bonded directly to the nitrogen (e.g., 1-nitroanthraquinone, etc.)

254 ....Plural nitrogens bonded directly at alpha positions (i.e., 1-, 4-, 5- or 8-positions, e.g., 1, 5-dinitroanthraquinones, etc.)

255 ...Additional carbon bonded directly to the nitrogen

256 ....The additional carbon is part of a carbonyl group (i.e., carboxamido bonded directly at alpha position)

257 .....Nitrogen, oxygen, sulfur or halogen bonded directly to an additional ring

258 ....The additional carbon is part of a ring or ring system

259 .....Oxygen, sulfur or halogen bonded directly to the ring or ring system

260 ....Acyclic carbonyl, sulfur or halogen containing

261 ..Oxygen bonded directly at beta position (i.e., 2-, 3-, 6- or 7-position)

262 ..Oxygen bonded directly at alpha position (i.e., 1-, 4-, 5-, or 8-position)

263 ..Halogen bonded directly at beta position (i.e., 2-, 3-, 6-, or 7-position)

264 ..Halogen bonded directly at alpha position (i.e., 1-, 4-, 5- or 8-position)

265 ..Carbon bonded directly at beta position (i.e., 2-, 3-, 6- or 7-position)

266 ...Nitrogen, halogen or additional oxygen containing

267 ..Carbon bonded directly at alpha position (i.e., 1-, 4-, 5- or 8-position)

268 ..Processes of forming anthraquinone per se or enolic form thereof by reacting an organic acid, aldehyde, anhydride or an indane (e.g., reacting phthalic anhydride, methyl phenylindane, etc.)

ORGANIC COMPOUNDS

.Polycyclo ring system containing anthracene configured ring system having at least one double bond between ring members and having oxygen single bonded or any atom double bonded directly at the 9- and 10-positions (e.g., anthraquinones, etc.)

269 ..Processes of forming anthraquinone per se or enolic form thereof utilizing heavy metal containing material (e.g., vanadium catalyst utilized, etc.)

270 ...Light metal or nitrogen containing material utilized (e.g., ceric ammonium nitrate catalyst utilized, etc.)

271 .Polycyclo ring system containing anthracene configured ring system having at least one double bond between ring members and having oxygen single bonded or any atom double bonded direct at the 9- or 10-position (e.g., anthrones, anthranols, etc.)

272 ..Phosphorus, selenium, tellurium, or heavy metal containing

273 ..The polycyclo ring system is bonded directly to an additional polycyclo ring system having at least three cyclo (e.g., plural anthracene configured ring systems bonded directly to each other, etc.)

274 ..The polycyclo ring system is attached indirectly by nonionic bonding to an additional polycyclo ring system having a least three cyclos (e.g., plural anthracene configured ring systems bonded directly to the same nitrogen, etc.)

275 ..The polycyclo ring system has at least ten cyclos

276 ..The polycyclo ring system has nine cyclos

277 ...Cyano, nitrogen or sulfur bonded directly to the nonacyclo ring system

278 ....Halogen containing or processes wherein a halogen containing material is utilized

279 ...Oxygen single bonded directly to the nonacyclo ring system

280 ....Halogen or light metal containing or processes wherein a halogen or light metal containing is utilized

281 ...Halogen containing

282 ..The polycyclo ring system has seven or eight cyclos

283 ...Halogen containing

284 ..The polycyclo ring system has five of six cyclos

285 ...Halogen containing

286 ..The polycyclo ring system has four cyclos (e.g., benzanthrones, etc.)

287 ...Cyano, carbonyl, nitrogen or sulfur bonded directly to the tetracyclo ring system

288 ...Halogen or carbon bonded directly to the tetracyclo ring system

289 ..Nitrogen or sulfur bonded directly to the anthracene configured ring system

290 ..Carbon, halogen or plural oxygens bonded directly to the anthracene configured ring system

291 .Cyclohexadiene having atoms double bonded directly at the 1- and 2-positions (e.g., orthoquinones, etc.)

292 ..Polycyclo ring system having the cyclohexadiene as one of the cyclos

293 .Cyclohexadiene having atoms double bonded directly at the 1- and 4-positions (e.g., paraquinones, etc.)

294 ..Phosphorus, heavy metal or aluminum containing

295 ..Polycyclo ring system having the cyclohexadiene as one of the cyclos

296 ...Oxygen double bonded directly at the 1- and 4- positions

297 ....Nitrogen or halogen bonded directly to the polycyclo ring system

298 ....Chalcogen single bonded directly to the polycyclo ring system

299 ....Carbon bonded directly to the polycyclo ring system

300 ...Plural oxygens and plural nitrogens bonded directly to the polycyclo ring system

301 ..Nitrogen double bonded directly at the 1- and 4- positions

302 ..Nitrogen double bonded directly at the 1- or 4- positions

303 ..Carbon double bonded directly at the 1- and 4- positions

304 ..Carbon double bonded directly at the 1- or 4- position

305 ..Sulfur bonded directly at the 2-, 3-, 5- or 6- position

306 ..Nitrogen bonded directly at the 2-, 3-, 5- or 6- position

307 ..Oxygen bonded directly at the 2-, 3-, 5-, or 6- position

308 ..Halogen bonded directly at the 2-, 3-, 5-, or 6- position

309 ..Carbon donded directly at the 2-, 3-, 5- or 6- position

310 ...At least three carbons bonded directly to the cyclohexadiene

500 .Cyclopentanohydrophenanthrene ring system wherein two nonadjacent carbons of the ring system are bonded directly to each other (e.g., 3,5-cyclocholesterols, 3,5-cycloandrostanes, etc.)

501 ..Oxygen bonded directly at the 6-position of the cyclopentanohydrophenanthrene ring system

502 .Cyclopentanohydrophenanthrene ring system containing

503 ..With preservative or stabilizer

504 ..Heavy metal or aluminum containing

505 ..Boron, silicon, selenium or tellurium containing

506 ..Phosphorus attached directly or indirectly to the cyclopentanohydrophenanthrene ring system by nonionic bonding

507 ...The phosphorus is bonded directly at the 21-position or is bonded directly to a chalcogen which is bonded directly at the 21-positon

508 ..Spiro

509 ..Plural cyclopentanohydrophenanthrene ring systems

510 ..The cyclopentanohydrophenanthrene ring system is part of a polycyclo ring system having at least five cyclos

511 ...The additional ring shares the 1,2-positions of the cyclopentanohydrophenanthrene ring system

ORGANIC COMPOUNDS

.Cyclopentanohydrophenanthrene ring system containing

..The cyclopentanohydrophenanthrene ring system is part of a polycyclo ring system having at least five cyclos

512 ...The additional ring shares the 5,10- or 5,19-positions of the cyclopentanohydrophenanthrene ring system

513 ...The additional ring shares the 6,7-positions of the cyclopentanohydrophenanthrene ring system

514 ...The additional ring shares the 16,17-positions of the cyclopentanohydrophenanthrene ring system

515 ..Nitrogen bonded directly to the cyclopentanohydrophenanthrene ring system

516 ...The nitrogen is double bonded to the cyclopentanohydrophenanthrene ring system

517 ....The nitrogen is part of a semicarbazone or thiosemicarbazone group

518 ....Additional nitrogen bonded directly to the nitrogen (e.g., hydrazones, etc.)

519 ....Oxygen bonded directly to the nitrogen (e.g., oximes, isonitrosos, etc.)

520 .....The nitrogen is bonded directly at the 3-position

521 ...The nitrogen is bonded directly at the 3-position

522 ...The nitrogen is bonded directly at the 17-position

523 ..Sulfur bonded directly to the cyclopentanohydrophenanthrene ring system

524 ...The sulfur is bonded directly at the 1- or 3-position

525 ...The sulfur is bonded directly at the 16- or 17-position

526 ..Carbon double bonded directly to the cyclopentanohydrophenantrene ring system

527 ...The carbon is double bonded directly at the 2-position

528 ...The carbon is double bonded directly at the 16-position

529 ....And carbon bonded directly at the 17 beta-position is a member of an acyclic chain of two or more uninterrupted carbons

530 ...The carbon is double bonded directly at the 17-position (e.g., fusidic acids, etc.)

531 ....Nitrogen or sulfur containing

532 ....The carbon is a member of an acyclic chain of exactly two carbons (e.g., 3-keto-4,17(20)-pregnadienes, 17-ethylidene-estranes,etc.)

533 .....Plural oxygens bonded directly to the cyclopentanohydrophenanthrene ring system

534 ......And oxygen bonded directly at the 21-position of the compound

535 ..Halogen bonded directly at the 12-position of the cyclopentanohydrophenanthrene ring system

536 ..Halogen bonded directly at the 16-position of the cyclopentanohydrophenanthrene ring system

537 ...Plural halogens bonded directly at the 16-position

538 ...Carbon bonded directly at the 17 beta-position is a member of an acyclic chain of two or more uninterrupted carbons

539 ..Halomethyl bonded directly to the cyclopentanohydrophenanthrene ring system (e.g., 16-trifluoromethyl progesterones, etc.)

540 ..Carbon bonded directly at the 17 beta-position of the cyclopentanohydrophenanthrene ring system is a member of an acyclic chain of six or more uninterrupted carbons (e.g., sterols, etc.)

541 ...Oxygen bonded directly at the 1-, 2-, or 4-position

542 ...Oxygen bonded directly at the 6- or 7-position

543 ...Carbon or halogen bonded directly at the 6- or 7-position

544 ...Exactly one oxygen bonded directly to the cyclopentanohydrophenanthrene ring system (e.g., cholesterols, cholestanols, stigmasterols, etc.)

545 ....Processes of isolating, purifying or recovering from animal, vegetable or fungal sources (e.g., wool fat or grease, lanolin, fish oils, animal tissue, soybean oil, tall oil or pitch, wood products, sugar cane, soap stocks, yeast, molds, etc.)

546 ....Halogen or oxygen bonded directly to the acyclic carbon chain at the 17 beta-position (e.g., 25-hydroxy cholesterols, etc.)

547 ....Unsaturation between the 7- and 8-positions (e.g., ergosterols, 7-dehydrocholesterols, provitamin D, etc.)

548 ..Carbon bonded directly at the 17 beta-position of the cyclopentanohydrophenanthrene ring system is a member of an acyclic chain of five uninterrupted carbons (e.g., choladienes, cholanic acids, etc.)

549 ...Oxygen bonded directly at the 12-position (e.g., cholic acids, desoxycholic acids, dehydrocholic acids, etc.)

550 ....Halogen, nitrogen, or sulfur containing (e.g., glycocholic acids, taurocholic acids, etc.)

551 ...Oxygen bonded directly at the 6- or 7-position (e.g., chenodeoxycholic acids, ursodeoxycholic acids, etc.)

552 ...Exactly one oxygen bonded directly to the cyclopentanohydrophenanthrene ring system (e.g., 3-hydroxycholanic acids, lithocholic acids, etc.)

553 ..Carbon bonded directly at the 17 beta-position of the cyclopentanohydrophenanthrene ring system is a member of an acyclic chain of three or four uninterruped carbons, (e.g., diketobisnorcholenic acids, etc.)

554 ...Halogen or nitrogen containing (e.g., 20-cyano-pregnanes, 21-cyano-pregnenes, etc.)

ORGANIC COMPOUNDS
.Cyclopentanohydrophenanthrene ring system containing
..Carbon bonded directly at the 17 beta-position of the cyclopentanohydrophenanthrene ring system is a member of an acyclic chain of three or four uninterruped carbons, (e.g., diketobisnorcholenic acids, etc.)
555 ...Exactly one oxygen bonded directly to the cyclopentanohydrophenanthrene ring system (e.g., 3-keto-bisnorcholenic acids, 3-keto-bisnor-cholene-22-als, etc.)
556 ....And oxygen bonded directly at the 20-position of the compound
557 ..Carbon bonded directly at the 17-beta-position of the cyclopentanohydrophenanthrene ring system is a member of an acyclic chain of two uninterrupted carbons (e.g., pregnanes, etc.)
558 ...The A ring is a benzene ring
559 ...Three or more oxygens bonded directly to the cyclopentanohydrophenanthrene ring system
560 ....Oxygen bonded directly at the 1-, 2- or 4-position
561 ....Oxygen bonded directly at the 6-position
562 ....Oxygen bonded directly at the 7-, 8- or 9-position
563 ....Oxygen bonded directly at the 14- or 15-position
564 ....Oxygen bonded directly at the 16-position
565 .....Carbon or halogen bonded directly at the 6- or 7-position
566 .....Oxygen bonded directly at the 21-position (e.g., triamcinolone, etc.)
567 ....Halogen bonded directly at the 2- or 4-position (e.g., 4-bromocortisones, etc.)
568 .....The cyclopentanohydrophenanthrene ring system is fully saturated
569 ....Oxygen bonded directly at the 3-, 11-, and 17-positions
570 .....Oxygen bonded directly at the 21-position
571 ......Carbon bonded directly at the 1-, 2- or 4-position
572 ......Carbon or halogen bonded directly at the 6- or 7-position
573 ....Carbon bonded directly at the 16-position
574 ......Carbon bonded directly at the 16-position (e.g., betamethasones, dexamethasones, etc.)
575 ......Nitrogen or sulfur containing
576 ......Unsaturation between the 1- and 2-positions and the 4- and 5-positions (e.g., prednisones, prednisolones, etc.)
577 ......Unsaturation between the 4- and 5-positions (e.g., cortisones, etc.)
578 ....Additional unsaturation in the cyclopentanohydrophenanthrene ring system
579 ......The cyclopentanohydrophenanthrene ring system is fully saturated
580 .....Carbon or halogen bonded directly at the 6- or 7-position
581 .....Unsaturation between the 4- and 5-positions (e.g., 21-thiol prednisones, 21-thio cortisones, etc.)
582 ...Two oxygens bonded directly to the cyclopentanohydrophenanthrene ring system
583 ....Oxygen bonded directly at the 5-, 6- or 7-position
584 ....Oxygen bonded directly at the 12-position
585 ....Oxygen bonded directly at the 15- or 16-position
586 ....Oxygen bonded directly at the 3- and 11-position
587 .....Oxygen bonded directly at the 21-position
588 ......Unsaturation between the 4- and 5-positions (e.g., aldosterones, corticosterones, etc.)
589 .....Carbon bonded directly at the 16-position
590 .....Unsaturation between the 4- and 5-positions
591 .....The cyclopentanohydrophenanthrene ring system is fully saturated
592 ....Oxygen bonded directly at the 3- and 17-positions
593 .....Oxygen bonded directly at the 21-position
594 ......Carbon or halogen bonded directly at the 6- or 7-position
595 ......Unsaturation between the 4- and 5-positions (e.g., 17-alpha-hydroxy-progesterones , etc.)
596 .....Carbon bonded directly at the 16-position
597 .....Carbon or halogen bonded directly at the 6- or 7-position
598 .....Unsaturation between the 4- and 5-positions
599 ...Exactly one oxygen bonded directly to the cyclopentanohydrophenanthrene ring system
600 ....Oxygen bonded directly at the 21-position
601 .....Unsaturation between the 4- and 5-position (e.g., desoxycorticosterones, etc.)
602 ......Additional unsaturation in the cyclopentanohydrophenanthrene ring system
603 ....Carbon or halogen bonded directly at the 1-, 2-, 3-, 4- or 5-position
604 ....Carbon bonded directly at the 16-position (e.g., 16-cyanopregn-4-ene-3, 20-diones, etc.)
605 ....Carbon or halogen bonded directly at the 6- or 7-position
606 ....Unsaturation between the 5- and 6-positions (e.g., pregnenolones, etc.)
607 ....Unsaturation between the 4- and 5-positions (e.g., progesterones, etc.)
608 .....Additional unsaturation in the cyclopentanohydrophenanthrene ring system
609 ....The cyclopentanohydrophenanthrene ring system is fully saturated (e.g., pregnandiols, pregnanolones, etc.)

ORGANIC COMPOUNDS

.Cyclopentanohydrophenanthrene ring system containing

610 ..Acyclic carbon bonded directly at the 17 beta-position of the cyclopentanohydrophenanthrene ring system (e.g., etiocholanic acids, 17-cyanoetiocholanes, 17-aldehydrostanes, etc.)

611 ...Exactly one oxygen bonded directly to the cyclopentanohydrophenanthrene ring system (e.g., 3-keto-etiocholanic acids, etc.)

612 ..Three or more oxygens bonded directly to the cyclopentanohydrophenanthrene ring system

613 ...Oxygen bonded directly at the 1-position

614 ...Oxygen bonded directly at the 2- or 4-position

615 ...Oxygen bonded directly at the 5-, 6- or 7-position

616 ...Oxygen bonded directly at the 16-position

617 ....The A ring is a benzene ring (e.g., estriols, etc.)

618 ...The A ring is a benzene ring

619 ...Oxygen bonded directly at the 3-, 11- and 17-positions (e.g., 1-androstene-3,11,17-triones, etc.)

620 ....Carbon or halogen bonded directly at the 1, 2- or 4-position

621 ....Unsaturation between the 4- and 5-positions (e.g., adrenosterones, 11-hydroxytestosterones, etc.)

622 .....17 alpha-position substituted (e.g., 11-keto-17 alpha-alkyltestosterones, etc.)

623 ..Two oxygens bonded directly to the cyclopentanohydrophenanthrene ring system

624 ...Oxygen bonded directly at the 16-position

625 ...The A ring is a benzene ring (e.g., estrones, estradiols, etc.)

626 ....Nitrogen or sulfur containing

627 ....Carbon or halogen bonded directly at the 1-, 2- or 4-position

628 ....Carbon or halogen bonded directly at the 6- or 7-position

629 ....Carbon bonded directly at the 11-, 15- or 16-position

630 ....17 alpha-position substituted

631 .....The 17 alpha-position substituent contains acyclic carbon-to-carbon unsaturation

632 ...19-position substituted (e.g., 19-methylene-androstanes, 10-cyanoestranes, etc.)

633 ...Carbon bonded directly at the 10- and 13-positions (e.g., androstenes, etc.)

634 ....Carbon or halogen bonded directly at the 1- or 3-position

635 ....Carbon or halogen bonded directly at the 2- or 4-position

636 ....Unsaturation between the 5- and 6-positions (e.g., dehydroandrosterones, etc.)

637 .....17 alpha-position substituted (e.g., 17 alpha-ethynyl-5-androstene-3 beta, 17 beta-diols, etc.)

638 ....Unsaturation between the 4- and 5-positions (e.g., testosterones, etc.)

639 .....17 alpha-position substituted (e.g., 17 alpha-alkynylandrosta-4, 6-diene-3,17-diols, etc.)

640 .....Additional unsaturation in the cyclopentanohydrophenanthrene ring system

641 ....The cyclopentanohydrophenanthrene ring system is fully saturated (e.g., androstandiols, androsterones, dihydrotestosterones, etc.)

642 ...Carbon bonded directly at the 13-position (e.g., 19-norandrostenes, estradienes, etc.)

643 ....Carbon or halogen bonded directly at the 1-, 2-, 4- or 5-position

644 ....Unsaturation between the 5- and 10-positions

645 .....17 alpha-position substituted (e.g., 17 alpha-ethynyl-17-hydroxy-5(10) estren-3-ones, etc.)

646 ....Unsaturation between the 4- and 5-positions (e.g., 19-nortestosterones, 13 beta-alkyl-4-gonene-3,17-diones etc.)

647 .....Carbon or halogen bonded directly at the 6- or 7-position

648 .....17 alpha-position substituted (e.g., 17 alpha-ethynyl-19-nortestosterones, etc.)

649 ....The cyclopentanohydrophenanthrene ring system is fully saturated (e.g., 17 alpha-alkyl-17 beta-hydroxyestran-3-ones, etc.)

650 ..Oxygen bonded directly at the 16- or 17-position of the cyclopentanohydrophenanthrene ring system

651 ...Carbon or halogen bonded directly at the 1- or 3-position

652 ...Carbon or halogen bonded directly at the 2-, 4- or 5-position

653 .9,10-Seco-cyclopentanohydrophenanthrene ring system or 9,10-seco-cyclopentanohydrophenanthrene ring system having a bond between the 3- and 5-positions (e.g., vitamin D compounds, cholecalciferols, activated 7-dehydrocholesterols, dihydrotachysterols, 3,5-cyclovitamin D compounds, etc.)

CLASS 556 PART OF THE CLASS 532-570 SERIES -- ORGANIC COMPOUNDS

DECEMBER 1990

> IN THIS SERIES OF CLASSES, CLASS 556 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (Class 532, Subclass 1)

1 .HEAVY METAL CONTAINING (e.g., Ga, In or Tl, etc.)

2 ..With preservative or stabilizer

3 ...Compound preserved or stabilized contains lead bonded directly to carbon

4 ....Halogen containing preservative or stabilizer

5 ....Chalcogen containing preservative or stabilizer

6 ...Nitrogen containing preservative or stabilizer

7 ..Boron containing

8 ...Hydrogen bonded directly to the boron

9 ..Silicon containing

10 ...Silicon and heavy metal bonded directly to the same chalcogen

11 ...Heavy metal bonded directly to unsaturated five-membered carbocyclic ring

12 ...At least three carbons bonded directly to silicon

13 ..Phosphorus containing

14 ...Additional diverse heavy metal or aluminum containing

15 ...The heavy metal is bonded directly to the carbon of a -C(=X)- group, wherein X is chalcogen (e.g., cyclopentadienyl manganese dicarbonyl triphenyl phosphine, etc.)

16 ....Iron, cobalt, nickel, ruthenium, rhodium, palladium, osmium, iridium, or platinum containing (Fe, Co, Ni, Ru, Rh, Pd, Os, Ir or Pt)

17 ...Plural phosphori bonded directly to the same nitrogen or chalcogen (e.g., pyrophosphates, etc.)

18 ...Plural phosphori bonded directly to the same carbon or attached to each other by an acyclic chain which chain consists of carbons or of carbons and chalcogens

19 ...Carbon bonded directly to the phosphorus

20 ....Plural carbons bonded directly to the phosphorus

21 .....Exactly three carbons bonded directly to the phosphorus (e.g., triphenylphosphines, etc.)

22 ......And carbon bonded directly to the heavy metal

23 ......Hydrogen or halogen bonded directly to the heavy metal

24 ...Exactly four chalcogens bonded directly to the phosphorus (e.g., phosphates, orthophosphates, etc.)

25 ....At least two of the chalcogens are sulfur (e.g., zinc dihydrocarbyl dithiophosphates, etc.)

26 ....Nitrogen or -C(=X)- containing, wherein X is chalcogen

27 ..Aluminum containing

28 ..Plural diverse heavy metals containing

29 ...Heavy metal double bonded directly to heavy metal

30 ...Arsenic, antimony, or bismuth containing (As, Sb, or Bi)

31 ...Containing -C(=X)-, wherein X is chalcogen (e.g., carbonyl containing, etc.)

32 ..Nitrogen double bonded directly to carbon

33 ...Carbocyclic ring bonded directly to the nitrogen (e.g., azomethines, etc.)

34 ....Additonal carbon double bonded to nitrogen (e.g., bisazomethines, etc.)

35 ...Additional nitrogen bonded directly to the carbon or nitrogen

36 ....Guanidines

37 ...Chalcogen bonded directly to the carbon or nitrogen (e.g., oximes, etc.)

38 ..Nitrogen and plural sulfurs bonded directly to the same carbon (e.g., thiocarbamates, etc.)

39 ...Plural nitrogens bonded directly to the same carbon or attached to each other by a chain consisting of carbons, which carbons may be part of a ring (e.g., ethylene bis-dithiocarbamates, etc.)

40 ..Plural -C(=X)- groups, wherein X is chalcogen, bonded directly to the same non-benzenoid carbons, or the enolate thereof. (e.g., beta-diketone chelates, acetylacetonates, etc.)

41 ...Carbon or halogen bonded directly to the metal

42 ..Vanadium, niobium, or tantalum containing (V, Nb, or Ta)

43 ...Carbon bonded directly to the metal (e.g., cyclopentadienyl vanadium tetracarbonyl, etc.)

44 ...The metal is bonded directly to X of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens (e.g., vanadyl xanthate, etc.)

45 ..Manganese or rhenium containing (Mn or Re)

46 ...Carbon bonded directly to the metal (e.g., ethyl thiomanganese tricarbonyl, etc.)

47 ....The metal is bonded directly to an unsaturated 5-membered carbocyclic ring and to at least three -C(=X)- groups, wherein X is chalcogen (e.g., cyclopentadienyl manganese tricarbonyl, indenyl manganese tricarbonyl, etc.)

48 .....Chalcogen or -C(=X)-, wherein X is chalcogen, bonded directly to the unsaturated 5-membered carbocyclic ring

49 ...The metal is bonded directly to X of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens (e.g., manganese acetate, etc.)

50 ....Nitrogen containing

51 ..Titanium, zirconium, or hafnium containing (Ti, Zr, or Hf)

52 ...Carbon bonded directly to the metal

53 ....Plural unsaturated 5-membered carbocyclic rings bonded directly to the metal

54 ...Plural chalcogens bonded directly to the metal (e.g., alkyl titanates, titanic esters, etc.)

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HEAVY METAL CONTAINING (e.g., Ga, In or Tl, etc.)
..Titanium, zirconium, or hafnium containing (Ti, Zr, or Hf)
...Plural chalcogens bonded directly to the metal (e.g., alkyl titanates, titanic esters, etc.)
55 ....Containing -C(=X)X-, wherein the X's are the same or diverse chalcogens
56 ....Nitrogen or halogen containing
57 ..Chromium, molybdenum, or tungsten containing (Cr, Mo, or
58 ...Carbon bonded directly to the metal
59 ....Chalcogen double bonded directly to the carbon (e.g., molybdenum pentacarbonyls, etc.)
60 .....Carbocyclic ring bonded directly to the metal
61 ...Containing -C(=X)X-, wherein the X's are the same or diverse chalcogens
62 ....The carbons of plural -C(X=)X- groups, are bonded directly to each other, to the same acyclic carbon, (e.g., chromium oxalates, etc.)
63 ....Nitrogen or halogen containing
64 ..Arsenic, antimony, or bismuth containing (As, Sb, or Bi)
65 ...Arsenic double bonded directly to arsenic (e.g., arsenobenzenes, etc.)
66 ....Containing two benzene rings each having nitrogen, chalcogen and one of the arsenics bonded directly thereto (e.g., arsphenamines, etc.)
67 .....Sulfur double bonded directly to chalcogen (e.g., neoarsphenamines, etc.)
68 ...Tricyclo ring system having a six-membered ring, which includes heavy metal and nitrogen or chalcogen, as one of the cyclos (e.g., phenoxarsines, phenarsazines, etc.)
69 ...Sulfur double bonded directly to chalcogen
70 ...Carbon bonded directly to the metal
71 ....Chalcogen bonded directly to the metal (e.g., arsine oxides, etc.)
72 .....Plural chalcogens bonded directly to the metal
73 ......Exactly three chalcogens bonded directly to the metal (e.g., arsonic acids, arsonates, etc.)
74 ....Nitrogen and the metal bonded directly to the same benzene ring (e.g., arsanilic acids, etc.)
75 ....Having -C(=X)-, wherein X is chalcogen, attached directly or indirectly to the nitrogen by acyclic nononic bonding
76 ...Chalcogen bonded directly to the metal
77 ....Containing -C(=X)X-, wherein the X's are the same or diverse chalcogens
78 .....Carbocyclic ring bonded directly to the carbon of the -C(=X)X- group
79 .....The carbons of plural -C(=X)X- groups are bonded directly to each other, to the same carbon, or to a chain consisting of carbons, which carbons may be part of a ring (e.g., bismuth tartrates, etc.)
80 ....Carbocyclic ring bonded directly to the chalcogen
81 ..Germanium, tin, or lead containing (Ge, Sn, or Pb)
82 ...Tin bonded directly to tin or lead bonded directly to lead
83 ...Plural heavy metals bonded directly to the same chalcogen (e.g., two germaniums bonded directly to the same oxygen, etc.)
84 ....Exactly three carbons bonded directly to each of the metals (e.g., bis-tributyl tin oxides, etc.)
85 ...Sulfur double bonded directly to chalcogen
86 ....Exactly three carbons bonded directly to the metal
87 ...Carbon bonded directly to the metal
88 ....Chalcogen bonded directly to the metal
89 .....Plural chalcogens bonded directly to the metal
90 ......At least one of the chalcogens is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
91 ....Sulfur containing (e.g., organotinmercaptio carboxylic acid ester sulfides, etc.)
92 ....Acyclic carbon to carbon unsaturation containing (e.g., diorganotin maleates, etc.)
93 ......Having -C(=X)X-, are the same or diverse chalcogens, attached indirectly to the metal by nonionic bonding (e.g., dialkyl tin thioglycollic acid esters, etc.)
94 .....The chalcogen is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
95 ....The compound consists of the metal, carbon and hydrogen or the metal, carbon, hydrogen and halogen (e.g., tetraalkylleads, etc.)
96 .....Preparing by utilizing a magnesium containing material (e.g., Grignard reagent, etc.)
97 .....Preparing by interchange of radicals between heavy metal atoms (e.g., redistribution, disproportionation, etc.)
98 .....Preparing by reacting free heavy metal or heavy metal containing alloy with hydrocarbyl halide (e.g., reacting Pb-Na alloy with hydrocarbyl chloride, etc.)
99 ......Additional heavy metal containing material or aluminum containing material utilized
100 ......Phosphorus containing material or organic nitrogen containing compound utilized
101 ......Organic chalcogen containing compound or additional organic halogen containing utilized
102 .....Preparing by utilizing boron, aluminum, gallium, indium, or thallium
103 .....Purification or recovery
104 .....Halogen bonded directly to the metal
105 ...Containing -C(=X)X-, wherein the X's are the same or diverse chalcogens
106 ....Carbocyclic ring bonded directly to the carbon of the -C(=X)X- group (e.g., lead phthalates, etc.)

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.HEAVY METAL CONTAINING (e.g., Ga, In or Tl, etc.)

..Germanium, tin, or lead containing (Ge, Sn, or Pb)

...Containing -C(=X)X-, wherein the X's are the same or diverse chalcogens

107 ....Nitrogen containing

108 ...Carbocyclic ring and the metal are bonded directly to the same chalcogen (e.g., stannous catecholates, etc.)

109 ....Plural chalcogens and plural nitro groups bonded directly to the same benzene ring (e.g., lead styphnates, lead salts of di-nitroresorcinol, etc.)

110 ..Copper, silver, or gold containing (Cu, Ag, or Au)

111 ...Sulfur double bonded directly to chalcogen

112 ...Carbon bonded directly to the metal

113 ...Chalcogen bonded directly to the metal

114 ....The chalcogen is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

115 .....Carbocyclic ring bonded directly to the carbon of the -C(=X)X- group

116 .....Nitrogen containing

117 ....Containing -C(=X)-, wherein X is chalcogen

118 ..Zinc, cadmium, or mercury containing (Zn, Cd, or Hg)

119 ...Sulfur double bonded directly to chalcogen

120 ....Containing -C(=X)-, wherein X is chalcogen (e.g., zinc formaldehyde sulphoxylates, etc.)

121 ...Carbon bonded directly to the metal

122 ....Chalcogen bonded directly to the metal

123 .....The carbon is part of a carbocyclic ring (e.g., phenyl mercury nitrate, phenyl mercury phenolates, etc.)

124 ......Hydrogen or -C(=X)-, wherein X is chalcogen, bonded directly to the chalcogen (e.g., H-X-Metal-Ring-H, -C(=X)X-Metal-Ring-H, phenyl mercury hydroxides, phenyl mercury acetates, etc.)

125 ....The carbon of the -C(=X)X- group is bonded directly to the carbocyclic ring or to a different carbocyclic ring (e.g., phenyl mercury salicylates, oxymercuric benzoic acid anhydrides, etc.)

126 ....Additional chalcogen bonded directly to the carbocyclic ring (e.g., acetoxymercury nitrocresols, etc.)

127 .....Hydrogen or -C(=X)-, wherein X is chalcogen, bonded directly to the chalcogen (e.g., H-X-Metal-HCH-, -C(=X)X-Metal-HCH-, etc.)

128 ....Cyano, nitrogen or halogen bonded directly to the metal

129 ....The compound consists of the metal, carbon and hydrogen (e.g., dialkyl zinc, etc.)

130 ...Chalcogen bonded directly to the metal

131 ....The chalcogen is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

132 .....Carbocyclic ring bonded directly to the carbon of the -C(=X)X- group

133 .....The carbons of plural -C(=X)X- groups are bonded directly to each other, to the same carbon, or to a chain consisting of carbons, which carbons, which carbons may be part of a ring (e.g., zinc glutamates, etc.)

134 .....Nitrogen containing (e.g., zinc ethionates, etc.)

135 ....Carbocyclic ring bonded directly to the chalcogen (e.g., zinc phenolates, zinc thiophenates, etc.)

136 ..Ruthenium, rhodium, palladium, osmium, iridium, or platinum containing (Ru, Rh, Pd, Os, Ir, or Pt)

137 ...Nitrogen bonded directly to the metal

138 ..Iron, cobalt, or nickel containing (Fe, Co, or Ni)

139 ...Sulfur double bonded directly to chalcogen

140 ...Carbon bonded directly to the metal

141 ....Chalcogen double bonded directly to the carbon (e.g., butadiene iron tricarbonyls, etc.)

142 .....Carbocyclic ring bonded directly to the metal

143 ....Plural unsaturated five-membered carbocyclic rings bonded directly to the metal (e.g., ferrorcenes, bis indenyl iron, etc.)

144 .....Chalcogen, nitrogen or halogen containing

145 ......Chalcogen, nitrogen, halogen or -C(=X)-, wherein X is chalcogen, bonded directly to at least one of the carbocyclic rings

146 ...Chalcogen bonded directly to the metal

147 ....The chalcogen is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

148 .....Nitrogen containing (e.g., ferric chelates of ethylenediaminetetracetic acid, etc.)

149 .....Salts of acyclic monocarboxylic acids (e.g., nickel formate, cobalt acetate, etc.)

150 ....Carbocyclic ring bonded directly to the chalcogen

170 .ALUMINUM CONTAINING

171 ..With preservative or stabilizer

172 ..Boron containing

173 ..Silicon containing

174 ..Phosphorus containing

175 ..Ring aluminum containing

176 ..Nitrogen bonded directly to the aluminum

177 ..Oxygen double bonded directly to sulfur

178 ..Plural aluminums containing

179 ...Chalcogen bonded directly to aluminum

180 ...Halogen bonded directly to aluminum (e.g., sesquihalides, etc.)

181 ..Chalcogen bonded directly to aluminum

182 ...Plural chalcogens bonded directly to the same aluminum

183 ....At least one of the chalcogens is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.ALUMINUM CONTAINING
..Chalcogen bonded directly to aluminum
...Plural chalcogens bonded directly to the same aluminum
....At least one of the chalcogens is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
184 .....Ring bonded directly to the carbon of the -C(=X)X- group
185 ....Preparing by oxidation
186 ..Halogen bonded directly to the aluminum
187 ..Processes of preparing, purifying or recovering compounds having plural carbons bonded directly to the same aluminum
188 ...Aluminum containing alloy or elemental aluminum utilized
189 ....And utilizing a material which contains a metal other than aluminum
190 ...Reactants include unsaturated hydrocarbon and compound having carbon bonded directly to aluminum
400 .SILICON CONTAINING
401 ..With preservative or stabilizer
402 ..Boron containing
403 ...Boron is ring member
404 ..Phosphorus attached directly or indirectly to silicon by nonionic bonding
405 ...Chalcogen bonded directly to silicon
406 ..Ring consisting of carbon and silicon
407 ..Nitrogen is ring member
408 ...Chalcogen is member of the ring
409 ...Plural silicons in the ring
410 ..Nitrogen attached directly to silicon by nonionic bonding
411 ...Having -C(=X)-, wherein X is chalcogen, bonded directly to the nitrogen
412 ...Plural silicons bonded directly to the nitrogen
413 ..Nitrogen attached indirectly to silicon by nonionic bonding
414 ...The nitrogen is in an isocyanato or isothiocyanato group (i.e., -NCO or -NCS)
415 ...The nitrogen is in a cyano group (i.e., -CN)
416 ....Chalcogen bonded directly to plural carbons or double-bonded directly to carbon
417 ....Chalcogen bonded directly to silicon
418 ...Having -C(=X)-, wherein X is chalcogen, attached indirectly to silicon by nonionic bonding
419 ....Nitrogen is bonded directly to the -C(=X)- group
420 .....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens
421 .....Additional nitrogen bonded directly to the -C(=X)- group
422 ...Chalcogen attached directly to the nitrogen by nonionic bonding
423 ...Plural carbons bonded directly to the same chalcogen
424 ...Plural nitrogens bonded directly to the same carbon or attached by a chain consisting of carbons, which carbons may be part of a ring
425 ...Two silicons bonded directly to the same oxygen
426 ..Sulfur bonded directly to silicon
427 ..Sulfur attached indirectly to silicon by nonionic bonding
428 ...Chalcogen bonded directly to sulfur
429 ...The sulfur is part of a -SH or -SC(=X)- group, wherein X is chalcogen (H of -SH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
430 ..Plural silicons bonded directly to each other
431 ..Plural silicons bonded directly to the same carbon or attached by a chain consisting of carbons, which carbons may be part of a ring
432 ...Plural silicons bonded directly to the same or different benzene rings that form all or part of the chain
433 ....Two silicons bonded directly to the same oxygen
434 ...Two silicons bonded directly to the same oxygen
435 ...Two silicons bonded directly to the same acyclic saturated hydrocarbon
436 ..Carbonyl attached directly or indirectly to silicon by nonionic bonding
437 ...The carbonyl is part of a -COO- group
438 ....Silicon and the carbon of the -COO- group are bonded directly to the same hydrocarbon group
439 .....Two silicons bonded directly to the same oxygen
440 ....Silicon and the oxy of the -COO- group are bonded directly to the same hydrocarbon group
441 ....Carbocyclic ring having silicon as part of one substituent and the -COO- as part of another substituent
442 ....Silicon is bonded directly to the oxy of the -COO- group
443 ..Plural silicons attached by a chain consisting of oxygen and carbon, which chain may be part of a ring
444 ...Two carbons bonded directly to the same oxygen
445 ..Two carbons bonded directly to the same oxygen
446 ...Additional oxygen bonded directly to the silicon and to a group containing the oxygen and two carbons
447 ...Two carbocyclic rings bonded directly to the oxygen
448 ...One of the two carbons is part of a substituent on the oxygen, which substituent contains halogen and does not contain silicon or a benzene ring
449 ..Hydroxy bonded directly to carbon or peroxy bonded directly to two carbons or to hydrogen and carbon (H of the hydroxy or the H bonded to the peroxy may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
450 ..Two silicons bonded directly to the same oxygen
451 ...Hydrogen bonded directly to silicon
452 ...Halogen bonded directly to silicon
453 ...Three carbons bonded directly to the same silicon
454 ....Halogen attached indirectly to silicon by nonionic bonding
455 ....Three oxygens bonded directly to the same silicon

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.SILICON CONTAINING
..Two silicons bonded directly to the same oxygen
...Three carbons bonded directly to the same silicon
456 ....Three identical hydrocarbon groups bonded directly to the same silicon
457 ...Silicon and carbon bonded directly to the same oxygen
458 ....Three oxygens each bonded directly to the same silicon and to carbon
459 ...Hydroxy bonded directly to silicon (H of hydroxy may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
460 ...Ring consisting of silicon and oxygen
461 ....Benzene ring containing
462 ...Preparing by utilizing a siloxane reactant
463 ..Hydroxy or peroxy bonded directly to the silicon (H of hydroxy may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
464 ..Ring consisting of silicon, oxygen, and carbon
465 ..Carbon attached directly or indirectly to the silicon by nonionic bonding (e.g., silanes, etc.)
466 ...Processes
467 ....Plural silicons in a reactant
468 .....Bonded directly to each other
469 ....Interchange of radicals between silicon atoms (e.g., redistribution, disproportionation, transesterification, etc.)
470 ....Forming group containing silicon and carbon bonded directly to the same oxygen (e.g., esters, etc.)
471 .....A silicon halide reacted with a hydroxy or oxirane-containing compound (H of hydroxy may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
472 ....Elemental silicon, silicon-containing alloy or metal silicide reactant
473 .....Halogen, hydrogen halide, or a silicon halide utilized
474 ....Silicon to hydrogen bond formed
475 ....Dehydrohalogenation to produce carbon to carbon unsaturation
476 ....Halogenation of silicon-containing compound
477 .....Silicon to halogen bond formed
478 ....Silicon to carbon bond formed
479 .....Carbon to carbon unsaturation reduced by addition of a silicon hydride
480 .....Magnesium-containing reactant
481 .....By substitution of silicon bonded hydrogen
482 ...Silicon and carbon bonded directly to the same oxygen
483 ....Four oxygens bonded directly to the silicon
484 ....Halogen bonded directly to the silicon
485 ....Halogen bonded directly to acyclic carbon
486 ....Silicon and benzene ring bonded directly to the same oxygen
487 ...Hydrogen bonded directly to the silicon
488 ...Halogen bonded directly to acyclic carbon
489 ...Unsaturated carbocyclic ring containing

ORGANIC COMPOUNDS (Class 532, Subclass 1)

1 .Thioimidate esters (i.e., compounds having the thioimidate group, HN=CH-S-, wherein substitution may be made for hydrogen only, bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

2 ..Chalcogen bonded directly to the carbon of the thioimidate group (e.g., HN=C(OH)-S-, wherein substitution may be made for hydrogen only)

3 ..Oxygen attached directly to the nitrogen of the thioimidate group by nonionic bonding (i.e., HO-N=CH-S-, wherein substitution may be hydrogen only)

4 ..Nitrogen bonded directly to the carbon of the thioimidate group (i.e., pseudothioureas, HN=C(HNH)-S-, wherein substitution may be made for hydrogen only)

5 ...Chalcogen attached indirectly to the thioimidate group by acyclic nonionic bonding

6 .Imidate esters (i.e., compounds having the imidate group, HN=CH-O-, wherein substitution may be made for hydrogen only, bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

7 ..Oxygen attached directly to the nitrogen of the imidate group by nonionic bonding (i.e., HO-N=CH-O-, wherein substitution may be made for hydrogen only)

8 ..Nitrogen bonded directly to the carbon of the imidate group (i.e., pseudoureas, HN=C(HNH)-O-, wherein substitution may be made for hydrogen only)

9 ..Carbon bonded directly to the nitrogen of the imidate group (e.g., N-cyanoimidates, etc.)

10 .Thiocyanate esters (i.e., compounds having the thiocyano group, -SCN, bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

11 ..Plural thiocyano groups attached to each other indirectly by nonionic bonding

12 ..Thiocyano and the carbonyl carbon of a -COO- group are attached to the same carbon or to a chain consisting of carbons, which chain may include ring members (e.g., terpene thiocyanoacyl compounds, etc.)

13 ..Thiocyano bonded directly to a benzene ring

14 ..Nitrogen or carbonyl attached indirectly to the thiocyano group by acyclic nonionic bonding

15 ..Sulfur or halogen attached indirectly to the thiocyano group by acyclic nonionic bonding

16 ..Oxygen attached indirectly to the thiocyano group by acyclic nonionic bonding

17 .Isothiocyanate esters (i.e., compounds containing the isothiocyanate group, -N=C=S, bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

18 ..Processes for forming the isothiocyanate group

19 ...Thiocyano, isocyanate, or isocyanide dihalide group containing compound utilized (i.e., -SCN, -N=C=O, or -N=CXX containing compound utilized wherein X is halogen)

20 .Sulfate esters (i.e., compounds having the sulfate group, -O-S(=O)(=O)O-, bonded directly to at least one carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

21 ..With preservative or stabilizer

22 ..Phosphorus attached directly or indirectly to the sulfate group by nonionic bonding

23 ..Chalcogen bonded directly to the sulfate group

24 ..Plural sulfate groups attached indirectly to each other by nonionic bonding

25 ...Nitrogen attached indirectly to a sulfate group by acyclic nonionic bonding

26 ...Additional chalcogen attached indirectly to a sulfate group by acyclic nonionic bonding

27 ..Quaternary nitrogen containing

28 ...Having -C(=X)-, wherein X is chalcogen, attached indirectly to the quaternary nitrogen

29 ..Nitrogen attached indirectly to the sulfate group by acyclic nonionic bonding

30 ...Having -C(=X)-, wherein X is chalcogen, bonded directly to the nitrogen

31 ..Chalcogen attached indirectly to the sulfate group by acyclic nonionic bonding

32 ...The chalcogen, X, is part of a -C(=X)- group

33 ...The chalcogen is bonded directly to a ring

34 ...Plural chalcogens attached indirectly to the sulfate group by acyclic nonionic bonding

35 ..Halogen attached indirectly to the sulfate group by acyclic nonionic bonding

36 ..Acyclic carbon chain containing carbon to carbon unsaturation attached directly to the sulfate group by nonionic bonding

37 ..Benzene ring attached directly or indirectly to the sulfate group by nonionic bonding

38 ..Plural alkyl groups, or hydrogen and an alkyl group, bonded directly to the sulfate group, wherein the hydrogen may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal (e.g., ethyl hydrogen sulfate, methyl ammonium sulfate, diethyl sulfate, etc.)

39 ...Processes

40 ....Heavy metal containing material utilized (e.g., as catalyst, promoter, etc.)

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.Sulfate esters (i.e., compounds having the sulfate group, -O-S(=O)(=O)O-, bonded directly to at least one carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
..Plural alkyl groups, or hydrogen and an alkyl group, bonded directly to the sulfate group, wherein the hydrogen may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal (e.g., ethyl hydrogen sulfate, methyl ammonium sulfate, diethyl sulfate, etc.)
...Processes
41 ....Reactant contains alcoholic -OH group (wherein H of -OH may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal)
42 ....Reactant contains acyclic or alicyclic carbon to carbon double bond
43 ....Purification or recovery
44 .Sulfonate esters (i.e., compounds having the sulfonate group, -O-S(=O)(=O)-, wherein the single bonded oxygen is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
45 ..Phosphorus attached directly or indirectly to the sulfonate group by nonionic bonding
46 ..Plural sulfonate groups attached indirectly to each other by nonionic bonding
47 ...Nitrogen attached directly or indirectly to a sulfonate group by nonionic bonding
48 ..Nitrogen attached directly or indirectly to the sulfonate group by acyclic nonionic bonding
49 ...The nitrogen is bonded directly to -C(=X)-, wherein X is chalcogen
50 ....Additional nitrogen attached directly or indirectly to the -C(=X)- group by acyclic nonionic bonding
51 ..Chalcogen attached indirectly to the sulfonate group by acyclic nonionic bonding
52 ...The chalcogen, X, is in a -C(=X)- group
53 ..Halogen attached directly or indirectly to the sulfonate group by acyclic nonionic bonding
54 ...Plural halogens attached indirectly to the sulfonate group by acyclic bonding
55 ..Acyclic carbon chain containing carbon to carbon unsaturation attached directly to the sulfonate group by nonionic bonding
56 ..Benzene ring bonded directly to the sulfonate group
57 ...Alicyclic ring attached directly or indirectly to the sulfonate group by nonionic bonding
58 ...Additional benzene ring containing
59 .Sulfite esters (i.e., compounds having the sulfite group, -O-S(=O)O-, bonded directly to at least one carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
60 ..Chalcogen attached indirectly to the sulfite group by acyclic nonionic bonding
61 .Sulfinate esters (i.e., compounds having the sulfinate group, -O-S(=O)-, wherein the single bonded oxygen is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
62 .Sulfenate esters (i.e., compounds having the sulfenate group, -S-O-, wherein the oxygen is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
70 .Phosphorus esters (i.e., compounds having the phosphorus ester group, wherein trivalent or pentavalent phosphorus and carbon are bonded directly to the same divalent chalcogen, and wherein the carbon may be single bonded to any atom but may be multiple bonded only to carbon)
71 ..With preservative or stabilizer
72 ..Boron containing
73 ..The phosphorus is in a ring
74 ...Ring phosphorus is shared by two rings
75 ....Phosphorus and nitrogen in the same ring
76 ...Additional phosphorus containing ring
77 ....Phosphorus, and two chalcogens bonded directly thereto, in the same ring (e.g., cyclic phosphonates, etc.)
78 .....Acyclic divalent chalcogen single bonded directly to the ring phosphorus (e.g., cyclic phosphites, etc.)
79 ......And divalent chalogen double bonded directly to the ring phosphorus (e.g., cyclic phosphates, etc.)
80 ...And nitrogen in the ring
81 ....And chalcogen or carbon in the ring
82 ...And carbon and chalcogen in the ring
83 ....Plural chalcogens in the ring
84 .....The ring phosphorus is attached directly to halogen or an acyclic nitrogen by nonionic bonding
85 .....Acyclic divalent chalcogen single bonded directly to the ring phosphorus (e.g., cyclic phosphites, etc.)
86 ......And divalent chalcogen double bonded directly to the ring phosphorus (e.g., cyclic phosphates, etc.)
87 ..Processes
88 ...Isomerization
89 ...Forming the phosphorus ester group
90 ....Reactant having halogen attached directly to phosphorus by nonionic bonding
91 .....And reactant having chalcogen-containing hetero ring

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.Phosphorus esters (i.e., compounds having the phosphorus ester group, wherein trivalent or pentavalent phosphorus and carbon are bonded directly to the same divalent chalcogen, and wherein the carbon may be single bonded to any atom but may be multiple bonded only to carbon)

..Processes

...Forming the phosphorus ester group

....Reactant having halogen attached directly to phosphorus by nonionic bonding

92 .....And reactant having alcoholic or phenolic -XH group, wherein X is chalcogen (and wherein H of -XH may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal)

93 ......And nitrogen bonded directly to the phosphorus in the phosphorus containing reactant

94 ......Four or five halogens attached directly to the phosphorus in the phosphorus containing reactant by nonionic bonding

95 ......The phosphorus in the reactant is trivalent

96 ....Nitrogen containing compound utilized (e.g., pyridine, carbamates, urea, etc., utilized as catalysts, proton acceptors, etc.)

97 ....Trivalent phosphorus converted into pentavalent phosphorus

98 ......And carbon bonded directly to the phosphorus in the phosphorus containing reactant (e.g., methyl phosphonodichloride, etc.)

99 ......And divalent chalcogen single bonded directly to the phosphorus in the phosphorus containing reactant (e.g., diethyl phosphorochloridate, etc.)

100 ....Nitrogen containing compound utilized (e.g., pyridine, carbamates, urea, etc., utilized as catalysts, proton acceptors, etc.)

101 ......Nitrogen containing compound utilized (e.g., pyridine, carbamates, urea, etc., utilized as catalysts, proton acceptors, etc.)

102 ......Metal containing material utilized (e.g., as catalysts, etc.)

103 .....And reactant having -C(=X)-, wherein X is chalcogen

104 ....Reactant has -XH, wherein X is chalcogen, bonded directly to phosphorus (wherein H of -XH may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal)

105 .....And reactant having three-membered hetero ring

106 .....And reactant having halogen bonded directly to carbon, which carbon may be single bonded to any element but may be multiple bonded only to carbon

107 ......Having -C(=X)-, wherein X is chalcogen, or cyano attached indirectly to the halogen by acyclic nonionic bonding

108 .....And -C(=X)- containing reactant, wherein X is chalcogen

109 .....And unsaturated hydrocarbon reactant (e.g., pinene, allylene, etc.)

110 .....And reactant having alcoholic or phenolic -XH group, wherein X is chalcogen (and wherein H of -XH may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal)

111 .....Additional diverse phosphorus containing reactant

112 ....Reactant consists of phosphorus and sulfur (e.g., phosphorus pentasulfide, etc.)

113 ....Reactant consists of phosphorus and oxygen (e.g., phosphorus pentoxide, etc.)

114 .....And reactant having alcoholic or phenolic -XH group, wherein X is chalcogen (and wherein H of -XH may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal)

115 ....Trivalent phosphorus converted into pentavalent phosphorus

116 .....Reactant having halogen and -C(=X)-, wherein X is chalcogen, bonded directly to the same carbon (e.g., alpha halo carbonyl compounds, etc.)

117 ....Reactant is a phosphorus ester (e.g., transesterification, etc.)

118 .....And reactant having alcoholic or phenolic -XH group, wherein X is chalcogen (and wherein X of -XH may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal)

119 ......The -XH is bonded directly to alkyl

120 .....The phosphorus ester reactant has hydrogen or metal bonded directly to phosphorus

121 ....Elemental phosphorus reactant

122 ...Trivalent phosphorus converted into pentavalent phosphorus

123 ....Molecular oxygen or elemental sulfur reactant (e.g., air, etc.)

124 ....Reactant having halogen bonded directly to carbon (e.g., Arbuzov rearrangement, etc.)

125 .....The reactant contains carbon to carbon unsaturation

126 ....Reactant having -C(=X)-, wherein X is chalcogen

127 ...Forming a linkage wherein divalent chalcogen is bonded directly to two phosphori (e.g., forming the pyrophosphate linkage, etc.)

128 ....Reactant having halogen attached directly to phosphorus by nonionic bonding

129 ...Forming or utilizing an -O-O- or -S-S- group

130 ...Forming P-X-C(=X)- group, wherein the X's may be the same or different chalcogens and the phosphorus may be trivalent or pentavalent

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.Phosphorus esters (i.e., compounds having the phosphorus ester group, wherein trivalent or pentavalent phosphorus and carbon are bonded directly to the same divalent chalcogen, and wherein the carbon may be single bonded to any atom but may be multiple bonded only to carbon)

..Processes

131 ...Converting a phosphorus ester group to a P-XH group, wherein H of -XH may be replaced by substituted or unsubstituted ammonium or by a Group IA or IIA light metal, and wherein X is chalogen and P may be trivalent or pentavalent

132 ...Forming phosphorus to chalcogen bond

133 ...Replacing H of P-XH with substituted or unsubstituted ammonium, or with a Group IA or IIA light metal, and wherein X is chalcogen and P is trivalent or pentavalent

134 ...Substituting carbon for halogen, hydrogen, or metal bonded directly to the phosphorus

135 ....Aldehyde or ketone reactant

136 ....Reactant having halogen bonded directly to carbon (e.g., ethyl bromide, benzoyl chloride, etc.)

137 ....Reactant heving acyclic or alicyclic carbon to carbon unsaturation

138 ...Forming phosphorus to nitrogen bond

139 ...Forming a -C(=X)NHH or -N=C=O group, wherein X is chalcogen and substitution may be made for hydrogen only

140 ...Forming nonionic phosphorus to halogen bond

141 ...Halogenation of carbon

142 ...Forming carbon to carbon multiple bond

143 ...Utilizing oxirane ring containing compound

144 ...Reactant having halogen or nitrogen attached directly to phosphorus by nonionic bonding

145 ...Reactant having nitrogen attached indirectly to phosphorus by nonionic bonding

146 ...Purification or recovery

147 ....Of compounds having plural phosphori

148 ....Of compounds having halogen attached directly to phosphorus by nonionic bonding

149 ....Oxidation employed to purify or recover

150 ....Metal containing material utilized or separated

151 ..Oxygen single bonded to oxygen, or sulfur single bonded to sulfur (e.g., peroxy compounds, etc.)

152 ..Plural phosphori bonded to the same chalcogen (e.g., pyrophosphate esters, etc.)

153 ..Phosphorus and a -C(=X)- group, wherein X is chalcogen, bonded directly to the same chalcogen

154 ..Hydrazine, or substituted hydrazine, group attached directly or indirectly to the phosphorus by nonionic bonding (i.e., HHN-NH- group, wherein substitution may be made for hydrogen only)

155 ..Plural phosphori attached directly or indirectly to each other by nonionic bonding

156 ...Plural phosphorus ester groups

157 ....Nitrogen bonded directly to phosphorus

158 ....Nitrogen attached indirectly to phosphorus by acyclic nonionic bonding

159 .....Having -C(=X)-, wherein X is chalcogen, bonded directly to the nitrogen

160 ....Having -C(=X)-, wherein X is chalcogen, attached indirectly to phosphorus by acyclic nonionic bonding

161 ....Divalent chalcogen double bonded directly to pentavalent phosphorus

162 .....Plural phosphori attached indirectly to each other by a benzene ring or by a chain which includes a benzene ring

163 .....Plural phosphori attached indirectly to each other by an acyclic chalcogen containing chain

164 ......Plural chalcogens in the acyclic chain

165 ....Divalent chalcogen, bonded directly to two carbons or to carbon and hydrogen, attached indirectly to phosphorus by acyclic nonionic bonding (wherein the hydrogen may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal)

166 ..Nitrogen attached indirectly to the phosphorus by acyclic nonionic bonding

167 ...The nitrogen is part of a cyano or isocyano group

168 ....Chalcogen attached indirectly to the phosphorus by acyclic nonionic bonding

169 ...Chalcogen attached indirectly to the phosphorus by acyclic nonionic bonding

170 ....The chalcogen, X, is in a -C(=X)- group, which group is bonded directly to the nitrogen

171 .....Nitrogen bonded directly to the phosphorus

172 .....The -C(=X)- is part of a -C(=X)X- group, wherein the X's may be the same or diverse chalcogens

173 .....Chalcogen, or additional -C(=X), bonded directly to the nitrogen

174 .....Two carbons bonded directly to the same chalcogen (e.g., sulfones, carboxylic acid esters, ethers, etc.)

175 ....Chalcogen bonded directly to the nitrogen by nonionic bonding

176 ...Containing carbon double bonded to nitrogen

177 ..Chalcogen attached indirectly to the phosphorus by acyclic nonionic bonding

178 ...The chalcogen, X, is in a -C(=X)- group

179 ....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

180 .....Plural -C(=X)X- groups attached indirectly to the phosphorus by acyclic nonionic bonding

181 .....The carbon of the -C(=X)X- group is bonded directly to the phosphorus or to nitrogen which is bonded directly to the phosphorus

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.Phosphorus esters (i.e., compounds having the phosphorus ester group, wherein trivalent or pentavalent phosphorus and carbon are bonded directly to the same divalent chalcogen, and wherein the carbon may be single bonded to any atom but may be multiple bonded only to carbon)

..Chalcogen attached indirectly to the phosphorus by acyclic nonionic bonding

...The chalcogen, X, is in a -C(=X)- group

....The -C(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens

182 .....Acyclic carbon chain containing carbon to carbon unsaturation attached directly or indirectly to the phosphorus by acyclic nonionic bonding

183 ...Plural carbons bonded directly to the same chalcogen which is attached indirectly to the phosphorus by acyclic nonionic bonding (e.g., ethers, etc.)

184 ....The chalcogen is part of a -S(=O)- or a -S(=O)(=O)- group (e.g., sulfones, etc.)

185 ....Nitrogen bonded directly to the phosphorus

186 ....Plural ether oxygens or thioether sulfurs attached indirectly to the phosphorus by acyclic nonionic bonding

187 ....The chalcogen is bonded directly to a benzene ring and to acyclic carbon

188 ....Halogen attached directly or indirectly to the phosphorus by acyclic nonionic bonding

189 ....Carbon bonded directly to the phosphorus

190 ..Nitrogen attached indirectly to the phosphorus by nonionic bonding

191 ...Nitrogen or halogen attached directly to the phosphorus by nonionic bonding

192 ...Cyano or isocyano attached indirectly to the phosphorus by nonionic bonding

193 ...Nitro bonded directly to a benzene ring

194 ..Chalcogen attached indirectly to the phosphorus by nonionic bonding

195 ...Nitrogen or halogen attached directly to the phosphorus by nonionic bonding

196 ...The chalcogen is part of a -S(=O)- or a -S(=O)(=O)- group (e.g., sulfoxides, sulfonic acids, etc.)

197 ...Ether oxygen or thioether sulfur bonded directly to a benzene ring

198 ...The chalcogen, X, is in a -C(=X)- group

199 ..Nitrogen bonded directly to the phosphorus

200 ...Benzene ring and the phosphorus bonded directly to the same chalcogen (i.e., the carbon of the phosphorus ester group is part of a benzene ring)

201 ...Acyclic carbon chain containing carbon to carbon unsaturation attached indirectly to the phosphorus by acyclic nonionic bonding

202 ..Halogen attached directly to the phosphorus by nonionic bonding

203 ..Halogen attached indirectly to the phosphorus by acyclic nonionic bonding

204 ...Plural fluorines bonded to an acyclic carbon or to an acyclic carbon chain

205 ...Carbon to carbon unsaturation containing

206 ....The unsaturation is in a benzene ring

207 ..Divalent chalcogen double bonded directly to the phosphorus

208 ...And three divalent chalcogens single bonded directly to the phosphorus (e.g., trialkyl phosphates, etc.)

209 ....Alicyclic ring bonded directly to one of the chalcogens

210 ....Benzene ring bonded directly to one of the chalcogens

211 .....Benzene ring bonded directly to each of the three chalcogens

212 .....Three or more halogens bonded directly to the benzene ring

213 ....Multiple bond between two acyclic carbons

214 ...And two divalent chalcogens single bonded directly to the phosphorus

215 ....Benzene ring bonded directly to one of the chalcogens

216 ....Benzene ring bonded directly to the phosphorus

217 ....Multiple bond between two acyclic carbons

218 ..Three divalent chalcogens single bonded directly to trivalent phosphorus (e.g., trialkyl phosphites, etc.)

230 .Esters having the thiocarboxylate group, -C(=X)X-, wherein the X's are the same or diverse chalcogens, with at least one X being sulfur, and wherein the single bonded X is bonded directly to an additional carbon, which carbon may be single bonded to any atom, but may be multiple bonded only to carbon

231 ..Phosphorus attached directly or indirectly to the thiocarboxylate group by nonionic bonding

232 ..Nitrogen bonded directly to the carbon of the -C(=X)X- group (e.g., thiocarbamates, etc.)

233 ...Chalcogen, nitrogen, or additional -C(=X)- attached directly to the nitrogen by nonionic bonding (X is chalcogen)

234 ...The -C(=X)X- is -C(=S)O-

235 ...The -C(=X)X- is -C(=S)S-

236 ....Nitrogen or additional chalcogen attached indirectly to the nitrogen by acyclic nonionic bonding

237 .....Plural HHN-C(=S)S- groups, wherein substitution may be made for hydrogen only

238 .....Cyano or -C(=X)-, wherein X is chalcogen, attached indirectly to the nitrogen by acyclic nonionic bonding

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.Esters having the thiocarboxylate group, -C(=X)X-, wherein the X's are the same or diverse chalcogens, with at least one X being sulfur, and wherein the single bonded X is bonded directly to an additional carbon, which carbon may be single bonded to any atom, but may be multiple bonded only to carbon
..Nitrogen bonded directly to the carbon of the -C(=X)X- group (e.g., thiocarbamates, etc.)
239 ...Nitrogen or additional chalcogen attached indirectly to the nitrogen by acyclic nonionic bonding
240 ....The chalcogen, X, is in a -C(=X)- group
241 ...Benzene ring bonded directly to the nitrogen or to the sulfur of a -C(=O)S- group
242 ...Benzene ring attached indirectly to the nitrogen by nonionic bonding
243 ..Esters having the -X-C(=X)X- group, wherein the X's are the same or diverse chalcogens and at least one X is sulfur, and wherein one of the single bonded X's is bonded directly to carbon, which carbon may be single bonded to any atom, but may be multiple bonded only to carbon (e.g., thiocarbonates, etc.)
244 ...Two -C(=X)- groups, wherein the X's are the same or diverse chalcogens, bonded directly to the same chalcogen or to a chain consisting of chalcogens (e.g., xanthic disulfides, etc.)
245 ...The -X-C(=X)X- is -S-C(=S)O- (e.g., xanthates, etc.)
246 ....Nitrogen or chalcogen attached indirectly to the -S-C(=S)O- group by acyclic nonionic bonding
247 ....Alkyl and hydrogen bonded directly to the -S-C(=S)O- group, wherein the hydrogen may be replaced by substituted or unsubstituted ammonium or by a Group IA or IIA light metal (e.g., sodium ethyl xanthate, etc.)
248 ...The -X-C(=X)X- is -S-C(=O)O- (e.g., thiolcarbonates, etc.)
249 ..Halothiocarbonate esters (i.e., compounds wherein halogen is bonded directly to the carbon of the -C(=X)X- group)
250 ..The -C(=X)X- is -C(=O)S-
251 ...Plural -C(=O)S- groups containing
252 ...Chalcogen attached indirectly to the -C(=O)S- group by acyclic nonionic bonding
253 ....The chalcogen, X, is in a -C(=X)- group
254 .....Nitrogen bonded directly to the -C(=X)- group
255 .....The -C(=X)- group is part of a -COO- group
256 ...Nitrogen attached indirectly to the -C(=O)S- group by acyclic nonionic bonding
257 ...Benzene ring attached directly or indirectly to the -C(=O)S- group by nonionic bonding
260 .Carbonate esters (i.e, compounds having the -O-C(=O)O- group bonded directly to at least one carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
261 ..With preservative or stabilizer
262 ..Nitrogen attached directly to the -O-C(=O)O- group by nonionic bonding (e.g., oxime carbonates, urea carbonates, etc.)
263 ..Oxygen bonded directly to the -O-C(=O)O- group by nonionic bonding (e.g., monoperoxycarbonates, etc.)
264 ...Carbonyl bonded directly to the oxygen (i.e., compounds having the -O-C(=O)-O-O-C(=O)- group; e.g., peroxydicarbonates, acyl peroxycarbonates, etc.)
265 ..Plural -O-C(=O)O- groups attached indirectly to each other by nonionic bonding
266 ...Additional chalcogen attached indirectly to one of the -O-C(=O)O- groups by acyclic nonionic bonding
267 ....The additional chalcogen, X, is in a -C(=X)- group
268 ...Benzene ring attached directly or indirectly to one of the -O-C(=O)O- groups by nonionic bonding
269 ....Nitrogen attached directly or indirectly to the benzene ring by nonionic bonding
270 ..Benzene ring bonded directly to the -O-C(=O)O- group
271 ...Additional chalcogen bonded directly to the benzene ring
272 ...Nitrogen bonded directly to the benzene ring
273 ...Nitrogen or additional chalcogen attached indirectly to the benzene ring by acyclic nonionic bonding
274 ...Two benzene rings bonded directly to the -O-C(=O)O- group (i.e., diaryl carbonates)
275 ..Benzene ring attached indirectly to the -O-C(=O)O- group by nonionic bonding
276 ..Nitrogen or chalcogen attached indirectly to the -O-C(=O)O- group by acyclic nonionic bonding
277 ..Two identical or diverse alkyl groups bonded directly to the -O-C(=O)O- group (e.g., dimethyl carbonate, methyl ethyl carbonate, etc.)
280 .Halocarbonate esters (i.e., compounds having the halo-C(=O)O- group bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
281 ..Plural halo-C(=O)O- groups attached indirectly to each other by nonionic bonding
282 ..Benzene ring attached directly or indirectly to the halo-C(=O)O- group by nonionic bonding
283 ..Halogen attached indirectly to the halo-C(=O)O- group by nonionic bonding
285 .Thioborate esters (i.e., compounds having boron and carbon each single bonded to the same divalent sulfur, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

ORGANIC COMPOUNDS (Class 532, Subclass 1)

286 .Borate esters (i.e., compounds having boron and carbon each single bonded to the same oxygen, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

287 ..Boron and oxygen in the same ring

288 ...Carbon in the ring

289 ....Nitrogen in the ring

290 ....Plural rings each having boron, carbon and oxygen as ring members

291 ....Three oxygens attached directly to the same boron by nonionic bonding

292 ..Plural acyclic borons attached directly or indirectly to each other by nonionic bonding

293 ..Three oxygens attached directly to the same boron by nonionic bonding

294 ...Benzene ring attached indirectly to boron by nonionic bonding

295 ...Nitrogen or chalcogen attached indirectly to boron by acyclic nonionic bonding

296 ...Trialkyl borates (i.e., compounds having the structure (RO)B(OR)(OR), wherein the R's represent the same or diverse alkyl groups

297 ....Processes utilizing boric oxide or an inorganic boric acid

298 ..Carbon bonded directly to the boron

299 .Nitrile oxides or nitrile imines (i.e., compounds having cyano bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon, and wherein the nitrogen of the cyano group is bonded directly to oxygen or to nitrogen)

300 .Cyano single bonded and nitrogen or phosphorus double bonded to the same carbon atom (e.g., alpha-imino nitriles, etc.)

301 ..Oxygen bonded directly to the double bonded nitrogen (e.g., alpha-oximino nitriles, etc.)

302 .Isonitriles (i.e., compounds having an isonitrile group, usually represented as $-N\equiv C$, bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

303 .Nitriles (i.e., compounds having cyano bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

304 ..With preservative or stabilizer

305 ...Acyclic or alicyclic carbon to carbon unsaturation in the preserved or stabilized nitrile

306 ....Organic compound, which contains nitrogen, utilized as preservative or stabilizer

307 ....Sulfur or phosphorus containing preservative or stabilizer

308 ..Processes for forming the cyano group

309 ...Hetero ring containing reactant

310 ....Nitrogen, or oxygen, and carbonyl carbon are adjacent ring members of the hetero ring (e.g., lactams, lactones, etc.)

311 ...Reactant is a carboxylic acid, or an amide, anhydride, ester, halide, or salt thereof

312 ....Utilizing a formamide, heavy metal salt, aluminum halide, organosilicon compound, organophosphorus compound, or a compound containing nitrogen and sulfur

313 ....Liquid phase reaction

314 ...Utilizing nitryl halide, nitrosyl halide, HCH=NO- or HHNO- (wherein substitution may be made for hydrogen only; e.g., oximes, oxime esters, hydroxylamine salts, olefin-nitrosyl chloride adducts, etc.)

315 ...Reactant is an aldehyde or ketone, or a compound having carbon double bonded to nitrogen (e.g., ammoxidation of acrolein, etc.)

316 ...Reactant contains -OH bonded directly to acyclic or alicyclic carbon (wherein H of -OH may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal)

317 ...Utilizing a nitrogen oxide or an azide

318 ...Ammonia utilized

319 ....And molecular oxygen or a molecular oxygen containing gas

320 .....Acting on a compound containing acyclic or alicyclic carbon to carbon unsaturation

321 ......Niobium, tantalum, silver, sulfur, ruthenium, rhodium, palladium, osmium, iridium, or platinum containing material utilized

322 ......Tellurium containing material utilized

323 ......Molybdenum containing material utilized

324 ....Bismuth containing material utilized

325 ......Antimony containing material utilized

326 ....Uranium or arsenic containing material utilized

327 .....Acting on a benzene ring-containing compound

328 ......Alkali metal containing material utilized

329 ....Product contains cyano bonded directly to a benzene ring

330 ....Reactant contains acyclic or alicyclic carbon to carbon double bond

331 ..Homopolymerization of HCN (e.g., tetramerization of HCN to diaminomaleonitrile)

332 ..Processes of attaching cyano to carbon by reaction of an inorganic cyanide with an organic compound (e.g., using HCN, cyanogen, metal cyanide, ammonium cyanide, cyanogen chloride, etc.)

333 ...The organic compound contains a carbon to carbon triple bond (e.g., acrylonitrile from acetylene and HCN, etc.)

334 ....Liquid phase reaction (e.g., using aqueous CuCl catalyst, etc.)

335 ...The organic compound contains an acyclic or alicyclic carbon to carbon double bond

336 ....Cyanogen or cyanogen halide utilized

337 ....The organic compound contains halogen bonded directly to carbon

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.Nitriles (i.e., compounds having cyano bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

..Processes of attaching cyano to carbon by reaction of an inorganic cyanide with an organic compound (e.g., using HCN, cyanogen, metal cyanide, ammonium cyanide, cyanogen chloride, etc.)

...The organic compound contains an acyclic or alicyclic carbon to carbon double bond

338 ....Organic material which contains phosphorus, arsenic, or antimony, in addition to nickel, utilized (e.g., zero-valent nickel complexes, etc.)

339 ....Cobalt, copper, silver, or gold containing material utilized

340 ....Ruthenium, rhodium, palladium, osmium, iridium, or platinum containing material utilized

341 ....The organic compound contains a carbonyl (e.g., ketene, etc.)

342 ...Replacing halogen with cyano

343 ....On benzene ring

344 ....Organic compound of nitrogen, phosphorus, arsenic, antimony, or bismuth utilized other than as reactant (e.g., utilizing phase transfer agents, etc.)

345 ...Aldehyde, and carboxylic acid halide or carboxylic acid anhydride, reacted with the inorganic cyanide

346 ...Aldehyde or ketone, and ammonia or substituted ammonia, reacted with the inorganic cyanide

347 ...Hetero ring containing compound reacted with the inorganic cyanide (e.g., reaction of epoxy compounds, etc.)

348 ...Replacing hydrogen with cyano (e.g., malononitrile from acetonitrile, etc.)

349 ....On benzene ring (e.g., benzonitrile from benzene, etc.)

350 ...Replacing oxygen or nitrogen, single bonded to carbon, by cyano

351 ...Attaching cyano to the carbonyl carbon of an aldehyde or ketone (e.g., cyanohydrin formation, etc.)

352 ...Carboxylic acid, carboxylic acid halide, carboxylic acid anhydride, or compound containing carbon double bonded to nitrogen reacted with the inorganic cyanide

353 ..Processes utilizing carbon monoxide as a reactant

354 ..Racemization, resolution, or inversion of configuration processes for optically active compounds

355 ..Isomerization processes (e.g., double bond shift, cis-trans isomerism, etc.)

356 ...Isomerization of reactants containing plural cyano groups

357 ..Processes of forming carbon to carbon bond between carbons of two organic reactants

358 ...Reactions utilizing epoxy compounds, or free radical reactions (e.g., utilizing peroxy or azo promotors, etc.)

359 ...The carbons that form the bond each lose halogen in the process

360 ...The carbon to carbon bond forms between plural molecules of identical nitrile reactants (e.g., dimerization, etc.)

361 ....The reactant is an acyclic nitrile containing carbon to carbon unsaturation (e.g., dimerization or oligomerization of acrylonitrile, etc.)

362 .....Amalgam utilized

363 .....Organic phosphorus compound utilized

364 .....Heavy metal or aluminum containing material utilized

365 ...Formation of a carbocyclic ring

366 ....Three- or four-membered monocyclic ring formed

367 ...Cyanoalkylation of an acyclic or alicyclic carbon, which is adjacent to a benzene ring or an atom double or triple bonded to a non-carbon atom, by means of acrylonitrile or hydrocarbyl-substituted acrylonitrile (e.g., cyanoethylation, etc.)

368 ....The cyanoalkylated carbon is adjacent to a carbonyl carbon

369 ...Alkylation of an acyclic or alicyclic carbon, which is adjacent to a benzene ring or an atom double or triple bonded to a non-carbon atom, by means of an alkyl halide, alkyl sulfate, substituted alkyl halide or substituted alkyl sulfate

370 ...Reactant contains two cyano groups bonded directly to the same unsaturated carbon

371 ...Aldehyde or ketone reactant

372 ....Formaldehyde reactant

373 ....Carbonyl carbon of the aldehyde or ketone reacts to form a carbon to carbon double bond with carbon of a second reactant

374 .....The carbon of the second reactant is bonded directly to two atoms which are each double or triple bonded to noncarbon atoms

375 ...Carbon to carbon double bond is formed between a nitrile reactant having no acyclic or alicyclic carbon to carbon double bond and a second reactant

376 ...Hydrogen bonded to a benzene ring is replaced by carbon

377 ...A nitrile reactant and a second reactant each contain an acyclic or alicyclic carbon to carbon double bond

378 ...A nitrile reactant contains no acyclic or alicyclic carbon to carbon unsaturation

379 ..Processes of forming an acyclic or alicyclic carbon to carbon double bond from an existing acyclic or alicyclic carbon to carbon single bond (e.g., by dehydroacylation, etc.)

380 ...By dehydrohalogenation

381 ...By dehalogenation, dehydrocyanation, ring cleavage, or depolymerization

382 ...By dehydration (i.e., removal of water)

383 ...By dehydrogenation

384 ..Boron or spiro containing

385 ..Phosphorus attached indirectly to the cyano group by nonionic bonding

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.Nitriles (i.e., compounds having cyano bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
..Phosphorus attached indirectly to the cyano group by nonionic bonding
386 ...Chalcogen, nitrogen, or halogen bonded directly to the phosphorus by nonionic bonding
387 ..Oxygen single bonded to oxygen, or sulfur single bonded to sulfur (e.g., peroxy compounds, etc.)
388 ..Benzene ring attached indirectly to the cyano group by acyclic nonionic bonding
389 ...Non-carbon atom in acyclic chain between the benzene ring and the cyano group
390 ....Nitrogen in the acyclic chain
391 .....Carbon, also in the chain, double bonded to the nitrogen
392 .....Having -C(=X)-, also in the chain, bonded directly to the nitrogen (wherein X is chalcogen)
393 ......Carbon to carbon unsaturation, chalcogen, or additional nitrogen in the chain
394 .....The chain nitrogen bonded directly to the benzene ring
395 ......Cyano or carbonyl bonded directly to an acyclic carbon which is double bonded to another carbon
396 ....Sulfur in the chain
397 .....Oxygen double bonded to the sulfur
398 ....Having -COO- in the chain
399 .....The carbon of the -COO- group is bonded directly to the benzene ring
400 .....Cyano or carbonyl bonded directly to an acyclic carbon which is double bonded to another carbon
401 ...Benzene ring and cyano connected by a chain consisting of two carbons multiple bonded to each other
402 ....Additional benzene ring bonded directly to the chain
403 ....Nitrogen, except as nitro or nitroso, bonded directly to the benzene ring
404 ...Having -C(=X)-, wherein X is chalcogen, attached indirectly to the cyano group by nonionic bonding
405 ....Two carbons bonded directly to the carbon of the -C(=X)- group (e.g., ketones, etc.)
406 ....Oxygen bonded directly to carbonyl (e.g., carboxylic acid esters, etc.)
407 .....Three-membered carbocyclic ring containing
408 ...Nitrogen, except as nitro or nitroso, attached indirectly to the cyano group by nonionic bonding
409 ....Plural cyano groups containing
410 ...Oxygen attached indirectly to the cyano group by nonionic bonding (e.g., nitro group, etc.)
411 ..Benzene ring bonded directly to the cyano group
412 ...Sulfur and hydroxy bonded directly to the same benzene ring, or containing a monocyclic unsaturated alicyclic ring or thiocarbonyl
413 ...Sulfur, double bonded to oxygen, attached indirectly to the cyano group by nonionic bonding
414 ...Carbonyl attached indirectly to the cyano group by nonionic bonding
415 ....Benzene ring bonded directly to the carbonyl
416 .....Oxygen bonded directly to the carbonyl (e.g., benzoic acid esters, etc.)
417 ....The carbonyl is bonded directly to two non-carbon atoms, or to a non-carbon atom and an additional carbonyl (e.g., carbamates, oxamides, etc.)
418 ...Nitrogen, except as nitro or nitroso, attached indirectly to the cyano group by nonionic bonding
419 ....Plural cyano groups containing
420 .....Plural benzene rings bonded directly to cyano groups
421 .....Plural cyano groups bonded directly to a benzene ring, which is further unsubstituted or hydrocarbyl substituted only
422 ....The nitrogen is attached indirectly to a benzene ring by acyclic nonionic bonding
423 ...Oxygen attached indirectly to the cyano group by nonionic bonding
424 ....Two benzene rings bonded directly to the same oxygen, or nitrogen bonded directly to oxygen (e.g., nitro compounds, phenoxyphenyl compounds, etc.)
425 ...Halogen attached indirectly to the cyano group by nonionic bonding
426 ..Benzene ring attached indirectly to the cyano group by nonionic bonding (i.e., alicyclic ring between the benzene ring and the cyano group)
427 ...Polycyclo ring system having at least three cyclos, at least one of which is a benzene ring
428 ..Polycyclo alicyclic ring system containing
429 ...The ring system contains at least three cyclos
430 ..Six-membered alicyclic ring containing
431 ...Cyano bonded directly to the ring
432 ..Five-membered alicyclic ring containing
433 ..Four-membered alicyclic ring containing
434 ..Three-membered alicyclic ring containing
435 ..Acyclic (e.g., purification of saturated nitriles, etc.)
436 ...Sulfur attached indirectly to the cyano group by nonionic bonding
437 ....The sulfur is double bonded to oxygen
438 ....Two carbons bonded directly to the same divalent sulfur
439 .....Additional cyano group
440 ...Carbonyl attached indirectly to the cyano group by nonionic bonding (e.g., aldehydes, ketones, etc.)
441 ....Oxygen bonded directly to the carbonyl group (e.g., carboxylic acid esters, etc.)
442 .....Additional carbonyl attached indirectly to the cyano group by nonionic bonding
443 .....The cyano group is bonded directly to the carbon adjacent to the carbonyl carbon (e.g., alpha cyano acrylates, etc.)

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.Nitriles (i.e., compounds having cyano bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

..Acyclic (e.g., purification of saturated nitriles, etc.)

...Carbonyl attached indirectly to the cyano group by nonionic bonding (e.g., aldehydes, ketones, etc.)

....Oxygen bonded directly to the carbonyl group (e.g., carboxylic acid esters, etc.)

444 .....The oxygen is between the carbonyl and the cyano group (e.g., cyano is in the alcohol portion of a carboxylic acid ester, etc.)

445 ....Nitrogen bonded directly to the carbonyl (e.g., ureas, etc.)

446 ...Nitrogen, double bonded to carbon, attached indirectly to the cyano group by nonionic bonding (e.g., imines, oximes, etc.)

447 ...Plural carbons bonded directly to the same oxygen

448 ....Plurals oxygens bonded directly to the same carbon (e.g., acetals, etc.)

449 ....Cyano is attached directly or indirectly by nonionic bonding to carbon that is multiple bonded to another carbon

450 ....Processes for formation of an ether group (e.g., cyanoethylation of alcohols, etc.)

451 ...Having -OH bonded directly to carbon (wherein H of -OH may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal)

452 ...Nitrogen attached indirectly to the cyano group by nonionic bonding

453 ....Plural cyano groups bonded directly to the same carbon (e.g., malononitrile, tetracyanoethylene, etc.)

454 ....Plural cyano groups bonded directly to the same chain (e.g., adiponitrile, etc.)

455 .....The chain contains nitrogen (e.g., iminodiacetonitrile, nitrilotriacetonitrile, etc.)

456 .....Purification or recovery of saturated hydrocarbon dinitriles (e.g., from mixtures with cyanocyclopentanonimine, 2-cyanocyclopenten-1-ylamine, etc.)

457 .....A carbon in the chain is multiple bonded to carbon (e.g., 1,4-dicyanobutene, etc.)

458 ....The nitrogen is attached directly to halogen by nonionic bonding, or is part of a nitro, nitroso, nitrate, or N-oxide group

459 ....Hydrogenation of dinitriles, or displacement of halo, hydroxy, or alkoxy by ammonia or substituted ammonia

460 ...Halogen attached indirectly to the cyano group by nonionic bonding

461 ....Plural halogens attached indirectly to the cyano group by nonionic bonding

462 ...Carbon to carbon unsaturation containing

463 ....Purification or recovery

464 .....Utilizing ion exchange resin, or a silicon, aluminum, or heavy metal containing material

465 .....Of nitriles prepared by hydrocyanation (e.g., by reaction of acetylene with hydrogen cyanide, etc.)

466 .....Of nitriles prepared by reaction of an organic compound, ammonia, and molecular oxygen or a molecular oxygen-containing gas (i.e., of nitriles prepared by ammoxidation)

467 ...Processes for preparation of saturated nitriles

480 .Nitrate esters or chalcogen analogues thereof (i.e., compounds having (X=)N(=X)-X- bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon; the X's may be the same or diverse chalcogens)

481 ..With preservative or stabilizer

482 ..Benzene ring containing

483 ..Additional nitrogen or chalcogen containing

484 ...Plural (X=)N(=X)-X- groups containing

485 ....Four or more (X=)N(=X)-X- groups containing

486 ....Glyceryl trinitrate per se (i.e., trinitroglycerin)

487 ....Containing nitrogen bonded directly to carbon

488 .Nitrite esters or chalcogen analogues thereof (i.e., compounds having (X=)N-X- bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon; the X's may be the same or diverse chalcogens)

CLASS 560 PART OF THE CLASS 532-570 SERIES -- ORGANIC COMPOUNDS

IN THIS SERIES OF CLASSES, CLASS 560 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (Class 532, Subclass 1)
1 .Carboxylic acid esters
2 ..With preservative
3 ...Aromatic polycarboxylic acid esters
4 ...Acyclic unsaturated monocarboxylic acid esters
5 ..Hydrophenanthrene in acid moiety
6 ...Polycyclo ring system having the hydrophenanthrene and at least one additional ring as cyclos
7 ...1,4a-Dimethylhydrophenanthrene -1- carboxylic acid
8 ..Aromatic acid moiety
9 ...Sulfur in acid moiety
10 ....Ortho fused rings in acid moiety
11 ....Sulfoxy in acid moiety
12 .....Nitrogen in acid moiety
13 ......Plural nitrogens in acid moiety
14 .....Sulfonic acids, salts or acid halides
15 ....Sulfur, not bonded directly to a ring, in same side chain as ester function
16 .....Nitrogen in acid moiety
17 ....Sulfur, bonded directly to a ring, in same side chain as ester function
18 ....Ester function attached directly to a ring
19 ...Nitrogen in acid moiety other than as nitroso or isocyanate (e.g., amino acid esters, etc.)
20 ....Nitro bonded to carbon in acid moiety
21 .....Plural rings in acid moiety
22 .....Additional nitrogen in acid moiety
23 .....Oxy, aldehyde or ketone group in acid moiety
24 ....Carbamic acid
25 .....Polycarbamic
26 ......Polyoxy alcohol moiety
27 .....Plural rings in acid moiety
28 ......Ortho fused
29 .....Oxy in acid moiety
30 .....Halogen in acid moiety
31 ......Ring in alcohol moiety
32 .....Ring in alcohol moiety
33 .....Sulfur, nitrogen, halogen or additional oxy in alcohol moiety
34 ....Ureido, guanido or hydrazino in acid moiety
35 ....Amidine, azomethine, ketimine or oxime in acid moiety
36 ....Plural rings bonded directly to the same cyclic carbon in acid moiety
37 ....The nitrogen is not bonded directly to a ring
38 .....The nitrogen is in same side chain as ester function
39 ......Oxy in acid moiety
40 ....Phenylalanines
41 ......Amide in acid moiety
42 .....Oxy in acid moiety
43 ....The nitrogen is bonded directly to a ring and is in same side chain as ester function
44 .....Polycarboxylic acid
45 ....Oxy in acid moiety
46 .....Benzoic acid substituted on ring with oxy and nitrogen
47 ....Halogen in acid moiety
48 ....Plural rings in acid moiety with nitrogen bonded directly to at least one of the rings
49 ....Nitrogen in alcohol moiety
50 ....Polyoxy alcohol moiety
51 ...Aldehyde or ketone group in acid moiety
52 ....Plural rings bonded directly to the same carbonyl in acid moiety
53 ....Oxy in acid moiety
54 ....Polycarboxylic acid
55 ...Oxy in acid moiety
56 ....Ortho fused rings in acid moiety
57 ....Plural rings bonded directly to the same acyclic carbon in acid moiety
58 .....Nitrogen in alcohol moiety
59 ....Rings bonded directly to each other in acid moiety
60 ....Oxy, not bonded directly to a ring, in same side chain as ester function
61 ....Oxy, bonded directly to a ring, in same side chain as ester function
62 .....Halogen in acid moiety
63 ......Polyoxy alcohol moiety
64 ....Ester function attached directly to a ring
65 .....Halogen in acid moiety
66 .....Acylated
67 .....Phenolic hydroxy or metallate
68 ......Tannins and reaction products thereof
69 ....Extraction from bark or vegetable material
70 ......Polyphenolic hydroxy or metallate
71 ......Salicylic acid
72 ......Ring in alcohol moiety
73 .....Ring in alcohol moiety
74 .....Nitrogen in alcohol moiety
75 ....Phenolic hydroxy or metallate
76 ...Polycarboxylic acid
77 ....Producing carboxyl group by oxidation
78 ....Purification or recovery
79 .....Of ester of polyoxy alcohols
80 ....Ortho fused rings in acid moiety
81 ....Esterified carboxy not bonded directly to a ring
82 .....Malonates
83 ....Halogen in acid moiety
84 ....Ring in alcohol moiety
85 .....Aromatic alcohol moiety
86 ......Esterified phenolic hydroxy
87 ....Sulfur or halogen in alcohol moiety
88 ....Nitrogen in alcohol moiety
89 ....Polyoxy alcohol moiety
90 .....Additional esterifying acid
91 .....Polyoxyalkylene alcohol moiety
92 .....Preparing esters by ester interchange
93 .....Preparing esters from alkylene oxides
94 .....Preparing esters from acid or from nitrile and diol
95 ....Unsaturation in alcohol moiety
96 ....Processes
97 .....Carbonylation
98 .....Esterification of acid, salt, acid halide or anhydride with alcohol
99 ......Metal containing catalyst utilized
100 ...Naphthyl in acid moiety
101 ...Plural rings bonded directly to the same carbon in acid moiety

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.Carboxylic acid esters
..Aromatic acid moiety
102 ...Rings bonded directly to each other in acid moiety
103 ...Monocyclic acid moiety
104 ....Additional unsaturation in acid moiety
105 ....Carboxyl, not bonded directly to a ring, in acid moiety
106 ....Ring in alcohol moiety
107 .....Plural rings in alcohol moiety
108 ......Esterified phenolic hydroxy
109 .....Esterified phenolic hydroxy
110 ....Nitrogen in alcohol moiety
111 ....Halogen in alcohol moiety
112 ....Polyoxy alcohol moiety
113 ....Unsaturation in alcohol moiety
114 ..Preparing alicyclic acid esters by carbonylation
115 ..Alicyclic carbamates
116 ..Plural alicyclic rings in acid moiety
117 ...Tricyclo ring system in acid moiety
118 ...Two rings only in acid moiety
119 ....Ortho fused
120 ....2,2,1-bycyclo
121 ..Cyclopentyl in acid moiety (e.g., prostaglandins, etc.)
122 ...Cyclopentyl-COOR, -C-COOR or -C-C-COOR
123 ..Cyclobutyl in acid moiety
124 ..Cyclopropyl in acid moiety
125 ..Alicyclic acid moiety containing N, S, P, B or halogen
126 ..Alicyclic acid moiety containing oxy, aldehyde or ketone group
127 ..Alicyclic polycarboxylic acid moiety
128 ..Alicyclic acid moiety containing unsaturation
129 ..Acyclic acid moiety
130 ...Esterified phenolic hydroxy
131 ....Preparing esters by oxidation
132 ....Carbamic acid
133 .....Plural rings in phenolic moiety
134 ......Ortho fused
135 .....Sulfur in phenolic moiety
136 .....Nitrogen in phenolic moiety
137 .....Sulfur, halogen or additional nitrogen or oxygen in carbamic acid moiety
138 ....Plural rings in phenolic moiety
139 .....Ortho fused
140 .....Plural rings bonded directly to the same carbon in phenolic moiety
141 .....Rings bonded directly to each other in phenolic moiety
142 ....Nitrogen or sulfur in phenolic moiety
143 ....Salicylic acid or functional derivative
144 ....Polyoxy phenolic moiety
145 ....Sulfur, nitrogen, halogen, oxy, or aldehyde or ketone group in acid moiety
146 ....Polycarboxylic acid
147 ...Sulfur in acid moiety
148 ....Carbamic acid
149 ....Sulfoxy in acid moiety
150 .....Sulfonyl or sulfinyl in acid moiety
151 .....Polycarboxylic acid
152 ....Thio ether in acid moiety
153 .....Nitrogen or halogen in acid moiety
154 .....Polycarboxylic acid
155 ...Nitrogen in acid moiety other than as nitroso or isocyanate (e.g., amino acid esters, etc.)
156 ....Nitro bonded to carbon in acid moiety
157 ....Carbamic acid
158 .....Polycarbamic
159 .....Additional nitrogen in acid moiety
160 .....Oxy in acid moiety
161 .....Halogen in acid moiety
162 .....Cyclic alcohol moiety
163 ......Aromatic alcohol moiety
164 ....Polyoxy alcohol moiety
165 .....Sulfur or nitrogen in alcohol moiety
166 .....Polyoxy alcohol moiety
167 .....Halogen in alcohol moiety
168 ....Amidine, azomethine, ketimine or oxime in acid moiety
169 ....Additional nitrogen in acid moiety
170 ....Oxy, aldehyde or ketone group in acid moiety
171 ....Polycarboxylic acid
172 ....Halogen or unsaturation in acid moiety
173 ....Cyclic alcohol moiety
174 ...Aldehyde or ketone group in acid moiety
175 ....Preparing esters by carbonylation
176 ....Polycarboxylic acid
177 ....Aldehyde group in acid moiety
178 ....Acetoacetic acid
179 ...Oxy in acid moiety
180 ....Polycarboxylic acid
181 .....Unsaturation in acid moiety
182 .....Polyoxy alcohol moiety
183 ....Unsaturation in acid moiety
184 ....Halogen in acid moiety
185 ....Acylated oxy in acid moiety
186 ....Polyoxy acid moiety
187 ....Alkoxy in acid moiety
188 ....Cyclic alcohol moiety
189 ....Polyoxy alcohol moiety
190 ...Polycarboxylic acid
191 ....Purification or recovery
192 ....Halogen in acid moiety
193 ....Cyclic alcohol moiety
194 .....Plural rings in alcohol moiety
195 ....Phosphorus or sulfur in alcohol moiety
196 ....Nitrogen in alcohol moiety
197 ....Halogen in alcohol moiety
198 ....Polyoxy alcohol moiety
199 .....Additional monooxy alcohol or monocarboxylic acid (e.g., complex esters, etc.)
200 .....Preparing esters from alkylene oxides
201 ....Unsaturation in alcohol moiety
202 ....Preparing esters by oligomerization
203 ....Preparing esters by alkylation or isomerization
204 ....Preparing esters by esterification or carbonylation
205 ...Unsaturation in acid moiety
206 ....Preparing esters by carbonylation
207 .....Group VIII noble metal catalyst utilized
208 ....Formation of carboxyl group by oxidation
209 ....Preparing esters from alkylene oxides
210 ....Preparing esters from aldehydes
211 ....Formation of ethylenic unsaturation
212 .....By dehydration or dealcoholization
213 .....By dehalogenation or dehydrohalogenation
214 .....By dehydrogenation
215 ....Preparing esters from nitriles or amides
216 ....Preparing esters by depolymerization

	ORGANIC COMPOUNDS (Class 532, Subclass 1)
	.Carboxylic acid esters
	..Acyclic acid moiety
	...Unsaturation in acid moiety
217	....Preparing esters by ester interchange
218	....Purification or recovery
219	....Halogen in acid moiety
220	....Cyclic alcohol moiety
221	.....Aromatic alcohol moiety
222	....Phosphorus, sulfur or nitrogen in alcohol moiety
223	....Halogen in alcohol moiety
224	....Polyoxy alcohol moiety
225	....Unsaturation in alcohol moiety
226	...Halogen in acid moiety
227	....Fluorine in acid moiety
228	....Cyclic alcohol moiety
229	....Halogen in alcohol moiety
230	....Polyoxy alcohol moiety
231	...Unsubstituted acids of the acetic series
232	....Preparing esters by carbonylation
233	.....Of olefins
234	....Preparing esters by ester interchange
235	.....From alkyl sulfates
236	....Preparing esters from halogenated hydrocarbons
237	.....From alkenyl halides
238	....Preparing esters from aldehydes
239	....Preparing esters by dehydrogenation of alcohols
240	....Preparing esters from ethers
241	....Preparing esters from hydrocarbons
241.1	.....By oxidation of hydrocarbon mixtures
242	.....From acetylenic hydrocarbons
243	.....From olefins utilizing Group VIII noble metal catalyst
244	......From polyolefins
245	......Gas phase
246	.....Preparing polyoxy alcohol esters from olefins
247	.....Preparing alkyl esters from olefins
248	....Purification or recovery
249	....Terpene alcohol moiety
250	....Nitrogen in alcohol moiety other than as nitro, nitroso or isocyanate
251	.....Plural nitrogens in alcohol moiety
252	.....Polyoxy alcohol moiety
253	.....Acyclic alcohol moiety
254	....Aromatic alcohol moiety
255	.....Plural rings in alcohol moiety
256	....Polycyclo-alicyclic ring system in alcohol moiety
257	.....Nor- or homo-cyclopentanohydrophenanthrenes
258	......Nor-A ring
259	....2,6,6-trialkyl cyclohexenyl in alcohol moiety
260	.....Vitamin A alcohol moiety
261	....Acyclic alcohol moiety having unsaturation
262	.....Substituted
263	....Acyclic polyoxy alcohol moiety
264	.....Substituted
265	....Acyclic monohydric alcohol moiety
266	.....Substituted
300	.Hypohalite or perhypohalite esters (i.e., compounds having the -O-halo group or the -O-O-halo group bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
301	.Cyanate esters (i.e., compounds having the -OCN group bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
302	.Compounds having the group -C(=X)-X-nX-, wherein the X's may be the same or diverse chalcogens, nX is a divalent chalcogen or a chain of divalent chalcogens single bonded to each other, and the terminal X is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon (e.g., percarboxylate esters, etc.)
303	.Sulfohydroxamate esters or chalcogen analogues thereof (i.e., compounds having the -S(=O)(=O)-NH-X- group, wherein X is chalcogen and substitution may be made for hydrogen only, and wherein the X is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
304	.Peroxynitrate esters (i.e., compounds having the -O-O-N(=O)(=O) group bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
305	.Perborate esters or chalcogen analogues thereof (i.e., compounds having the -X-X- group, wherein the X's are the same or diverse chalcogens, bonded directly to boron and to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
306	.Perhalate esters (i.e., compounds having the -O-halo(=O)(=O)(=O) group bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)
307	.Esters having the -S(=O)(=O)-S- group, wherein the divalent sulfur is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon (e.g., thiolsulfonate esters, etc.)
308	..Oxygen bonded directly to the hexavalent sulfur of the -S(=O)(=O)-S- group (i.e., thiosulfate esters)
309	...Nitrogen attached indirectly to the -S(=O)(=O)-S- group by acyclic nonionic bonding
310	.Esters having the -S(=O)-S- group, wherein the divalent sulfur is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon (e.g., thiolsulfinate esters, dithiosulfurous acid esters, etc.)
311	.Perhydroxamate esters or chalcogen analogues thereof (i.e., compounds having the -C(=X)-NH-X-X- group, wherein the X's are the same or diverse chalcogens and substitution may be made for hydrogen only, and wherein the terminal X is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

ORGANIC COMPOUNDS (Class 532, Subclass 1)

312 .Hydroxamate esters or chalcogen analogues thereof (i.e., compounds having the -C(=X)-NH-X- group, wherein the X's may be the same or diverse chalcogens and substitution may be made for hydrogen only, and wherein the single bonded X is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

313 ..Nitrogen bonded directly to the carbon of the -C(=X)-NH-X- group

314 ...The single bonded X is sulfur, or the substituent nitrogen is bonded directly to acyclic or alicyclic carbon

315 ..Carbocyclic ring bonded directly to the carbon of the -C(=X)-NH-X- group

316 .Hyponitrite esters (i.e., compounds having the -O-N=N-O- group bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

317 .Esters having the -N=S=O group bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon (i.e., sulfinylamines)

318 .Persulfonate esters (i.e., compounds having the -S(=O)(=O)-O-O- group, wherein the terminal oxygen is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

319 .Perthioimidate esters (i.e., compounds having the perthioimidate group, HN=CH-S-S-, wherein substitution may be made for hydrogen only, bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

330 .Isocyanate esters (i.e., compounds containing the isocyanate group, -N=C=O, bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon)

331 ..With preservative or stabilizer

332 ...Nitrogen containing preservative or stabilizer

333 ...Phosphorus, silicon, or phenolic hydroxy containing preservative or stabilizer

334 ..Carbodiimide containing (i.e., -N=C=N- containing)

335 ..Biuret containing (i.e., -NH-C(=O)-NH-C(=O)-NH- containing, wherein substitution may be made for hydrogen only)

336 ..Processes

337 ...Isocyanic acid, or salt thereof, as reactant

338 ...Processes for forming the isocyanate group

339 ....Cyanate reactant (i.e., reactant contains -OCN group)

340 ....Hetero ring containing reactant

341 ....Carbon monoxide utilized

342 .....Reactant contains nitro group bonded directly to carbon

343 ....Azide reactant (i.e., reactant contains the azide group)

344 ....Reactant containing -NH-C(=O)-NH- group (wherein substitution may be made for hydrogen only)

345 ....Carbamate reactant (i.e., reactant contains -O-C(=O)-NH- group (wherein substitution may be made for hydrogen only)

346 ....Reactant containing nitrogen double or triple bonded to carbon (e.g., nitriles, isonitriles, cyanogen halides, etc.)

347 ....Carbonyl dihalide reactant (e.g., phosgene, etc.)

348 ....Carbamyl halide reactant (i.e., reactant contains halo-C(=O)-NH- group, wherein substitutuion may be made for hydrogen only)

349 ...Halogenation of isocyanate esters

350 ...Isocyanate exchange reactions (i.e., A-NCO + B-X = B-NCO + A-X)

351 ...Processes of reacting isocyanate esters of known structure to yield products of indeterminate structure

352 ...Purification or recovery

353 ...Epoxy compound, or metal, utilized

354 ..Containing polycyclo ring system having alicyclic ring as one of the cyclos

355 ..Acyclic carbon bonded directly to the isocyanate group

356 ...Halogen attached indirectly to the isocyanate group by acyclic nonionic bonding

357 ...Chalcogen, single bonded directly to carbon, attached indirectly to the isocyanate group by acyclic nonionic bonding (e.g., ether group containing, etc.)

358 ..Benzene ring bonded directly to the isocyanate group

359 ...Plural benzene rings bonded directly to isocyanate groups (e.g., diisocyanatodiphenylmethane, etc.)

360 ...Plural isocyanate groups bonded directly to the same benzene ring

IN THIS SERIES OF CLASSES, CLASS 562 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (Class 532, Subclass 1)

1 .Persulphonic acids or salts thereof (i.e., compounds having the -S(=O)(=O)-O-OH group, wherein the hydrogen may be replaced by a group IA or IIA light metal, or by substituted or unsubstituted ammonium)

2 .Percarboxylic acids or salts thereof (i.e., compounds having the -C(=O)-O-OH group, wherein the hydrogen may be replaced by a group IA or IIA light metal, or by substituted or unsubstituted ammonium)

3 ..With preservative or stabilizer

4 ..Formation of the -C(=O)-O-OH group, or of a salt thereof (e.g., from acid halides or anhydrides, neutralization; etc)

5 ...Aldehyde or percarboxylic acid ester reactant

6 ...Carboxylic acid or carboxylic acid salt reactant

7 .Boron acids or salts thereof (i.e., compounds having -XH, wherein X is chalcogen, attached directly to boron by nonionic bonding and wherein the hydrogen may be replaced by a group IA or IIA light metal, or by substituted or unsubstituted ammonium)

8 .Phosphorus acids or salts thereof (i.e., compounds having -XH, wherein X is chalcogen, attached directly to phosphorus by nonionic bonding and wherein the hydrogen may be replaced by a substituted or unsubstituted ammonium or by a group IA or IIA light metal)

9 ..Sulfur attached directly to the phosphorus by nonionic bonding

10 ..Nitrogen attached directly to the phosphorus by nonionic bonding

11 ..Nitrogen attached indirectly to the phosphorus by nonionic bonding

12 ...Plural phosphori attached indirectly to each other by nonionic bonding

13 ....Plural phosphori bonded directly to the same carbon

14 ....Additional nitrogen attached indirectly to the phosphorus by nonionic bonding

15 ...The nitrogen is bonded directly to -C(=X)-, wherein X is chalcogen

16 ...The nitrogen and the phosphorus are bonded directly to the same carbon

17 ....The nitrogen is bonded to an additional acyclic carbon or acyclic carbon chain, to which a -C(=X)X- group is bonded directly, wherein the X's are the same or diverse chalcogen

18 .....Preparing from a compound having a nitrogen containing hetero ring

19 ..The phosphorus is in a ring

20 ..Plural phosphori attached indirectly to each other by nonionic bonding

21 ...Plural phosphori bonded directly to the same carbon

22 ....Processes

23 ..Chalcogen attached indirectly to the phosphorus by nonionic bonding

24 ...The chalcogen is in a -C(=X)- group

25 ..Halogen attached indirectly to the phosphorus by nonionic bonding

26 .Thiocarboxylic acids or salts thereof (i.e., compounds having the group -C(=X)XH, wherein the X's are the same or diverse chalcogens and at least one X is sulfur, and hydrogen may be replaced by a group IA or IIA light metal, or by substituted or unsubstituted ammonium)

27 ..Nitrogen bonded directly to the carbon of the -C(=X)XH group or of its salt (e.g., dithiocarbamic acids, etc.)

28 ...Processes utilizing carbon disulfide

29 .Thiosulfonic acids or salts thereof (i.e., compounds containing the thiosulfonate group, -S(=O)(=O)-S-, wherein the divalent sulfur is bonded directly to hydrogen, or to a group IA or IIA light metal or to substituted or unsubstituted ammonium)

30 .Sulfonic acids or salts thereof (i.e., compounds containing the sulfonate group, -S(=O)(=O)-O- wherein the single bonded oxygen is bonded directly to hydrogen, or to a group IA or IIA light metal or to substituted or unsubstituted ammonium)

31 ..Hydrophenanthrene ring system containing

32 ..Processes of sulfonating lignites, leonardites, coal, humic acids, bark or pitch, and the reaction products thereof

33 ..Petroleum sulfonic acids

34 ...Addition salts having organic nitrogen containing cation

35 ..Boron or phosphorus attached indirectly to the sulfonate group by nonionic bonding (e.g., phosphonium salts, etc.)

36 ..Chalcogen or -C(=X)-, wherein X is chalcogen, attached directly to the sulfonate sulfur by nonionic bonding

37 ..Nitrogen attached directly to the sulfonate sulfur by nonionic bonding (e.g., sulfamic acids, etc.)

38 ...Processes utilizing an inorganic sulfamic acid, or a salt thereof

39 ...Processes of forming the -NH-S(=O)(O=)-O- group, wherein substitution may be made for hydrogen only

40 ...Additional salts having organic nitrogen containing cation

41 ..Benzene ring attached indirectly to the sulfonate group by acyclic nonionic bonding

42 ...Noncarbon atom in acyclic chain between the benzene ring and the sulfonate sulfur

43 ....Nitrogen in the acyclic chain

44 .....Chalcogen or -C(=X)-, wherein X is chalcogen, in the chain

45 ..Benzene ring bonded directly to the sulfonate sulfur (e.g., purification and neutralization of benzene sulfonic acids, etc.)

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.Sulfonic acids or salts thereof (i.e., compounds containing the sulfonate group, -S(=O)(=O)-O- wherein the single bonded oxygen is bonded directly to hydrogen, or to a group IA or IIA light metal or to substituted or unsubstituted ammonium)
..Benzene ring bonded directly to the sulfonate sulfur (e.g., purification and neutralization of benzene sulfonic acids, etc.)
46 ...Having -C(=X)-, wherein X is chalcogen, attached indirectly to the sulfonate group by nonionic bonding (e.g., aldehydes, etc.)
47 ....Chalcogen or nitrogen bonded directly to the -C(=X)- group
48 .....Benzene ring bonded directly to each nitrogen of a -NH-C(=X)-NH-group, wherein X is chalcogen and substitution may be made for hydrogen only
49 ......At least one of the benzene rings is part of a naphthalene ring system
50 ......Plural naphthalene ring systems attached indirectly to the -NHC(=X)NH- group by nonionic bonding
51 .....Stilbene containing
52 .....Plural -C(=X)- groups attached indirectly to the sulfonate group by nonionic bonding
53 ......Plural carbons bonded directly to -C(=X)-
54 ......Plural -C(=X)- groups bonded directly to the same benzene ring
55 .....Acyclic carbon bonded directly to the -C(=X)- group
56 .....The -C(=X)- is part of a -C(=X)X- group, wherein the X's may be the same or diverse chalcogens
57 ......Nitrogen attached indirectly to the sulfonate group by nonionic bonding
58 ...Nitrogen attached indirectly to the sulfonate group by nonionic bonding
59 ....Plural benzene rings bonded directly to each other or to the same acyclic carbon
60 ....Stilbene containing
61 ....Plural benzene rings bonded directly to the same nitrogen
62 .....Plural nitrogens each bonded to two benzene rings (e.g., phenylaminophenylaminophenyl compounds, etc.)
63 .....At least one of the benene rings is part of a naphthalene ring system
64 .....Oxygen bonded directly to a benzene ring
65 ....Sulfonyl bonded directly to the nitrogen
66 ....The nitrogen is attached indirectly to a benzene ring by acyclic nonionic bonding
67 .....Additional nitrogen attached indirectly to the sulfonate group by nonionic bonding
68 ....Polycyclo ring system consisting of benzene rings bonded directly to the sulfonate group
69 .....Nitro or nitroso bonded directly to the polycyclo ring system
70 .....Oxygen bonded directly to the polycyclo ring system (e.g., aminonaphthol sulfonic acid, etc.)
71 ......Additional sulfonate group bonded directly to the polycyclo ring system (e.g., H acid, etc.)
72 .....Halogen, plural nitrogens, or additional sulfonate group bonded directly to the polycyclo ring system
73 ....Nitro or halogen bonded directly to a benzene ring
74 ...Nonsulfonate chalcogen attached indirectly to the sulfonate group by nonionic bonding
75 ....Two benzene rings bonded to the nonsulfonate chalcogen (e.g., phenoxyphenyl compounds, etc.)
76 ....Plural carbons bonded directly to the nonsulfonate chalcogen (e.g., ethers, sulfones, etc.)
77 .....Hydroxy group or nonsulfonate sulfur attached indirectly to a benzene ring by acyclic nonionic bonding
78 ....Halogen attached indirectly to the sulfonate group by nonionic bonding
79 ....The sulfonate group and oxygen are bonded directly to the same polycyclo ring system which consists of benzene rings
80 .....Additional sulfonate group bonded directly to the polycyclo ring system
81 ....Plural oxygens bonded directly to the same benzene ring
82 ....The sulfonate group, oxygen, and alkyl of at least 4 carbons are bonded directly to the same benzene ring
83 ...Halogen attached indirectly to the sulfonate group by nonionic bonding
84 ...Addition salts having organic nitrogen containing cation
85 ....Having -C(=X)-, wherein X is chalcogen, in the cation
86 ....Nitrogen double bonded to carbon in the cation (e.g., guanidinium salts, etc.)
87 ...Acyclic carbon to carbon unsaturation containing
88 ...Plural benzene rings bonded directly to each other, or to the same acyclic carbon or acyclic carbon chain
89 ...Polycyclo ring system consisting of benzene rings bonded directly to the sulfonate group
90 ....Processes of sulfonating naphthalene per se or alkyl substituted naphthalene
91 ...Sulfonate group and alkyl group of at least four carbons bonded directly to the same benzene ring
92 ....With preservative, stabilizer, or color or odor affecting additive
93 ....Processes including alkylation of a benzene ring, and the products thereof
94 .....The alkylating agent is an olefin
95 ....Sulfonation processes
96 ....Purification or recovery
97 ....Neutralization or acidification

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.Sulfonic acids or salts thereof (i.e., compounds containing the sulfonate group, -S(=O)(=O)-O- wherein the single bonded oxygen is bonded directly to hydrogen, or to a group IA or IIA light metal or to substituted or unsubstituted ammonium)

..Benzene ring bonded directly to the sulfonate sulfur (e.g., purification and neutralization of benzene sulfonic acids, etc.)

98 ...Sulfonation utilizing sulfur trioxide or oleum (e.g., sulfonation of benzene or toluene with oleum, etc.)

99 ...Sulfonation utilizing sulfuric acid (e.g., sulfonation of benzene or toluene with sulfuric acid, etc.)

100 ..Polycyclo alicyclic ring system attached directly or indirectly to the sulfonate group by nonionic bonding

101 ..Plural sulfonate groups attached indirectly to each other by acyclic nonionic bonding

102 ...Nitrogen or -C(=X)-, wherein X is chalcogen, attached indirectly to the sulfonate groups by nonionic bonding

103 ...Plural nonsulfonate chalcogens attached indirectly to the sulfonate groups by nonionic bonding

104 ..Nitrogen attached indirectly to the sulfonate group by acyclic nonionic bonding

105 ...Having -C(=X)-, wherein X is chalcogen, attached indirectly to the sulfonate group by acyclic nonionic bonding

106 ....Plural nitrogens or plural -C(=X)- groups, wherein X is chalcogen, attached indirectly to the sulfonate group by acyclic nonionic bonding

107 ...Chalcogen attached indirectly to the sulfonate group by acyclic nonionic bonding

108 ..Chalcogen attached indirectly to the sulfonate group by acyclic nonionic bonding

109 ...The chalcogen, X, is in a -C(=X)- group

110 ...Plural chalcogens attached indirectly to the sulfonate group by acyclic nonionic bonding

111 ...Plural carbons bonded directly to the chalcogen (e.g., ethers, etc.)

112 ...Addition salts having organic nitrogen containing cation

113 ..Halogen attached indirectly to the sulfonate group by acyclic nonionic bonding

114 ..Addition salts having organic nitrogen containing cation

115 ..Processes (e.g., neutralization, stabilization, etc.)

116 ...Decarboxylation, hydrogenation or formation of carbon-to-carbon unsaturation

117 ...Conversion of sulfur containing hetero ring compounds to sulfonic acids

118 ...Oxidation of organic sulfur compounds to sulfonic acids

119 ...Hydrolysis of sulfonyl halides

120 ...Formation of sulfonic acids or sulfonic acid salts utilizing inorganic sulfonating agents (e.g., reaction of alcohols or alkyl halides with sulfurous acid, etc.)

121 ....Utilizing sulfur dioxide and oxygen (i.e., sulfoxidation)

122 ....Sulfurous acid or salt thereof reacted with unsaturated hydrocarbon

123 ....Utilizing sulfur trioxide, oleum, sulfuric acid or halosulfonic acid

124 ...Purification or recovery

125 .Sulfinic or sulfenic acids or salts thereof (i.e., compounds containing the sulfinate group, -S(=O)O-, or the sulfenate group, -S-O-, wherein the single bonded oxygen is bonded directly to hydrogen, or to a group IA or group IIA light metal or to substituted or unsubstituted ammonium)

126 ..Nitrogen attached indirectly to a sulfinate group by acyclic nonionic bonding

400 .Carboxylic acids and salts thereof

401 ..Racemization or separation of optical isomers

402 ...Physical resolution

403 ..Hydrophenanthrene nucleus

404 ...1,4a-dimethyl hydrophenanthrene-1 carboxylic acids or salts thereof

405 ..Aromatic

406 ...Preparation by carbonylation

407 ...Formation of carboxyl group by oxidation

408 ....Of aromatic compound

409 .....Alkyl side chain oxidized

410 ......Nitrogen containing oxidant

411 ......Sulfur containing oxidant

412 ......Air, oxygen, or ozone oxidant

413 ....Multistage

414 ....With recycle or recovery of reaction component

415 ....Gas phase

416 ....Halogen containing catalyst, initiator, or promoter utilized

417 ....Initiator or promoter used with catalyst

418 .....Of oxy or carbonyl containing compound

419 ......Hypohalite as oxidant

420 ......Nitrogen containing oxidant

421 ......Air, oxygen, or ozone oxidant

422 .....Of halo alkyl containing compound

423 ...Preparation by carbonation

424 ....Of alkali metal phenolates

425 .....Having plural rings

426 ...Sulfur

427 ....Polycyclo ring system

428 .....Indenyl or hydrindenyl

429 ....Sulfoxy

430 .....Nitrogen

431 ....Carboxyl, or salt thereof, in side chain having sulfur bonded directly to a ring

432 ....Carboxyl, or salt thereof, bonded directly to a ring

433 ...Nitrogen bonded directly to carbon of organic radical (e.g., amino acids, etc.)

434 ....Nitro or nitroso

435 .....Plural rings

436 ......Plural rings bonded directly to the same carbonyl

437 .....Plural nitrogens

438 .....Halogen

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.Carboxylic acids and salts thereof
..Aromatic
...Nitrogen bonded directly to carbon of organic radical (e.g., amino acids, etc.)
439 ....Ureido, guanido, or hydrazine
440 ....Nitrogen double bonded directly to carbon (e.g., amidine, ketimine, etc.)
441 ....Plural rings bonded directly to the same carbon
442 ....Nitrogen not bonded directly to a ring
443 .....In same chain as carboxyl, or salt thereof
444 ......Oxy
445 ....Phenyl alanines
446 ....Di-oxy phenyl alanines
447 ....Phenoxphenyl alanines
448 ....Plural nitrogens
449 ......Halogen
450 ......Amide
451 .....Oxy
452 ....Oxy
453 .....Carboxyl, or salt thereof, nitrogen and oxygen all bonded directly to the same benzene ring
454 .....Aryl-N-Aryl
455 .....Amide
456 ....Halogen
457 ....Plural rings with nitrogen bonded directly to at least one ring
458 ....Carboxyl, or salt thereof, bonded directly to a ring
459 ...Aldehyde or ketone
460 ....Two rings bonded directly to the same carbonyl
461 ....Polycyclo ring system
462 .....Bicyclo ring system
463 ....Oxy
464 .....Phenoxy alkanoic acids
465 ...Oxy
466 ....Polycyclo ring system
467 .....Carboxyl bonded directly to naphthylene ring system
468 ....Plural rings bonded directly to the same carbon
469 ....Rings bonded directly to each other
470 ....Oxy, not bonded directly to a ring, in same side chain as carboxyl, or salt thereof
471 ....Oxy, bonded directly to a ring, in same side chain as carboxyl, or salt thereof
472 .....Halogen
473 ....Carboxyl, or salt thereof, bonded directly to a ring
474 .....Halogen
475 .....Phenolic hydroxy or metallate
476 ......Poly phenolic hydroxy or metallate
477 ......Salicyclic acid per se or salt thereof
478 ....Phenolic hydroxy or metallate
479 ...Decarboxylation of polycarboxylic acid or salt
480 ...Polycarboxylic acids or salts thereof
481 ....Prepared by disproportionation
482 ....Preparation by isomerization
483 ....Preparation by hydrolysis of amide, anhydride, or ester
484 ....Preparation by hydrolysis of nitrile
485 ....Purification or recovery per se
486 .....By crystallization
487 .....By reaction of undesired component
488 ....Plural rings
489 ....Carboxyl not directly attached to a ring
490 ...Naphthyl group
491 ...Plural rings bonded directly to the same carbon
492 ...Rings bonded directly to each other
493 ...Monocyclic
494 ....Purification or recovery per se
495 ....Additional unsaturation
496 ....Carboxyl, or salt thereof, not bonded directly to ring
497 ..Preparing alicyclic acids by carbonylation
498 ..Plural alicyclic rings
499 ...Tricyclo ring system
500 ...Two rings only
501 ....Orthofused
502 ....2,2,1-bicyclo
503 ..Cyclopentyl (e.g., prostoglandins, etc.)
504 ...Cyclopentyl bonded to -COOR, -CCOOR, or -CCCOOR
505 ..Cyclobutyl
506 ..Cyclopropyl
507 ..Alicyclic acids having an element other than oxygen, carbon, or hydrogen
508 ..Alicyclic acids having an oxy, aldehyde, or ketone group
509 ..Alicyclic polycarboxylic acids
510 ..Alicyclic acids having unsaturation
511 ..Naphthenic acids or salts thereof
512 ..Acyclic
512.2 ...Preparing by oxidation of hydrocarbon mixtures
512.4 ....Plural -COO- groups in compound formed
513 ...Preparation from source of undetermined composition (e.g., industrial waste, etc.)
514 ....Nitrogen containing acid produced
515 ...Preparation by degradation of carbohydrates
516 ...Preparation by hydrolysis of proteins
517 ...Preparation by carbonylation
518 ....Of aldehyde or ketone
519 ....Of alcohol or alcoholate
520 ....Of halogenated hydrocarbon
521 ....Of hydrocarbon
522 .....Group VIII metal containing catalyst utilized
523 ...Formation of carboxyl group by oxidation
524 ....Of carboxylic acid or ester
525 .....Of oxy acid or ester
526 ....Of nitrogen containing compound
527 ....Of ketone
528 .....Cyclic ketone or mixture thereof with cyclic alcohol
529 ......Two stage oxidation from hydrocarbon
530 ......With recycle or recovery of reaction component
531 ....Of aldehyde
532 .....Producing unsaturated acid
533 ......Liquid phase oxidation
534 ......Group VIII metal containing catalyst utilized
535 ......Group V metal containing catalyst utilized
536 .....Producing acetic acid
537 ....Of ether
538 ....Of alcohol
539 .....Caustic oxidant
540 .....Nitrogen containing oxidant
541 ....Of halogenated hydrocarbon
542 ....Of hydrocarbon
543 .....Alicyclic

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.Carboxylic acids and salts thereof
..Acyclic
...Formation of carboxyl group by oxidation
....Of hydrocarbon
544 .....Olefin
545 ......Producing unsaturated acid
546 ....Group VIII metal containing catalyst utilized
547 ....Group V metal containing catalyst utilized
548 ......Producing acetic acid
549 .....Alkane
550 ...Formation of carboxyl group by carbonation
551 ....Of C-metallated compound
552 ....Of alkali metal salt of carboxylic acid
553 ...Nitrogen bonded to carbon of organic radical (e.g., amino acids, etc.)
554 ....Purification or recovery per se
555 ....Carbamic acids or salts thereof
556 ....Sulfur or selenium
557 .....Alpha N, beta S - acids or salts thereof
558 ......Penicillamine per se or salt thereof
559 .....Methionine per se or salt thereof
560 ....Ureido, hydrazino, or nitrogen double bonded directly to carbon
561 ....Plural nitrogens
562 .....Lysine per se or salt thereof
563 .....Glutamine per se or salt thereof
564 .....Oxy containing
565 .....Polycarboxylic
566 ......Ethylene diamine tetraacetic acid per se or salt thereof
567 ....Oxy, aldehyde, or ketone
568 .....Polycarboxylic
569 .....Pantothenic acid per se or salt thereof
570 .....Threonine per se or salt thereof
571 ....Polycarboxylic
572 .....Nitrilotriacetic acid per se or salt thereof
573 .....Glutamic acid per se or salt thereof
574 ....Halogen or unsaturation
575 ....Alpha nitrogen
576 .....Beta alanine per se or salt thereof
577 ...Aldehyde or ketone
578 ....Polycarboxylic
579 ...Oxy
580 ....Purification or recovery per se
581 ....Sulfur
582 ....Polycarboxylic
583 .....Ether
584 .....Citric acid per se or salt thereof
585 .....Tartaric acid per se or salt thereof
586 ....Halogen
587 ....Polyoxy
588 ....Alkoxy
589 ....Lactic acid per se or salt thereof
590 ...Polycarboxylic
591 ....Preparation by isomerization
592 ....Preparation by hydrogenation
593 ....Purification or recovery per se
594 ....Element other than C,H,O,N, or halogen
595 ....Unsaturated
596 ....Halogen
597 ....Oxalic acid per se or salt thereof
598 ...Unsaturated
599 ....Formation of ethylenic unsaturation
600 ....Purification or recovery per se
601 ....Sorbic acid per se or salt thereof
602 ...Halogen
603 ....Preparation by halogenating acid or anhydride
604 ....Preparation by dehalogenation
605 ....Fluorine containing
606 ...Saturated lower fatty acids
607 ....Acetic acid per se or salt thereof
608 .....Purification or recovery per se
609 ....Formic acid per se or salt thereof
620 .Nitrolic acids or salts thereof (i.e., compounds having the group -C(=NOH)-N(=O) (=O), wherein the hydrogen may be replaced by a group IA or IIA light metal, or by substituted or unsubstituted ammonium)
621 .Hydroxamic acids, chalcogen analogs or salts thereof (i.e., compounds having the -C(=X)-N(R)-XH group or the -C(XH)=NXR group, wherein R may be hydrogen or substitution for hydrogen, the X's in each group may be the same or diverse chalcogens, and H of -XH in each group may be replaced by a group IA or IIA light metal, or by substituted or unsubstituted ammonium)
622 ..Carbocyclic ring bonded directly to the carbon of the acid group
623 ..Nitrogen attached to the acid group directly or indirectly by acyclic nonionic bonding (e.g., N-hydroxy ureas, dihydroxamic acids, etc.)
624 .Imidic acids, chalcogen analogs or salts thereof (i.e., compounds having the group -N-C(XH)-, wherein X is chalcogen and the hydrogen may be replaced by a group IA or IIA light metal, or by substituted or unsubstituted ammonium)
625 .Sulfohydroxamic acids, chalcogen analogs or salts thereof (i.e., compounds having the -S(=O)(=O)-N(R)-XH group, wherein R may be hydrogen or substitution for hydrogen, X is chalcogen, and H of -XH may be replaced by a group IA or IIA light metal,or by substituted or unsubstituted ammonium)
800 .Hydroxamic acid halides or chalcogen analogs therof (i.e., compounds having the -C(=X)NH-halo group, wherein X is chalcogen and substitution may be made for hydrogen only)
801 ..Additional nitrogen bonded directly to the -C(=X)- group (e.g., urea halides, etc.)
802 .Imidic acid halides (i.e., compounds having the -N=CH-halo group, wherein substitution may be made for hydrogen only)
803 ..Additional halogen bonded directly to the carbon of the imidic halide group (i.e., -N=(halo)C(halo)
804 ..Chalcogen attached directly to the nitrogen of the imidic halide group by nonionic bonding (i.e., -X-N=CH-halo, wherein X is chalcogen)
805 ..Nitrogen attached directly to the nitrogen of the imidic halide group by nonionic bonding (i.e., HNH-N=CH-halo, wherein subsitution may be made for hydrogen only)

ORGANIC COMPOUNDS (Class 532, Subclass 1)
806 .Boron halides (i.e., compounds having halogen attached directly to boron by nonionic bonding
807 ..Phosphorus attached directly or indirectly to the boron by nonionic bonding
808 .Phosphorus halides (i.e., compounds having halogen attached directly to phosphorus by nonionic bonding)
809 ..Nitrogen bonded directly to the phosphorus
810 ...The phosphorus and the nitrogen are in the same ring
811 ..Additional phosphorus attached directly or indirectly to the phosphorus by nonionic bonding
812 ..The phosphorus is in a ring
813 ..Sulfur bonded directly to the phosphorus
814 ...Preparing utilizing an inorganic compound containing phosphorus and sulfur
815 ...Forming phosphorus to carbon bond
816 ..Oxygen bonded directly to the phosphorus
817 ...Halogen attached indirectly to the phosphorus by acyclic nonionic bonding
818 ...Forming phosphorus to halogen bond
819 ...Forming phosphorus to carbon bond
820 ..Forming phosphorus to carbon bond
821 .Sulfur halides (i.e., compounds having halogen attached directly to sulfur by nonionic bonding)
822 ..Nitrogen bonded directly to the sulfur
823 ...Phosphorus, -C(=X)-, wherein X is chalcogen, additional chalcogen attached directly to the nitrogen by nonionic bonding
824 ..The halogen is fluorine
825 ...Chalcogen double bonded directly to the sulfur (e.g., sulfonyl fluorides, etc.)
826 ....Benzene attached directly or indirectly to the sulfur by nonionic bonding
827 ..Chalcogen double bonded directly to the sulfur (e.g., sulfinyl halides, etc.)
828 ...Plural chalcogens double bonded directly to the sulfur (e.g., sulfonyl halides, etc.)
829 ....Processes for forming the sulfonyl halide group utilizing elemental halogen
830 ....Preparing utilizing thionyl halide or carbonyl dihalide (e.g., phosgene, etc.)
831 ....Plural sulfonyl halide groups attached indirectly to each other by nonionic bonding
832 ....Nitrogen, other than as nitro or nitroso, attached indirectly to the sulfur by nonionic bonding
833 ....Chalcogen attached indirectly to the sulfur by nonionic bonding
834 ....Halogen attached indirectly to the sulfur by nonionic bonding
835 ..Chalcogen or nitrogen attached indirectly to the sulfur by nonionic bonding
836 ..Perchloro methyl mercaptan per se (i.e., trichloromethane sulfenyl chloride)
837 .Compounds having the -(O=)S(=O)-NH-halo group (i.e., N-halo sulfonamides, wherein substitution may be made for hydrogen only)
838 .Thiocarboxylic halides (i.e., compounds having the -C(=S)-halo group)
839 ..Additional halogen bonded directly to the -C(=S)- group (e.g., thiophosgene, etc.)
840 .Carboxylic halides (i.e., compounds having the -C(=O)-halo group)
841 ..With preservative or stabilizer
842 ..Boron or phosphorus attached directly or indirectly to the carbonyl group by nonionic bonding
843 ..Carbonyl bonded directly to the carbonyl group (e.g., oxalyl chlorides, etc.)
844 ..Nitrogen bonded directly to the carbonyl group (e.g., carbamyl chlorides, etc.)
845 ...Chalcogen or additional carbonyl bonded directly to the nitrogen
846 ...Processes utilizing phosgene as a reactant
847 ..Phosgene, per se
848 ..Processes utilizing carbon monoxide as a reactant
849 ..Fluorine is the halogen (i.e., carboxylic fluorides)
850 ...Plural -C(=O)-F groups attached indirectly to each other by nonionic bonding
851 ...Processes for forming the carbonyl group
852 ...Processes for forming the carbonyl to fluoride bond
853 ..Plural -C(=O)-halo groups attached indirectly to each other by nonionic bonding
854 ...Preparing utilizing phosgene
855 ...Plural -C(=O)-halo groups bonded directly to the same benzene ring
856 ..Processes
857 ...Phosgene reactant
858 ...Ketene reactant
859 ...Forming the carbonyl group
860 ....By oxidizing a halogenated olefin
861 ...Forming the carbonyl to halide bond
862 ....Reactant having halogen bonded directly to sulfur by nonionic bonding
863 ....Elemental halogen or hydrogen halide utilized
864 ...Halogenation
865 ...Dehalogenation or dehydrohalogenation
866 ...Purification or recovery
867 ..Alicyclic ring containing
868 ..Nitrogen attached indirectly to the carbonyl group by nonionic bonding
869 .Containing -C(=X)-CN, wherein X is chalcogen (e.g., carbonyl cyanides, etc.)
870 .Sulfonyl isocyanates or sulfonyl isothiocyanates, (i.e., compounds having the -S(=O)(=O)-N=C=X group, wherein X is oxygen or sulfur)
871 .Containing -C(=X)-N=C=X or -C(=X)-X-N=N-X-, wherein the X's may be the same or diverse chalcogens
872 .Sulfonic anhydrides (i.e., compounds having the -S(=O)(=O)-O-S(=O)(O=)-group
873 .Containing -S(=O)(=O)-CN or -S(=O)(=O)-N=S=O

ORGANIC COMPOUNDS (Class 532, Subclass 1)

874 .Containing -C(=X)-NH-X-C(=X)- or -C(=X)-NH-X-S(=O)(=O)-, wherein substitution may be made for hydrogen only, and the X's may be the same or diverse chalcogens
875 .Containing -C(=NH)-X-C(=X)-, wherein substitution may be made for hydrogen only, and the X's may be the same or diverse chalcogens
876 .Phosphorus bonded directly to the single bonded X of a -C(=X)-X-group, wherein the X's may be the same or diverse chalcogens
877 .Phosphorus bonded directly to cyano or to -N=C=X, wherein X is chalcogen
878 .Two phosphori bonded directly to the same divalent chalcogen atom (e.g., pyrophosphorus compounds, etc.)
879 .Containing -C(=X)-X-N(=O) or -C(=X)-X-S(=O)(=O)-, wherein the X's may be the same or diverse chalcogens
880 .Containing -C(=X)-NH-X-NH-C(=X)- or -C(=X)-X-NH-S(=O)(=O)-, wherein substitution may be made for hydrogen only, and the X's may be the same or diverse chalcogens
881 .Containing -C(=X)-NH-X-halo, wherein substitution may be made for hydrogen only, and the X's may be the same or diverse chalcogens
882 .Boron bonded directly to the single bonded X of a -C(=X)-X- group, wherein the X's may be the same or diverse chalcogens
883 .Two borons bonded directly to the same divalent chalcogen atom (e.g., boroxoles, etc.)
884 .Boron bonded directly to the single bonded oxygen of a -S(=O)(=O)-O- group
885 .Compounds having the -S-SCN group bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon
886 .Thiocarboxylic acid anhydrides (i.e., compounds having the -C(=X)-X-C(=X)- group, wherein the X's may be the same or diverse chalcogens and at least one X is sulfur)
887 .Carboxylic acid anhydrides (i.e., compounds having the -C(=O)-O-C(=O)- group)
888 ..Processes of forming the -C(=O)-O-C(=O)- group
889 ...Aldehyde reactant
890 ...Carbon monoxide or metal carbonyl reactant
891 ....Ether or carboxylic acid ester reactant
892 ...Ketone or ketene reactant
893 ...Ether or carboxylic acid ester reactant
894 ...Carboxylic acid salt reactant
895 ...Dehydration of two like or different molecules of carboxylic acid
896 ....Vapor phase
897 ...Carboxylic acid halide reactant
898 ..Purification or recovery
899 .Selenium or tellurium containing

CLASS 564 PART OF THE CLASS 532-570 SERIES -- ORGANIC COMPOUNDS

DECEMBER 1990

IN THIS SERIES OF CLASSES, CLASS 564 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (Class 532, Subclass 1)
1 .AMINO NITROGEN CONTAINING (E.G., UREA, SULFONAMIDES, NITROSAMINES, OXYAMINES, ETC., AND SALTS THEREOF)
1.5 ..Adducts or inclusion compounds of urea per se or of of thiourea per se with organic compounds (e.g., urea-alkane inclusion compounds, etc.)
2 ..With preservative or stabilizer
3 ...Ureas or thioureas with preservative or stabilizer
4 ...Carboxamides with preservative or stabilizer
5 ...Benzene ring containing compound with preservative or stabilizer
6 ....Inorganic preservative or stabilizer
7 ....Sulfur or phenol containing preservative or stabilizer
8 ..Boron containing (e.g., boron containing complexes, salts, etc.)
9 ...Boron attached directly to amino nitrogen by nonionic bonding
10 ....The boron and amino nitrogen are members of the same ring
11 .....Polycyclo ring system having the nitrogen and boron containing ring as one of the cyclos
12 ..Phosphorus attached directly to amino nitrogen by nonionic bonding
13 ...The phosphorus and nitrogen are members of the same ring
14 ...Chalcogen and plural nitrogens bonded directly to the same phosphorus
15 ..Phosphorus attached indirectly to amino nitrogen by nonionic bonding
16 ...The phosphorus is a ring member
17 ..Thioureas (i.e., HNH-C(=S)-HNH, wherein substitution may be made for hydrogen only)
18 ...Thiocarbazides or thiosemicarbazides (i.e. HNH-NH-C(=S)-HNH, wherein the N bonded directly to the thiourea N is an amino N and substitution may be made for hydrogen only)
19 ....Thiocarbazones or thiosemicarbazones (i.e., HCH=N-NH-C(=S)-HNH, wherein substitution may be made for hydrogen only)
20 .....Benzene ring containing
21 ......Additional nitrogen attached indirectly to the thiocarbonyl by nonionic bonding
22 ...Thiobiurets (i.e., HNH-C(=S)-NH-C(=X)-HNH, wherein X is S or O and substitution may be made for hydrogen only)
23 ...Carbonyl, sulfur, or cyano attached directly to thiourea nitrogen by nonionic bonding
24 ...Processes utilizing carbon disulfide
25 ...Processes utilizing cyano containing compound
26 ...Benzene ring containing
27 ....Nitrogen attached indirectly to the thiocarbonyl by nonionic bonding
28 ....Hydroxy, bonded directly to carbon, or ether containing (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
29 ....Halogen attached indirectly to the thiocarbonyl by nonionic bonding
30 ...Acyclic
31 ....Thiourea per se or salt thereof
32 ..Ureas (i.e., HNH-CO-HNH, wherein substitution may be made for hydrogen only)
33 ...Nitro or nitroso bonded directly to nitrogen
34 ...Carbazides or semicarbazides (i.e., HNH-NH-CO-HNH, wherein substitution may be made for hydrogen only)
35 ....Carbonyl or sulfur attached directly to carbazide or semicarbazide nitrogen by nonionic bonding
36 ....Carbazones or semicarbazones (i.e., HCH=N-NH-CO-HNH, wherein substitution may be made for hydrogen only)
37 ....Acyclic
38 ...Biurets (i.e., HNH-CO-NH-CO-HNH, wherein substitution may be made for hydrogen only)
39 ...Sulfur attached directly to urea nitrogen by nonionic bonding
40 ....The sulfur is part of a substituent which contains nitrogen
41 .....The substituent nitrogen is the nitrogen of a benzamido group (e.g., Cl-benzene-CO-NH-HCH-(O=)S(=O) -, bonded directly to urea nitrogen, etc.)
42 ....The sulfur is part of a monocyclic benzene ring containing substituent
43 .....Alicyclic ring bonded directly to urea nitrogen
44 ...Additional carbonyl bonded directly to urea nitrogen
45 ....The additional carbonyl is in a substituent which is acyclic
46 .....Carbon to carbon unsaturation in the substituent
47 ...Benzene ring containing
48 ....Benzene ring bonded directly to urea nitrogen (i.e., anilides)
49 .....The benzene ring is part of a substituent which contains sulfur
50 .....The benzene ring is part of a substituent which contains nitrogen
51 ......The substituent nitrogen is attached indirectly to the benzene ring by acyclic nonionic bonding
52 .....The benzene ring is part of a substituent which contains oxygen
53 .....The benzene ring is part of a substituent which contains halogen bonded directly to carbon
54 ......The halogen is fluorine
55 .....Plural benzene rings bonded directly to urea nitrogen
56 ....Aralkyl bonded directly to urea nitrogen
57 ...Alicyclic ring containing
58 ...Additional carbon bonded directly to urea nitrogen
59 ....The additional carbon is part of a substituent which contains nitrogen
60 ....The additional carbon is part of a substituent which contains oxygen
61 ....Processes

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.AMINO NITROGEN CONTAINING (E.G., UREA, SULFONAMIDES, NITROSAMINES, OXYAMINES, ETC., AND SALTS THEREOF)
..Ureas (i.e., HNH-CO-HNH, wherein substitution may be made for hydrogen only)
...Additional carbon bonded directly to urea nitrogen
....Processes
62 .....Preparing directly from compound having carbon to carbon unsaturation
63 ...Urea per se or salt thereof
64 ....Preparing directly from cyano containing compound
65 ....Preparing directly from ammonia and carbonmonoxide or carbon oxysulfide (e.g., from ammonia and COS, etc.)
66 ....Preparing directly from ammonium carbamate (i.e., from HNH-COO-HHNHH)
67 ....Preparing directly from ammonia and carbon dioxide
68 .....With corrosion inhibiting of reactor
69 .....With ammonia synthesis
70 .....With decomposition of by-product ammonium carbamate (i.e., decomposition of HNH-COO-HHNHH)
71 ......Utilizing indirect heat exchange
72 ......In plural stages
73 ....Purification or recovery
74 ..Thiocarboxamides (i.e., compounds containing -C(=S)-HNH, wherein substitution may be made for hydrogen only)
75 ...Sulfur bonded directly to the thiocarbonyl
76 ....Thiuram sulfides (e.g., HNH-C(=S)-S-S-C(=S)-HN-alkyl, etc.)
77 ...Thiooxamides (i.e., HNH-C(=S)-C(=X)-HNH, wherein X is S or O and substitution may be made for hydrogen only)
78 ...Acyclic
79 ..Sulfamides (i.e., HNH-(O=)S(=O)-HNH, wherein substitution may be made for hydrogen only)
80 ..Sulfonamides (i.e., Q-(O=)S(=O)-HNH, wherein Q is a substituent and wherein any substituent replacing one or both hydrogens shown will be referred to as E)
81 ...Hydrazine containing
82 ...Plural sulfonamide groups containing or containing plural sulfonyls bonded directly to the same nitrogen
83 ....Two sulfonamido sulfonyls having no sulfonamido nitrogen between the sulfonyls
84 ...Substituent Q contains benzene ring
85 ....Sulfur in substituent Q
86 ....Nitrogen in substituent Q
87 .....Nitro or nitroso in substituent Q
88 ....Carbonyl in substituent Q
89 ....Hydroxy, bonded directly to carbon, or ether in substituent Q (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
90 ....Substituent Q is monocyclic
91 .....Carbonyl, cyano, nitro, nitroso, halogen, or sulfur attached directly to the sulfonamide nitrogen or to an amino nitrogen in a substituent E by nonionic bonding
92 .....Benzene ring in a substituent E
93 .....Hydroxy, bonded directly to carbon, or ether in a substituent E (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
94 .....Nitrogen in an acyclic substituent E
95 ...Substituent Q is acyclic
96 ....Halogen in substituent Q attached indirectly to the sulfonamide sulfur by nonionic bonding
97 .....Benzene ring in a substituent E
98 ....Substituent Q is alkyl
99 .....Benzene ring in a substituent E
100 ..Sulfur and amino nitrogen attached directly to the same sulfur by nonionic bonding
101 ..Plural amino nitrogens attached directly to the same sulfur, or oxygen double bonded and amino nitrogen attached directly to the same sulfur, all by nonionic bonding (e.g., sulfinamides, etc.)
102 ..Sulfur attached directly to amino nitrogen by nonionic bonding (e.g., sulfenamides, etc.)
103 ..Cyanamides (i.e., compounds containing cyano bonded directly to amino nitrogen)
104 ...Cyanoguanidines (i.e., HNH-C(=NH)-HNH, wherein -CN is substituted for one of the hydrogens and substitution may be made for the remaining hydrogens only)
105 ...Benzene ring containing
106 ...Acyclic
107 ..Nitramines (i.e., compounds containing nitro bonded directly to amino nitrogen)
108 ...Containing nitrogen double bonded directly to carbon (e.g., nitroguanidines, etc.)
109 ...Acyclic
110 ....Containing nitro bonded directly to carbon (i.e., plural nitro groups containing)
111 .....Hydroxy, bonded directly to carbon, or ether containing (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
112 ..Nitrosamines (i.e., compounds containing nitroso bonded directly to amino nitrogen)
113 ...Acyclic
114 ..Haloamines (i.e., compounds containing halogen attached directly to amino nitrogen by nonionic bonding)
115 ...Containing nitrogen double bonded directly to carbon
116 ....Amidine containing (i.e., containing -C(=N)-HNH, wherein substitution may be made for hydrogen only)
117 ...Alicyclic ring containing
118 ...Acyclic

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.AMINO NITROGEN CONTAINING (E.G., UREA, SULFONAMIDES, NITROSAMINES, OXYAMINES, ETC., AND SALTS THEREOF)
..Haloamines (i.e., compounds containing halogen attached directly to amino nitrogen by nonionic bonding)
...Acyclic
119 ....Hydroxy, bonded directly to carbon, or ether containing (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
120 ....Carbon to carbon unsaturation containing
121 ....Plural difluoramine groups containing
122 .....Plural difluoramine groups bonded directly to the same carbon
123 ..Carboxamides (i.e., Q-CO-HNH, wherein Q is a substituent having carbon bonded directly to the carbonyl or is hydrogen and wherein any substituent replacing one or both hydrogens shown will be referred to as E)
124 ...Preparing directly from cyano containing compound
125 ....From HCN or cyanogen
126 ....Catalytic hydration only of nitrile
127 .....Copper containing catalyst utilized
128 .....Of acrylonitriles
129 ....Acid hydrolysis only of nitrile
130 ....From acyclic nitrile
131 .....Which contains carbon to carbon unsaturation
132 ...Preparing directly from carbon monoxide or carbon dioxide
133 ...Preparing directly by amidation of -C(=O)X group, where X is O- or halogen
134 ....Of carboxylic acid ester
135 .....Having acyclic acid moiety
136 ......Additional oxygen in the acid moiety
137 ......Lower fatty acid
138 ....Of carboxylic acid
139 .....Benzene ring containing
140 ......Hydroxy naphthoic
141 .....Lower fatty acid
142 ....Of carboxylic acid halide
143 .....Acyclic
144 ....Of acyclic carboxylic acid anhydride
145 ...Preparing directly by reacting sulfur or sulfur containing compound with ammonia; or directly from ammonium polysulfide
146 ...Preparing directly by nitration
147 ...Aminimine containing
148 ...Hydrazine containing
149 ....Substituent Q contains benzene ring
150 .....Hydroxy, bonded directly to carbon, or ether in substituent Q (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
151 ....Substituent Q is acyclic
152 ...Plural carboxamide groups containing or containing plural carbonyls bonded directly to the same nitrogen
153 ....Three or more carboxamide groups
154 ....Sulfur containing
155 ....Benzene ring containing
156 .....Two carboxamido carbonyls having benzene ring between the carbonyls and no carboxamido nitrogen between the carbonyls
157 .....Amino nitrogen, not bonded directly to carbonyl, containing
158 .....Hydroxy, bonded directly to carbon, or ether containing (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
159 ....Acyclic
160 .....Two carboxamido carbonyls having no carboxamido nitrogen between the carbonyls
161 ...Substituent Q contains benzene ring
162 ....Sulfur in substituent Q
163 ....Nitrogen in substituent Q
164 .....The substituent nitrogen is an amino nitrogen attached indirectly to a ring by acyclic nonionic bonding
165 ......Hydroxy, bonded directly to carbon, or ether in substituent Q (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
166 .....Nitro in substituent Q
167 .....Hydroxy, bonded directly to carbon, or ether in substituent Q (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
168 .....Ring in a substituent E
169 ....Carbonyl in substituent Q
170 ....Hydroxy, bonded directly to carbon, or ether in substituent Q (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
171 .....Plural rings in substituent Q
172 ......Polycyclo ring system in substituent Q
173 ....Q contains an ortho-hydroxy naphthyl bicyclo ring system, or its partially hydrogenated form, bonded directly to the carbonyl (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
174 ......Ring in a substituent E
175 .....Oxygen, bonded directly to the benzene ring, is part of an acyclic chain between the benzene ring and the carbonyl
176 .....Benzene ring bonded directly to the carbonyl
177 ......Hydroxy bonded directly to the benzene ring (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
178 ....Preparing directly by halogenation
179 ....Benzene ring in a substituent E
180 ....Polycyclo ring system in substituent Q
181 ....Two rings bonded directly to the same carbon in substituent Q
182 ....Substituent Q is monocyclic
183 .....The ring is bonded directly to the carbonyl
184 ......Benzene ring in a substituent E

ORGANIC COMPOUNDS (Class 532, Subclass 1)

.AMINO NITROGEN CONTAINING (E.G., UREA, SULFONAMIDES, NITROSAMINES, OXYAMINES, ETC., AND SALTS THEREOF)

..Carboxamides (i.e., Q-CO-HNH, wherein Q is a substituent having carbon bonded directly to the carbonyl or is hydrogen and wherein any substituent replacing one or both hydrogens shown will be referred to as E)

...Substituent Q contains benzene ring

....Substituent Q is monocyclic

.....The ring is bonded directly to the carbonyl

......Benzene ring in a substituent E

185 ....Ring or polycyclo ring system in substituent E is attached indirectly to the carboxamide nitrogen or to an amino nitrogen in substituent E by acyclic nonionic bonding

186 ......Oxygen in a substituent E

187 ......Acyclic carbon to carbon unsaturation in a substituent E

188 ...Plural alicyclic rings in substituent Q

189 ...Five-membered ring in substituent Q

190 ...Three-membered ring in substituent Q

191 ...Alicyclic ring and an atom other than oxygen, carbon, or hydrogen in substituent Q

192 ...Substituent Q is acyclic

193 ....Nitrogen in substituent Q

194 .....Benzene ring in a substituent E

195 ......Two rings bonded directly to the same carbon in a substituent E

196 ......A ring or polycyclo ring system in a substituent E is attached indirectly to the carboxamide nitrogen or to an amino nitrogen in substituent E by acyclic nonionic bonding

197 .....The compound is acyclic

198 ......The carboxamide nitrogen is unsubstituted

199 ....Carbonyl in substituent Q

200 .....Benzene ring in a substituent E

201 ....Hydroxy, bonded directly to carbon, or ether in substituent Q (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)

202 .....Benzene ring in a substituent E

203 .....Hydroxy, bonded directly to carbon, or ether in an acyclic substituent E (Hof -OH may be replaced by a substituted or unsubstututed ammonium ion or a Group IA or IIA light metal)

204 ....Carbon to carbon unsaturation in substituent Q

205 .....Process which includes forming the unsaturation

206 .....Purification or recovery

207 .....Benzene ring in a substituent E

208 .....Hydroxy, bonded directly to carbon, or ether in an acyclic substituent E (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)

209 ....Halogen, bonded directly to carbon, in substituent Q

210 .....Ring in a substituent E

211 ......Benzene ring in a substituent E

212 ....A ring or polycyclo ring system in a substituent E is attached indirectly to the carboxamide nitrogen or to an amino nitrogen in substituent E by acyclic nonionic bonding

213 ....Nitro and hydroxy, bonded directly to carbon, or ether in the substituent E (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)

214 ....The compound is monocyclic

215 ....Q is hydrogen or a lower saturated alkyl substituent

216 .....Purification or recovery

217 .....Ring in a substituent E

218 ......Benzene ring in a substituent E

219 ....A ring or polycyclo ring system in a substituent E is attached indirectly to the carboxamide nitrogen or to an amino nitrogen in substituent E by acyclic nonionic bonding

220 ....Amino nitrogen in the substituent E (i.e.,plural amino nitrogens containing)

221 ....Plural rings in a substituent E

222 ....Polycyclo ring system in a substituent E

223 ....Hydroxy, bonded directly to carbon, or ether in a substituent E (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)

224 .....Hydroxy, bonded directly to carbon, ether or nitrogen in a substituent E (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)

225 ..Amidines (i.e., HN=CH-HNH, wherein substition may be made for hydrogen only)

226 ...Amidino hydrazines or hydrazones (i.e., HNH-N=CH-HNH or HN=CH-NH-HNH, wherein substitution may be made for hydrogen only)

227 ....Guanyl hydrazines or hydrozones (i.e., HNH-N=C(-HNH)-HNH or HN=C(-HNH)-NH-HNH, wherein substitution may be made for hydrogen only)

228 .....Benzene ring containing

229 ...Amidoximes (i.e., HON=CH-HNH, wherein substitution may be made for hydrogen only)

230 ...Guanidines (i.e., HN=C(-HNH)-HNH, wherein substitution may be made for hydrogen only)

231 ....Preparing from thioureas

232 ....Preparing by reacting cyanogen halide with amino nitrogen containing compound

233 ....Biguanides (i.e., HN=C(-HNH)-NH-(HNH-)C=NH, wherein substitution may be made for hydrogen only)

234 .....Benzene ring containing

235 ......Plural rings containing

236 ....Polyguanidines

237 ....Benzene ring containing

238 .....Benzene ring bonded directly to guanidine nitrogen

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.AMINO NITROGEN CONTAINING (E.G., UREA, SULFONAMIDES, NITROSAMINES, OXYAMINES, ETC., AND SALTS THEREOF)
..Amidines (i.e., HN=CH-HNH, wherein substition may be made for hydrogen only)
...Guanidines (i.e., HN=C(-HNH)-HNH, wherein substitution may be made for hydrogen only)
....Benzene ring containing
.....Benzene ring bonded directly to guanidine nitrogen
239 ......Hydroxy, bonded directly to carbon, or ether containing (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
240 ....Acyclic
241 .....Guanidine per se or salt thereof
242 ......Guanidine nitrate
243 ...Polyamidines
244 ...Benzene ring containing
245 ....N(prime)-aryl formimidines (i.e., benzene-N=CH-HNH, wherein substitution may be made for hydrogen, including those bonded directly to the benzene ring only)
246 ....Additional nitrogen attached indirectly to amidine nitrogen by nonionic bonding
247 ....Hydroxy, bonded directly to carbon, or ether containing (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
248 ..Containing nitrogen double bonded directly to carbon
249 ...Azines (i.e., HCH=N-N=HCH, wherein substitution may be made for hydrogen)
250 ...Hydrazones (i.e., HCH=N-HNH, wherein substitution may be made for hydrogen only)
251 ....Benzene ring containing
252 ...Carbodiimides (i.e., HN=C=NH, wherein substitution may be made for hydrogen only)
253 ...Oximes (HCH=N-OH, i.e., wherein substitution may be made for hydrogen only)
254 ....O-esters (i.e., H of oxime -OH replaced by ester forming group)
255 .....O-carbamoyl
256 ....O-ethers (i.e., H of oxime -OH replaced by ether forming group)
257 .....Polycyclo ring system
258 ....Oxygen double bonded, or hydroxy or ether oxygen bonded directly to an alpha carbon (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group Ia or IIA light metal)
259 ....Preparing directly by reacting carbonyl with hydroxylamine or salt thereof
260 ....Preparing directly by reducing nitronic acid salt
261 ....Preparing directly by reducing nitro group
262 ....Preparing directly by oxidizing a hydroxyl amine
263 ....Preparing directly by nitrosation of olefin
264 ....Purification or recovery
265 ....Benzene ring containing
266 .....The oxime carbon is acyclic and has two rings bonded directly thereto
267 ....Six-membered alicyclic ring double bonded directly to the oxime nitrogen
268 ....Acyclic
269 ...Nitrogen double bonded and two rings bonded directly to the same acyclic carbon (e.g., auramines, etc.)
270 ...Polycyclo ring system
271 ...Aldimines or ketimines which contain benzene ring (i.e., HCH=NH, wherein substitution may be made for hydrogen only but a hydrogen or carbon must be bonded directly to the carbon)
272 ....Benzylidene imines (i.e., Q-benzene-CH=NH, wherein Q is a substituent or hydrogen and substitution may be made for hydrogen only)
273 .....Substituent Q contains nitrogen bonded directly to carbon
274 .....Substituent Q contains hydroxy, bonded directly to carbon, or ether (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
275 .....Q is hydrogen only
276 ....Hydroxy, bonded diretly to carbon, or ether containing (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
277 ....Unsubstituted phenyl bonded directly to the aldimine or ketimine nitrogen
278 ...Aldimines or ketimines which are acyclic
279 ....Carbon to carbon unsaturation containing
280 ..Phenol or thiophenol addition salts
281 ..Quaternary ammonium containing
282 ...Benzene ring containing
283 ....Two rings bonded directly to the same carbon
284 ....Nitro or nitroso, bonded directly to carbon containing
285 ....Hydroxy, bonded directly to carbon, or ether containing (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
286 .....Polyquaternary ammonium
287 .....The hydroxy or ether oxygen is bonded directly to a ring
288 ....Acyclic carbon to carbon unsaturation containing
289 ....Halogen attached indirectly to the ammonium nitrogen by nonionic bonding
290 ....Polyquaternary ammonium
291 ...Acyclic
292 ....Hydroxy, bonded directly to carbon, or ether containing (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
293 .....Choline, beta-alkylcholines, ethers thereof, and salts thereof
294 .....Polyoxyalkylene
295 ....Polyquaternary ammonium
296 ....Processes
297 ..Amine oxides
298 ...Processes
299 ...Benzene ring containing

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.AMINO NITROGEN CONTAINING (E.G., UREA, SULFONAMIDES, NITROSAMINES, OXYAMINES, ETC., AND SALTS THEREOF)
300 ..Nitroxides, oxyamines or hydroxylamines (i.e., HNH-O or HNH-OH, wherein substitution may be made for hydrogen only, including O-ether and O-ester derivatives)
301 ...Acyclic
302 ..Racemization per se or with resolution of optical isomers
303 ..Resolution per se of optical isomers
304 ...Of benzene ring containing compounds
305 ..Benzene ring containing
306 ...Alicyclic ring or ring system, having plural amino nitrogens attached directly or indirectly thereto by acyclic nonionic bonding, attached indirectly to an aryl ring or ring system by acyclic nonionic bonding
307 ...Amino nitrogen and a ring bonded directly to the same ring, and any other amino nitrogen in the compound is bonded directly to one of the rings
308 ....Polycyclo ring system
309 ....Benzidines
310 ...Hydrazines
311 ....Symmetrical diaryl hydrazines
312 .....Preparing directly by reducing nitrogen containing group with metal and metallic hydroxide
313 ....Aralkyl hydrazines
314 ....Processes
315 ...Two aryl rings or ring systems bonded directly to the same carbon
316 ....Amino nitrogen attached to the carbon by an acyclic carbon or chain
317 .....Oxygen or sulfur is bonded directly to the carbon and is part of the chain
318 ......Processes
319 .....Oxygen, carbonyl or carbon to carbon unsaturation in the chain; or ether, carbonyl, carbon to carbon unsaturation or hydroxy, bonded directly to carbon, is part of a substituent bonded directly to the acyclic carbon or chain (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
320 .....Hydroxy or ether oxygen bonded directly to the carbon (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
321 ....Amino nitrogen bonded directly to the carbon
322 ....The carbon is a ring member of an alicyclic ring or ring system
323 ....Amino nitrogen attached to aryl ring or ring system by an acyclic carbon or chain
324 .....Oxygen or sulfur is bonded directly to the aryl ring or ring system and is part of the chain
325 ......Additional similar chain
326 .....Amino nitrogen is bonded directly to the aryl ring or ring system and is part of the chain
327 ....Benzhydrols or benzthiols (i.e., -OH or -SH bonded directly to the carbon)
328 ....Benzophenones or benzothiophenones (i.e., the carbon is part of a carbonyl or thiocarbonyl)
329 .....Processes
330 ....Diamino diphenyl methanes (i.e., two phenyls, each having amino nitrogen bonded directly thereto, bonded directly to the carbon)
331 .....Preparing by reacting carbonyl containing compound with amino nitrogen containing compound
332 ......Solid catalyst utilized
333 ......Hydrochloric acid utilized
334 .....Purification or recovery
335 .....Halogen or sulfur attached directly or indirectly to the carbon by nonionic bonding
336 ...Amino nitrogen attached to aryl ring or ring system by an acyclic carbon or chain
337 ....The aryl ring or ring system is bonded directly to another ring
338 .....The other ring is alicyclic
339 ......Double bonded oxygen, ether or hydroxy, bonded directly to carbon, is attached directly or indirectly to the alicyclic ring by acyclic nonionic bonding (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
340 ....Sulfur is part of the chain or is attached directly or indirectly to the acyclic carbon or chain by acyclic nonionic bonding with no amino nitrogen between the sulfur and the aryl ring or ring system
341 .....The sulfur is bonded directly to the aryl ring or ring system
342 ....Carbonyl is part of the chain or is attached directly or indirectly to the acyclic carbon or chain by acyclic nonionic bonding with no amino nitrogen between the sulfur and the aryl ring or ring system
343 .....Processes
344 .....Hydroxy or ether oxygen bonded directly to the aryl ring or ring system
345 .....Halogen bonded directly to the aryl ring or ring system
346 ....Ether oxygen is part of the chain
347 .....The ether oxygen is bonded directly to the aryl ring or ring system
348 ......Hydroxy, bonded directly to carbon, or ether oxygen is attached directly or indirectly to the chain by acyclic nonionic bonding with no amino nitrogen between the hydroxy or attached ether oxygen and the aryl ring or ring system (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
349 ....Alkanol group only between the amino nitrogen and the ether oxygen which is bonded directly to the aryl ring or ring system (i.e., aryloxy alkanol amines)
350 ....Nitrogen bonded directly to the aryl ring or ring system
351 ....Halogen bonded directly to the aryl ring oring system
352 ......The aryl ring or ring system is polycyclo

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.AMINO NITROGEN CONTAINING (E.G., UREA, SULFONAMIDES, NITROSAMINES, OXYAMINES, ETC., AND SALTS THEREOF)
..Benzene ring containing
...Amino nitrogen attached to aryl ring or ring system by an acyclic carbon or chain
....Ether oxygen is part of the chain
.....The ether oxygen is bonded directly to the aryl ring or ring system
353 ......Hydrogen or acyclic hydrocarbyl substituents only bonded directly to the part of the chain between the ether oxygen and amino nitrogen
354 ....The part of the chain between the ether oxygen and amino nitrogen consists of two unsubstituted saturated carbons
355 ....Hydroxy, bonded directly to carbon, or ether oxygen attached directly or indirectly to the acyclic carbon or chain by acyclic nonionic bonding with no amino nitrogen between the hydroxy or ether oxygen and the aryl ring or ring system (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
356 .....Preparing directly by reduction, other than by reductive amination
357 ......By direct hydrogenation
358 ....Group VIII noble metal containing catalyst utilized
359 .....Preparing directly by hydrolysis
360 .....Additional hydroxy, bonded directly to carbon, or ether oxygen attached directly or indirectly to the acyclic carbon or chain by acyclic nonionic bonding with no amino nitrogen between the additional droxy or ether oxygen and the aryl ring or ring system (H Of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
361 .....Plural hydroxy groups bonded directly to the aryl ring or ring system (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
362 ......Four or more substituents on the aryl ring or ring system
363 .....Beta hydroxy phenethylamines (i.e., hydroxy and the benzene ring are bonded directly to the same carbon of the chain which consists of two carbons; H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
364 ......Acyclic hydrocarbyl alpha substituent
365 ......Hydroxy or ether oxygen bonded directly to the aryl ring or ring system (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
366 ....Halogen attached directly or indirectly to the acyclic carbon or chain by acyclic nonionic bonding with no amino nitrogen between the halogen and the aryl ring or ring system
367 ....The chain contains nitrogen between the aryl ring or ring system and amino nitrogen
368 .....Ethylene diamines
369 ......Mono ethylene diamines
370 ....Plural aryl rings, which are not part of the same polycyclo ring system, or ring systems containing
371 .....Methylene diamines
372 ....Additional amino nitrogen attached directly or indirectly to the acyclic carbon or chain by acyclic nonionic bonding
373 ....Alpha aralkyl benzyl amines
374 ....The chain consists of two or more carbons which are unsubstituted or have acyclic hydrocarbyl substituents only
375 .....Forming amine group directly by reduction, other than by reductive amination
376 .....Forming directly by amination which replaces halogen
377 .....Preparing directly by hydrolysis
378 .....The aryl ring or ring system is polycyclo
379 ......Tricyclo ring system
380 ....The chain contains carbon to carbon unsaturation
381 .....Phenethylamines having alpha alkyl substituent
382 .....Phenethylamines having beta alkyl substituent
383 .....The chain contains carbon to carbon unsaturation
384 ....The aryl ring or ring system and amino nitrogen are bonded directly to the same acyclic carbon, which carbon additionally has only hydrogen or acyclic hydrocarbyl substituents bonded directly thereto
385 .....Forming amine group directly by reduction, other than by reductive amination
386 .....Forming directly by amination which replaces halogen or forming amine group directly by hydrolysis
387 .....The aryl ring or ring system is polycyclo
388 .....Plural amino methylene groups bonded directly to the same benzene ring
389 .....Benzyl amines having hydroxy or ether oxygen bonded directly to the benzene ring (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
390 ......Ortho hydroxy benzyl amines
391 .....Benzyl amines wherein the benzene ring has no other substituents
392 ......Acyclic hydrocarbyl group bonded directly to the methylene carbon
393 ...Preparing directly from ester other than by reduction of nitrile
394 ...Preparing directly from organic acid, acid halide or salt
395 ...Preparing directly by amination
396 ....Of carbonyl containing compound
397 .....By reductive amination

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.AMINO NITROGEN CONTAINING (E.G., UREA, SULFONAMIDES, NITROSAMINES, OXYAMINES, ETC., AND SALTS THEREOF)
..Benzene ring containing
...Preparing directly by amination
....Of carbonyl containing compound
.....By reductive amination
398 ......Group VIII noble metal containing catalyst utilized
399 ....Of ether or alkylene oxide
400 ....Of halohydrin
401 ....Of acyclic hydroxy containing compound
402 ....By replacing hydroxy
403 .....In compound having plural hydroxys bonded directly to benzene ring
404 ....Of halogen containing compound
405 .....Which also contains benzene ring
406 ......And nitro
407 ......Preparing primary amines
408 ....Of hydrocarbon
409 ...Preparing directly by ring alkylation or dealkylaton
410 ...Preparing directly by nitrosation
411 ...Preparing directly by nitration
412 ...Preparing of halogen containing compound directly by halogenation or dehalogenation
413 ...Preparing directly from hetero ring containing compound
414 ...Preparing directly from an amide (e.g., preparing directly from a sulfenamide, nitrosamine, carboxamide, thiourea, etc.)
415 ...Forming amine group directly by reduction
416 ....Of nitro or nitroso
417 .....Preparing compound which contains halogen bonded directly to carbon
418 .....Preparing compound which contains hydroxy, bonded directly to carbon, or ether
419 .....With initial nitration step
420 .....By direct hydrogenation
421 ......Group VI metal containing catalyst utilized
422 ......Group VIII metal containing catalyst utilized
423 ....Group VIII noble metal containing catalyst utilized
424 ...Separating isomers
425 ....By salt formation
426 ...Polycyclo ring system
427 ....Tricyclo ring system
428 ....Bicyclo ring system
429 .....Naphthyl ring system and benzene ring bonded directly to the same nitrogen
430 ...Two benzene rings bonded directly to the same oxygen, sulfur, or polysulfide chain
431 ...Two carbocyclic rings, at least one of which is benzene, bonded directly to the same nitrogen
432 ....Condensation products and processes of acyclic ketone and compound which contains two benzene rings bonded directly to the same nitrogen
433 ....Two benzene rings bonded directly to the same nitrogen
434 .....Additional amino nitrogen containing
435 .....Preparing directly by condensing a primary amine
437 ...Purification or recovery
438 ....By salt formation
439 ....Of compound having amino nitrogen and hydroxy bonded directly to the benzene ring (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
440 ...Sulfur attached indirectly to the amino nitrogen by nonionic bonding
441 ...Nitro or nitroso, bonded directly to carbon, containing
442 ...Halogen, bonded directly to carbon, containing
443 ...Hydroxy, bonded directly to carbon, or ether containing (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
444 ..Preparing alicyclic ring containing compound directly by isomerization
445 ..Preparing alicyclic ring containing compound directly by amination
446 ...Of aldehyde or ketone containing compound
447 ...Of hydroxy containing compound
448 ..Forming amine group of alicyclic ring containing compound directly by reduction
449 ...Including hydrogenating benzene ring
450 ..Preparing alicyclic ring containing compound directly by hydrogenating benzene ring
451 ...Plural amino nitrogens containing
452 ..Plural alicyclic rings, which are not part of the same polycyclo ring system, or ring systems bonded directly to the same carbon
453 ..Alicyclic ring or ring system and amino nitrogen are attached indirectly by an acyclic carbon or chain
454 ...The chain consists of two or more carbons which are unsubstituted or have acyclic hydrocarbyl substituents only
455 ...The alicyclic ring and amino nitrogen are bonded directly to the same acyclic carbon, which carbon additionally has only hydrogen or acyclic hydrocarbyl substituents bonded directly thereto
456 ....Polycyclo ring system
457 ..Plural alicyclic rings
458 ...Polycyclo ring system
459 ....Tricyclo ring system
460 ....Bicyclo ring system
461 ..Alicyclic ring and plural amino nitrogens containing
462 ..Cyclohexyl ring containing
463 ..Acyclic
464 ...Aminimine or hydrazine containing
465 ....Preparing directly by reducing a nitrosamine
466 ....Preparing directly by condensing a haloamine
467 ...Preparing directly utilizing carbon monoxide
468 ...Preparing directly from ester, organic acid or salt, other than by reduction of nitrile
469 ...Preparing directly by amination
470 ....By transamination
471 ....Of aldehyde or ketone containing compound
472 .....By reductive amination
473 ......Of aldehyde containing compound
474 ....Of ether containing compound
475 .....Of an alkylene oxide

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.AMINO NITROGEN CONTAINING (E.G., UREA, SULFONAMIDES, NITROSAMINES, OXYAMINES, ETC., AND SALTS THEREOF)
..Acyclic
...Preparing directly by amination
....Of ether containing compound
.....Of an alkylene oxide
476 ......Of an epihalohydrin
477 ......Producing monohydroxy alkyl amines
478 ....Of hydroxy containing compound
479 .....Catalyst utilized
480 ......Group VI or VIII metal containing catalyst utilized
481 ....Of halogen containing compound
482 .....Of an alkylene dihalide
483 .....Of compound which contains an atom other than carbon, hydrogen, and halogen
484 .....Of compound which contains carbon to carbon unsaturation
485 ....Of compound which contains carbon to carbon unsaturation
486 ...Preparing directly by dealkylation
487 ...Preparing directly from hetero ring containing compound
488 ...Preparing directly from an amide (e.g., preparing directly from a carboxamide, etc.)
489 ...Forming amine group directly by reduction
490 ....Of cyano
491 .....Of plural cyanos
492 ......Preparing hexamethylene diamine
493 .....Preparing a primary monoamine
494 ....Of nitro or nitroso
495 .....The nitro or nitroso is in a compound which contains hydroxy, bonded directly to carbon, or ether
496 ...Preparing directly by halogenation
497 ...Purification or recovery
498 ....Of an alkylene polyamine
499 ....Separating primary, secondary, or tertiary amines from each other
500 ...Sulfur attached indirectly to the amino nitrogen by nonionic bonding
501 ....Thioether containing
502 ...Aldehyde or ketone containing
503 ...Hydroxy, bonded directly to carbon, or ether containing (H of -Oh may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
504 ....Polyether
505 .....Polyoxyalkylene
506 ....Polyhydroxy (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
507 .....Plural hydroxys in the same substituent on the amino nitrogen (H of -OH may be replaced by a substituted or unsubstituted ammonium ion or a Group IA or IIA light metal)
508 ....Monoether
509 ...Carbon to carbon unsaturation containing
510 ...Halogen, bonded directly to carbon, containing
511 ...Plural amino nitrogens containing
512 ....Three or more amino nitrogens containing

CLASS 568 PART OF THE CLASS 532-570 SERIES -- ORGANIC COMPOUNDS

DECEMBER 1990

IN THIS SERIES OF CLASSES, CLASS 568 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (Class 532, Subclass 1)
1 .BORON CONTAINING
2 ..Phosphorus containing
3 ..Plural borons containing
4 ...Ten or more borons containing (e.g., decaborane, etc.)
5 ....Sulfur, oxygen, halogen or Group IA or IIA light metal containing
6 ..Sulfur, oxygen, halogen or Group IA or IIA light metal containing
7 ..Tri-acyclic-hydrocarbyl boron
8 .PHOSPHORUS CONTAINING
9 ..Phosphonium derivative
10 ...Plural phosphori containing
11 ...Sulfur or oxygen containing
12 ..Ring phosphorus containing
13 ..Sulfur or oxygen containing
14 ...Sulfur or oxygen bonded directly to phosphorus
15 ....And sulfur or oxygen bonded indirectly to phosphorus
16 ..Halogen containing
17 ..Benzene ring containing
18 .SULFUR CONTAINING
19 ..With preservative or stabilizer
20 ..Thiocarbonyl containing (e.g., thioketone containing, etc.)
21 ..Sulfur bonded directly to sulfur (e.g., disulfides, etc.)
22 ...Oxygen containing
23 ....Sulfur or oxygen bonded directly to a ring
24 ...Halogen containing
25 ...Benzene ring containing
26 ...Preparing by reacting a thiol or mercaptide (i.e., reactant contains -SH or -SM where M is a Group IA or IIA light metal)
27 ..Oxygen bonded directly to sulfur (e.g., sulfoxides, etc.)
28 ...Plural oxygens bonded directly to the same sulfur (e.g., sulfones, etc.)
29 ....Thiol or thioether containing
30 ....Nitrogen containing
31 ....Carbonyl containing (e.g., ketone containing, etc.)
32 ....Oxy containing
33 .....Oxy bonded directly to a ring
34 ....Plural rings containing
35 ....Plural halogens containing
36 ...Nitrogen or plural sulfurs containing
37 ...Carbonyl or oxy containing (e.g., ketone containing, etc.)
38 ..Thioethers
39 ...Oxygen containing
40 ....Group IA or IIA light metal containing
41 ....Carbonyl containing (e.g., aldehyde containing, etc.)
42 .....Ketone containing
43 ......Oxy or halogen containing
44 ....Nitrogen containing
45 ....Plural oxygens containing
46 .....Polyhydroxy
47 ......Plural rings containing
48 ....Plural rings bonded directly to the same sulfur
49 .....Plural rings containing
50 .....Thiol or plural thioethers containing
51 ....Oxygen bonded directly to a ring
52 .....Plural rings containing
53 ......Plural rings bonded directly to the same sulfur
54 .....Sulfur bonded directly to a ring
55 ....Hydroxy containing
56 ...Halogen containing
57 ...Thiol or plural thioethers containing
58 ...Plural rings containing
59 ...Acyclic
60 ....Symmetrical (e.g., dimethyl sulfide, etc.)
61 ..Thiol or mercaptide containing (i.e., -SH or -SM containing where M is a Group IA or IIA light metal)
62 ...Oxygen containing
63 ....Carbonyl containing (e.g., ketone containing, etc.)
64 .....Oxygen bonded directly to a ring
65 ...Halogen containing
66 ...Polythiol
67 ...Benzene ring containing
68 ....Preparing by utilizing halogen, heavy metal, or aluminum containing material
69 ...Acyclic
70 ....Preparing by reacting hydrogen sulfide or a metal hydrosulfide
71 .....And an organic hydroxy containing reactant (H of -OH may be replaced by a Group IA or IIA light metal)
72 .....And a reactant having carbon to carbon unsaturation
73 ......Boron, phosphorus, or silicon containing material utilized
74 ..Halogen containing
75 ..Oxygen containing
76 ...Nitro or nitroso containing
77 ..Ring containing
300 .OXYGEN CONTAINING (E.G., PERCHLORYLBENZENE, ETC.)
301 ..Ketenes (e.g., halogenated ketenes, etc.)
302 ...Ketene per se (i.e., HCH=C=O)
303 ..Ketones
304 ...With preservative or stabilizer
305 ...Nitrogen containing
306 ...Benzene ring containing
307 ....Acyclic
308 ...Benzene ring containing
309 ....Processes
310 .....Isomerization
311 .....Carbon monoxide or peroxy containing reactant
312 .....Aldehyde or ketone reactant
313 ......Aldehyde reacted with ketone
314 ......Reactant contains -COO- group
315 ......Oxy containing reactant
316 ......Halogen containing reactant
317 ......Alicyclic unsaturated or acyclic unsaturated hydrocarbon reactant
318 ......Gaseous hydrogen reactant or Group IA or IIA light metal containing material utilized
319 .....Reactant contains -COO- group
320 .....Oxidation of organic compound utilizing gaseous oxygen
321 ......Plural rings in ketone prepared
322 .....Oxy containing reactant
323 .....Halogen containing reactant (e.g., dehydrohalogenation, etc.)
324 .....Purification or recovery
325 ....Plural rings containing
326 .....Polycyclo ring system

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.OXYGEN CONTAINING (E.G., PERCHLORYLBENZENE, ETC.)
..Ketones
...Benzene ring containing
....Plural rings containing
.....Polycyclo ring system
327 ......Bicyclo ring system
328 ....Naphthyl ring system
329 .....Alicyclic ring containing
330 ......Five-membered alicyclic ring
331 .....Carbonyl bonded directly to benzene ring
332 ......Two benzene rings bonded directly to the same carbonyl (i.e., benzophenones)
333 ....Oxy containing
334 ......Chalcones
335 ....Carbonyl bonded directly to benzene ring (i.e., acetophenones)
336 .....Oxy containing
337 ......Oxy bonded directly to benzene ring
338 ...Processes of preparing, purifying, or recovering alicyclic ring containing ketones
339 ....Camphor per se or salt thereof
340 .....Purification or recovery
341 ....Isomerization
342 ....Carbon monoxide or peroxy containing reactant
343 ....Aldehyde or ketone reactant
344 .....Oxidation utilizing gaseous oxygen
345 .....Aldehyde reacted with ketone
346 .....Reactant contains -COO- group
347 .....Oxy containing reactant
348 .....Halogen containing reactant
349 .....Acyclic unsaturated hydrocarbon reactant
350 .....Gaseous hydrogen reactant or Group IA or IIA light metal containing material utilized
351 .....Nitrogen containing material utilized
352 .....Boron, phosphorus, or sulfur containing material utilized
353 .....Ketone reacted with ketone
354 ....Reactant contains -COO- group
355 .....Plural -COO- groups in the reactant
356 .....Carbon to carbon unsaturation in the reactant
357 ....Oxidation of organic compound utilizing gaseous oxygen
358 .....Plural stages each having oxidation
359 .....Boron containing material utilized
360 .....Heavy metal containing material utilized
361 ....Oxy containing reactant
362 .....Phenol containing reactant
363 .....Inorganic oxygen containing reactant
364 ....Halogen containing reactant
365 ....Unsaturated hydrocarbon reactant
366 ....Purification or recovery
367 ...Plural alicyclic rings containing
368 ....Polycyclo ring system
369 .....Tetracyclo ring system (e.g., homo steroids, etc.)
370 ......The tetracyclo ring system consists of two five-membered and two six-membered cyclos (e.g., B-nor-testosterone, etc.)
371 ....The six-membered rings are fused to each other (e.g., A-nor-progesterone, etc.)
372 ......The tetracyclo ring system consists of four six-membered cyclos (e.g., D-homo-androstane, etc.)
373 .....Tricyclo ring system
374 .....Bicyclo ring system
375 ...Containing alicyclic ring having at least seven members
376 ...Six-membered alicyclic ring containing
377 ....Unsaturation in the ring
378 .....2,6,6-Trialkylcyclohexenyl (e.g., vitamin A derivatives, etc.)
379 ...Five-membered alicyclic ring containing
380 ....Halogen containing
381 ...Four-membered alicyclic ring containing
382 ...Acyclic
383 ....Processes
384 .....Isomerization
385 .....Peroxy containing reactant
386 .....Ring containing reactant
387 .....Carbon monoxide reactant
388 .....Aldehyde or ketone reactant
389 ......Oxidation of organic compound utilizing gaseous oxygen
390 ......Aldehyde reacted with ketone
391 ......Oxy containing reactant
392 ....The oxy and the aldehyde or ketone are in the same reactant
393 ......Halogen containing reactant
394 ....The halogen and the aldehyde or ketone are in the same reactant
395 ......Acyclic unsaturated hydrocarbon reactant
396 ......Gaseous hydrogen reactant or Group IA or IIA light metal containing material utilized
397 .....Reactant contains -COO- group
398 ......Carbon to carbon unsaturation in the reactant
398.8 .....Oxidation of hydrocarbon mixtures
399 .....Oxidation of organic compound utilizing gaseous oxygen
400 ......Unsaturated acyclic hydrocarbon reactant
401 ....Ag, Au, Pd, Pt, Rh, Ir, Ru, or Os containing catalyst utilized
402 ......Hydroxy containing reactant
403 .....Oxy containing reactant
404 ......Phosphorus, sulfur, or halogen containing material utilized
405 ......Ether or polyhydroxy containing compound utilized
406 ......Aluminum or silicon containing material utilized
407 .....Halogen containing reactant
408 .....Carbon to carbon unsaturation in reactant
409 ......Acetylenic unsaturation in the reactant
410 .....Purification or recovery
411 ......Acetone or haloacetone purified or recovered
412 ....Plural carbonyls containing
413 .....Oxy containing
414 ....Oxy or peroxy containing
415 .....Carbon to carbon unsaturation containing
416 .....Halogen containing
417 ....Carbon to carbon unsaturation containing
418 .....Halogen containing
419 ....Halogen containing
420 ..Aldehydes
421 ...With preservative or stabilizer

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.OXYGEN CONTAINING (E.G., PERCHLORYLBENZENE, ETC.)
..Aldehydes
...With preservative or stabilizer
422 ....Formaldehyde with preservative or stabilizer
423 ...Nitrogen containing
424 ....Benzene ring containing
425 ...Benzene ring containing
426 ....Processes
427 .....Isomerization
428 .....Carbon monoxide reactant (e.g., carbonylation, etc.)
429 ......Hydroformylation by reacting ethylenically unsaturated compound, carbon monoxide and gaseous hydrogen
430 .....Ozone reactant or peroxy containing reactant
431 .....Oxidation of organic compound utilizing gaseous oxygen
432 ......Oxy containing aldehyde formed
433 .....Aldehyde reactant
434 ......Gaseous hydrogen reactant
435 .....Reactant contains -COO- group
436 .....Nitrogen containing material utilized
437 .....Halogen containing reactant
438 .....Purification or recovery
439 ....Polycyclo ring system
440 .....Bicyclo ring system
441 ......Oxy containing
442 ....Oxy containing
443 ...Preparing alicyclic ring containing aldehyde by isomerization
444 ...Preparing alicyclic ring containing aldehyde by hydroformylation by reacting ethylenically unsaturated compound, carbon monoxide, and gaseous hydrogen only
445 ...Polycyclo-alicyclic ring system
446 ...Unsaturated alicyclic ring containing
447 ....2,6,6-Trialkylcyclohexenyl (e.g., vitamin A derivatives, etc.)
448 ...Acyclic
449 ....Processes
450 .....Isomerization
451 .....Hydroformylation by reacting ethylenically unsaturated compound, carbon monoxide, and gaseous hydrogen
452 ......Dimer produced
453 ......Plural stages each having hydroformylation
454 ......Group VA element (N, P, As, Sb, or Bi) containing material utilized (e.g., arsenic containing ligand utilized, etc.)
455 ....Nitrogen containing material utilized
456 ......Metal or metal containing compound filtered, precipitated, or deposited
457 .....Formaldehyde polymer reactant
458 .....Aldehyde reactant
459 ......Carbon to carbon unsaturation in the aldehyde prepared
460 ....Oxy or -COO- containing reactant
461 ....Aldehyde reacted with aldehyde
462 ......Gaseous hydrogen reactant
463 ......Aldehyde reacted with aldehyde (e.g., aldol condensation, etc.)
464 ....Aldehyde reacted with diverse aldehyde
465 ......Oxy or -COO- containing reactant
466 ......Hydrogen halide or elemental halogen reactant
467 .....Acetylene reactant
468 ......Mercury containing catalyst utilized
469 .....Ozone reactant
469.9 .....Oxidation of hydrocarbon mixtures
470 .....Oxidation of organic compound utilizing gaseous oxygen
471 ......Organic hydroxy containing reactant
472 ....Methanol reactant
473 ....Silver containing catalyst utilized
474 ....Molybdenum containing catalyst utilized
475 ......Acyclic hydrocarbon reactant
476 ....Carbon to carbon unsaturation in the reactant and in the aldehyde prepared
477 ....Antimony or tin containing catalyst utilized
478 ....Ag, Au, Pd, Pt, Rh, Ir, Ru, or Os containing catalyst utilized
479 ....Molybdenum containing catalyst utilized
480 ....Catalyst contains phosphorus
481 ....Selenium or tellurium containing material utilized
482 ....Methane reactant
483 .....Hetero ring containing reactant
484 .....Reactant contains -COO- group
485 .....Oxy or peroxy containing reactant
486 ......Polyoxy containing reactant
487 ......Methanol or ethanol reactant
488 ......Halogen containing reactant
489 ......Ag, Au, Pd, Pt, Rh, Ir, Ru, or Os containing material utilized
490 .....Halogen containing reactant
491 .....Water utilized as reactant
492 .....Purification or recovery
493 ......Of formaldehyde per se
494 ....Plural carbonyls containing
495 ....Halogen containing
496 ....Oxy containing
497 .....Polyoxy
557 ..Oxonium (e.g., beryllium hydride etherate, etc.)
558 ..Peroxy bonded directly to carbon
559 ...With preservative or stabilizer
560 ...Halogen containing
561 ...Plural peroxy groups
562 ....Purification or recovery
563 ....Additional oxygen containing
564 ....Hydroperoxy containing
565 .....Preparing by oxidation utilizing gaseous oxygen
566 ...Plural carbonyl groups bonded directly to the peroxy group (e.g., acetyl peroxide, etc.)
567 ...Oxy containing
568 ...Hydroperoxy containing
569 ....Preparing by oxidation utilizing gaseous oxygen
570 .....Alicyclic hydroperoxide produced
571 .....Acyclic hydroperoxide produced
572 .....Pretreatment of material oxidized
573 .....Initiator, accelerator, or catalyst utilized
574 ......Metal containing
575 ....Heavy metal
576 ....Purification or recovery
577 ...Preparing by oxidation utilizing gaseous oxygen

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.OXYGEN CONTAINING (E.G., PERCHLORYLBENZENE, ETC.)
..Peroxy bonded directly to carbon
578 ...Preparing by reacting an organic hydroperoxide and an organic hydroxy containing compound (H of -OH may be replaced by a Group IA or IIA light metal)
579 ..Ethers
580 ...With preservative or stabilizer
581 ....Acyclic ether preserved or stabilized
582 .....Nitrogen containing preservative or stabilizer
583 ...Nitrogen containing
584 ....Ether oxygen bonded directly to benzene ring
585 .....Plural rings containing
586 ......Polyoxy
587 .....Polyoxy
588 .....Halogen containing
589 ....Acyclic
590 .....Plural oxygens bonded directly to the same carbon (e.g., acetals, ketals, orthoesters, orthocarbonates, etc.)
591 ...Plural oxygens bonded directly to the same carbon (e.g., acetals, ketals, orthoesters, orthocarbonates, etc.)
592 ....Benzene ring containing
593 .....Plural oxyalkylene groups bonded directly to each other
594 ....Acyclic
595 .....At least three oxygens bonded directly to the same carbon (e.g., orthoesters, etc.)
596 .....Carbon to carbon unsaturation containing
597 ......Acetylenic unsaturation
598 ......At least three oxygens containing
599 .....One of the plural oxygens is in a hydroxy group (i.e., hemiacetals and hemiketals, wherein H of -OH may be replaced by a Group IA or IIA light metal)
600 .....At least three oxygens containing
601 ......Plural oxyalkylene groups bonded directly to each other
602 ....Hydroxy bonded directly to each end of a chain which is polyoxymethylene only (e.g., paraformaldehyde, etc., wherein H of -OH may be replaced by a Group IA or IIA light metal)
603 ......Plural acetal or ketal groups (e.g., tetraacetals, etc.)
604 .....Halogen containing
605 .....Ion exchange resin or sulfuric acid utilized
606 ...Plural oxyalkylene groups bonded directly to each other
607 ....Benzene ring containing
608 .....Ether oxygen bonded directly to a benzene ring
609 ......Plural rings containing
610 ......Halogen containing
611 .....Plural rings containing
612 ....Polycyclo alicyclic ring system
613 ....Acyclic
614 .....Halogen containing
615 ......Fluorine
616 .....Carbon to carbon unsaturation containing
617 .....Polytetramethylene glycols
618 .....Preparing from organic hydroxy containing compound (H of -OH may be replaced by a Group IA or IIA light metal)
619 ......From polyhydroxy containing compound
620 ....And cyclic ether
621 .....Purification or recovery
622 .....Hydroxy containing (H of -OH may be replaced by a Group IA or IIA light metal)
623 ......Polyhydroxy containing
624 ....Plural diverse oxyalkylene groups containing
625 ......Plural diverse oxyalkylene groups containing
626 ...Benzene ring containing
627 ....Preparing by isomerization
628 ....Preparing by alkylation of benzene ring
629 ....Preparing by hydroxylation of benzene ring
630 ....Ether oxygen bonded directly to benzene ring
631 .....Plural rings containing
632 ......Polycyclo ring system
633 ....Polyoxy
634 ....Halogen containing
635 ......Plural benzene rings bonded directly to the same oxygen
636 ....Polyoxy
637 ....Halogen containing
638 ....Hydroxy containing (H of -OH may be replaced by a Group IA or IIA light metal)
639 ....Halogen containing
640 ......Plural benzene rings bonded directly to the same carbon
641 ....Polyoxy and halogen containing
642 ......Plural benzene rings bonded directly to each other
643 ....Polyoxy
644 ......Polyoxy
645 ....Halogen containing
646 ....Acyclic carbon to carbon unsaturation containing
647 ......Halogen containing
648 .....Polyoxy
649 ......Halogen containing
650 ......Hydroxy bonded directly to the benzene ring (H of -OH may be replaced by a Group IA or IIA light metal)
651 ....Plural ether oxygens bonded directly to the benzene ring
652 ....Ether oxygen is ortho to the hydroxy
653 ....Guaiacol per se or salt thereof
654 ......Acyclic carbon to carbon unsaturation containing
655 .....Halogen containing
656 ......Halogen bonded directly to the benzene ring
657 .....Aryl-oxy-alkenyl or aryl-oxy-alkynyl
658 .....Acyclic hydrocarbyl group bonded directly to the benzene ring
659 ....Plural rings containing
660 .....Polyoxy
661 .....Halogen containing
662 ....Polyoxy
663 ....Halogen containing
664 ...Plural alicyclic rings containing
665 ....Polycyclo ring system
666 ...Alicyclic terpenic wherein the number of carbons is a multiple of five
667 ...Unsaturated alicyclic ring containing

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.OXYGEN CONTAINING (E.G., PERCHLORYLBENZENE, ETC.)
..Ethers
...Unsaturated alicyclic ring containing
668 ....2,6,6-trialkylcyclohexenyl (e.g., vitamin A derivatives, etc.)
669 ...Alicyclic ring and halogen containing
670 ...Alicyclic ring and polyoxy containing
671 ...Acyclic
672 ....Polyoxy
673 .....Carbon to carbon unsaturation containing
674 ......Halogen containing
675 ......Hydroxy containing (H of -OH may be replaced by a Group IA or IIA light metal)
676 .....Halogen containing
677 ......Fluorine
678 .....Hydroxy containing (H of -OH may be replaced by a Group IA or IIA light metal)
679 ......Polyether
680 ......Polyhydroxy
681 ....Halogen containing
682 .....Purification or recovery
683 .....Fluorine
684 ......Additional diverse halogen containing
685 ......Carbon to carbon unsaturation containing
686 .....Carbon to carbon unsaturation containing
687 ....Carbon to carbon unsaturation containing
688 .....Preparing by reacting an acyclic acetylenically unsaturated compound and an organic hydroxy containing compound (H of -OH may be replaced by a Group IA or IIA light metal)
689 .....Preparing by reacting an acyclic ethylenically unsaturated compound and an organic hydroxy containing compound (H of -OH may be replaced by a Group IA or IIA light metal)
690 ......Noble metal containing catalyst utilized
691 .....Preparing from an acetal or ketal
692 .....Preparing by dehydrohalogenation
693 .....Purification or recovery
694 ....Preparing by hydration of an olefin
695 .....Metal containing catalyst utilized
696 .....Sulfuric acid utilized
697 ....Preparing by reacting an olefin and an organic hydroxy containing compound (H of -OH may be replaced by a Group IA or IIA light metal)
698 ....Preparing by dehydration of an organic hydroxy containing compound (H of -OH may be replaced by a Group IA or IIA light metal)
699 ....Purification or recovery
700 ..Hydroxy containing (H of -OH may be replaced by a Group IA or IIA light metal)
701 ...With preservative or stabilizer
702 ....Benzene ring containing compound preserved
703 .....Acyclic polycarbon hydrocarbyl group bonded directly to the benzene ring
704 ...Nitrogen containing
705 ....Benzene ring containing
706 .....Phenols (H of -OH may be replaced by a Group IA or IIA light metal)
707 ......Plural rings containing
708 ......Purification or recovery
709 ......Halogen containing
710 ......Polynitro
711 ....Dinitro
712 ....Polyhydroxy nitro containing
713 ....Halogen containing
714 ...Hydrophenanthrene containing
715 ...Benzene ring containing
716 ....Phenols (H of -OH may be replaced by a Group IA or IIA light metal)
717 .....Polyphenols
718 ......Three or more rings containing
719 ....Polycyclo ring system
720 ....Three or more phenols containing
721 ....Alicyclic ring containing
722 ......Two phenols bonded directly to the same carbon
723 ....Identical phenols
724 ....Purification or recovery
725 ....Halogen containing
726 ....Halogen containing
727 ....Preparing from a phenol and an aldehyde or ketone
728 ....Isopropylidene diphenol produced
729 ......Two phenols bonded directly to two different carbons of an acyclic chain
730 ......Two phenols bonded directly to each other
731 .....Additional ring containing
732 ......Polycyclo ring system
733 ....Tricyclo ring system
734 ....Bicyclo ring system
735 ....Naphthols
736 ....Acyclic hydrocarbyl group bonded directly to the bicyclo ring system
737 ....Halogen or polyhydroxy containing
738 ....Preparing from aryl sulfonate
739 ....Preparing from compound which includes halogen bonded directly to a benzene ring
740 ....Preparing by dehydrogenation
741 ....Preparing from peroxide or preparing by oxidation
742 ....Purification or recovery
743 ......The additional ring is six-membered
744 ....The additional ring is benzene
745 ....Halogen containing
746 ....Rings bonded directly to each other
747 ....Rings bonded directly to each other
748 ....Purification or recovery
749 .....Purification or recovery
750 ......From mixture of phenols
751 ....Plural phenols recovered separately
752 ....Three or more phenols recovered
753 ......Of polyhydroxy phenol
754 ......Of phenol prepared by cleavage of hydroperoxide or other peroxide
755 ......Of halogen containing phenol
756 ......Of phenol having acyclic polycarbon hydrocarbyl group bonded directly to the benzene ring
757 ......Nitrogen or phosphorus containing compound utilized
758 ......Sorbent material utilized
759 ......From substance which includes sulfur or a sulfur containing compound
760 ......From ammoniacal liquor

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.OXYGEN CONTAINING (E.G., PERCHLORYLBENZENE, ETC.)
..Hydroxy containing (H of -OH may be replaced by a Group IA or IIA light metal)
...Benzene ring containing
....Phenols (H of -OH may be replaced by a Group IA or IIA light metal)
.....Purification or recovery
761 ......From oil or tar derived from fossil fuel or wood
762 ....Alkali metal hydroxide utilized
763 .....Polyhydroxy (H of -OH may be replaced by a Group IA or IIA light metal)
764 ......Hydroxymethyl group containing
765 ......Halogen containing
766 ......Acyclic polycarbon hydrocarbyl group bonded directly to the benzene group
767 ......Preparing from nitrogen containing compound
768 ......Preparing by cleavage of hydroperoxide or other peroxide
769 ......Preparing from aryl sulfonate
770 ......Preparing from compound which includes halogen bonded directly to a benzene ring
771 ......Preparing by oxidation
772 ......Preparing by reduction or dehydrogenation (e.g., by hydrogenation, etc.)
773 ......Preparing hydroquinones from an acetylene and carbon monoxide
774 .....Halogen containing
775 ......Fluorine or iodine
776 ......Three or more halogens bonded directly to the ring
777 ....Preparing by hydrolysis
778 ......Preparing by hydrolysis
779 ......Preparing by halogenation
780 .....Acyclic polycarbon hydrocarbyl group bonded directly to the benzene ring
781 ......Isopropyl or isopropenyl group
782 ....Preparing by reduction (e.g., by hydrogenation, etc.)
783 ......Preparing by isomerization
784 ......Tertiary butyl group
785 ....Preparing by catalytic alkylation
786 ....Silicon containing catalyst
787 ....Boron containing catalyst
788 ....Sulfur containing catalyst
789 ....Heavy metal or aluminum containing catalyst
790 ......Preparing by catalytic alkylation
791 ....Silicon containing catalyst
792 ....Boron containing catalyst
793 ....Sulfur containing catalyst
794 ....Heavy metal or aluminum containing catalyst
795 .....Preparing from aryl sulfonate
796 .....Preparing from compound which includes halogen bonded directly to a benzene ring
797 ......Catalyst utilized
798 .....Preparing by cleavage of hydroperoxide or other peroxide
799 .....Preparing by reduction or dehydrogenation (e.g., by hydrogenation, etc.)
800 .....Preparing by oxidation
801 ......Of compound which contains a benzene ring and a -COO- group
802 ......Molecular oxygen utilized
803 ......Peroxide or peracid utilized
804 .....Preparing by methylation
805 .....Preparing by dealkylation
806 .....Preparing by pyrolysis (e.g., by cracking, etc.)
807 ....Additional ring containing
808 .....Polycyclo ring system
809 .....Plural benzene rings bonded directly to the same carbon
810 ....Purification or recovery
811 ....Polyhydroxy (H of -OH may be replaced by a Group IA or IIA light metal)
812 ....Halogen containing
813 ....Acyclic carbon to carbon unsaturation containing
814 ....Preparing by reduction (e.g., by hydrogenation, etc.)
815 ....Preparing from a peroxide or preparing by oxidation
816 ...Plural alicyclic rings containing
817 ....Polycyclo ring system
818 .....Adamantane ring system
819 .....Bicyclo ring system
820 ......The two cyclos share at least three ring carbons (i.e., bridged ring)
821 ...Containing alicyclic ring having at least seven members
822 ...Six-membered alicyclic ring containing
823 ....Unsaturation in the ring
824 .....2,6,6-trialkylcyclohexenyls (e.g., vitamin A, etc.)
825 .....Single hydroxy containing (H of -OH may be replaced by a Group IA or IIA light metal)
826 ......The hydroxy is attached indirectly to the ring
827 ....Terpineol
828 ....Carbon to carbon unsaturation in substituent
829 ....Menthols (H of -OH may be replaced by a Group IA or IIA light metal)
830 .....Preparing by reduction (e.g., by hydrogenation, etc.)
831 ....Methylol cyclohexane (H of -OH may be replaced by a Group IA or IIA light metal)
832 ....Hydroxy bonded directly to the ring (e.g., terpin hydrate, etc.) (H of -OH may be replaced by a Group IA or IIA light metal)
833 .....Cyclohexane polyol (e.g., inositol, etc.)
834 .....Polycarbon alkyl group containing
835 .....Cyclohexanol per se
836 ......Preparing by oxidation
837 ....Boron containing material utilized
838 ...Five-membered alicyclic ring containing
839 ...Four-membered alicyclic ring containing
840 ...Acyclic
841 ....Halogen containing
842 .....Fluorine containing
843 ......Carbon to carbon unsaturation containing
844 .....Polyhydroxy or polyhalogen (H of -OH may be replaced by a Group IA or IIA light metal)
845 ......Carbon to carbon unsaturation containing
846 ......Preparing from aldehyde or ketone
847 ......Preparing from alkenyl halide
848 ......Preparing from alkenol
849 .....Carbon to carbon unsaturation containing

	ORGANIC COMPOUNDS (Class 532, Subclass 1)
	.OXYGEN CONTAINING (E.G., PERCHLORYLBENZENE, ETC.)
	..Hydroxy containing (H of -OH may be replaced by a Group IA or IIA light metal)
	...Acyclic
	....Halogen containing
850	.....Preparing from ethylenically unsaturated compound
851	....Oxy bonded directly to a Group IA or IIA light metal)
852	....Polyhydroxy
853	.....Polyalkylol substituted alkane (e.g., pentaerythritol, trimethylolethane, ect.)
854	......Purification or recovery
855	.....Acetylenically unsaturated
856	......Purification or recovery
857	.....Ethylenically unsaturated
858	.....Preparing by alcoholysis, hydrolysis or saponification of an ester
859	.....Preparing by hydrolysis or saponification of alkyl polyhalide or halohydrin
860	.....Preparing by hydroxylation at point of ethylenic unsaturation
861	.....Preparing by reduction (e.g., by hydrogenation, etc.)
862	......Of aldehyde or ketone
863	.......Of polyhydroxy aldehyde or polyhydroxy ketone (e.g., of carbohydrate, glyceraldehyde, etc.)
864	......Of compound containing a -COO- group
865	......Of ether
866	.....Preparing from ether
867	......From alkylene oxide
868	.....Purification or recovery
869	......Of glycerol
870	.......Ion exchange or sorbent material utilized
871	......Of spent ethylene glycol from polyester production
872	......Ion exchange or sorbent material utilized
873	....Acetylenically unsaturated
874	.....Preparing from carbonyl containing compound
875	....Terpenic, wherein the number of carbons is a multiple of five (e.g., linalool, farnesol, etc.)
876	....Preparing from carbonyl containing compound
877	.....By alcoholysis, hydrolysis, or saponification of an ester
878	.....From aldehyde or ketone
879	......By reaction of aldehyde with olefin (i.e.,by Prins reaction)
880	......By reduction (e.g., by hydrogenation, etc.)
881	.......Catalyst utilized
882	........Including hydroformylation
883	.........Supported hydrogenation catalyst utilized
884	.....By reduction (e.g., by hydrogenation, etc.)
885	......Catalyst utilized
886	....Preparing by alcoholysis, hydrolysis, or saponification of ester of polybasic inorganic acid
887	.....Boric acid
888	.....Hydroxy compound produced has from one to six carbons
889	......Isopropanol
890	......Ethanol
891	....Preparing by hydrolysis of organic halide
892	.....Ethylenically unsaturated hydroxy compound produced
893	.....Including producing the organic halide reactant
894	.....Additional organic compound in reaction mixture
895	....Preparing by hydration of olefin
896	.....Supported catalyst utilized
897	.....Aluminum containing catalyst utilized
898	.....Phosphorus containing catalyst utilized
899	.....Sulfur containing catalyst utilized
900	.....Heavy metal containing catalyst
901	......Chromium, molybdenum, or tungsten
902	....Preparing from organic hydroxy containing reactant
902.2	.....By homologation (e.g., forming ethanol from methanol, etc.)
903	.....By reduction, dehydration, or cleavage
904	.....Olefin reacted with the hydroxy containing reactant (e.g., preparing by telomerization, etc.)
905	.....By condensation (e.g., by Guerbet reaction, etc.)
906	.....By isomerization
907	....Preparing from ether
908	.....Ethylenically unsaturated hydroxy compound produced
909	....Preparing by carbonylation (e.g., by hydroformylation, etc.)
909.5	....Ethylenic unsaturation containing
909.8	....Preparing from organic peroxide or organic ozonide
910	....Preparing by oxidation
910.5	.....Of hydrocarbon mixtures
911	.....Of metal containing compound
912	.....Boron containing catalyst utilized
913	....Purification or recovery
914	.....By reduction (e.g., by hydrogenation, etc.)
915	.....By oxidation
916	.....By dehydration
917	.....By sorption
918	.....By plural liquid phase separation
919	......Alkali metal containing compound in one phase
920	.....Alkali or alkaline earth metal containing compound utilized
921	......Alkali metal hydroxide
922	.....Heavy metal or aluminum containing compound utilized
923	.....By crystallization of hydroxy compound or by forming hydroxy containing addition compound
924	..Nitro containing (including aci forms)
925	...With preservative or stabilizer
926	...Nitronic acid or Group IA or IIA light metal containing (e.g., aci forms, etc.)
927	...Benzene ring containing
928	....Plural rings containing
929	.....Polycyclo ring system
930	......Polynitro
931	.....Polynitro
932	....Polynitro
933	.....Halogen containing
934	.....Single methyl and plural nitros only bonded directly to benzene ring (e.g., dinitrotoluene, etc.)
935	......Trinitrotoluene
936	....Halogen containing

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.OXYGEN CONTAINING (E.G., PERCHLORYLBENZENE, ETC.)
..Nitro containing (including aci forms)
...Benzene ring containing
....Halogen containing
937 .....Halogen bonded directly to benzene ring
938 ......Plural halogens bonded directly to benzene ring
939 ....Nitro bonded directly to benzene ring
940 .....Methyl bonded directly to benzene ring (e.g., nitroxylene, etc.)
941 ...Polycyclo-alicyclic ring system
942 ...Six-membered alicyclic ring containing
943 ...Acyclic
944 ....Polynitro
945 .....Halogen containing
946 ....Halogen containing
947 ....Nitroalkanes
948 .....Nitromethane
949 ..Nitroso containing
950 ..Processes of oxidizing nonaromatic hydrocarbons; or purification or recovery of the products of such processes
951 ...Peroxy containing material utilized
952 ...Nitrogen or silicon containing compound utilized
953 ...Plural stages each having oxidation
954 ...Liquid phase oxidation
955 ...Catalyst utilized
956 ....Heavy metal containing catalyst
957 .....Manganese containing catalyst
958 ...Purification or recovery
959 ..Oxidized hydrocarbons of undetermined structure

CLASS 570 PART OF THE CLASS 532-570 SERIES -- ORGANIC COMPOUNDS

DECEMBER 1990

IN THIS SERIES OF CLASSES, CLASS 570 IS TO BE CONSIDERED AS AN INTEGRAL PART OF CLASS 260 AND FOLLOWS THE SCHEDULE HIERARCHY, RETAINING ALL PERTINENT DEFINITIONS AND CLASS LINES OF CLASS 260.

ORGANIC COMPOUNDS (Class 532, Subclass 1)
101 .HALOGEN CONTAINING
102 ..With preservative or stabilizer
103 ...To prevent or reduce polymerization
104 ....Nitrogen bonded directly to oxygen in preservative or stabilizer
105 ....Oxygen single bonded directly to benzene ring in preservative or stabilizer
106 ....Sulfur containing preservative or stabilizer
107 ...Acetylenic unsaturation containing preservative or stabilizer
108 ....Hydroxy, bonded directly to carbon, or ether containing
109 ...Nitrogen containing hetero ring in preservative or stabilizer
110 ...Acyclic nitro containing preservative or stabilizer
111 ...Nitrogen other than as ammonia or the ammonium ion in preservative or stabilizer
112 ....Nitrile
113 ....Imine (e.g., hydrazone, oxime, etc.)
114 ...Oxygen containing hetero ring in preservative or stabilizer
115 ....Hetero ring containing plural ring oxygens
116 ....Oxirane ring
117 ...Carbonyl containing preservative or stabilizer
118 ...Hydroxy, bonded to carbon, or ether containing preservative or stabilizer
119 ....Phenolic
120 ...Sulfur containing preservative or stabilizer
121 ...Hydrocarbon, halocarbon or halohydrocarbon preservative or stabilizer
122 ....Acyclic carbon to carbon unsaturation containing
123 ..Fluorine containing
124 ...Product
125 ....Polymer of unsaturated compound
126 .....Fluorine is sole halogen
127 ....Benzene ring containing
128 .....Acyclic unsaturation containing
129 .....Plural carbocyclic rings containing
130 ....Plural carbocyclic rings containing
131 ....Carbocyclic ring contains six carbon atoms
132 ....Carbocyclic ring contains four carbon atoms
133 ....Carbocyclic ring contains three carbon atoms
134 ....Acyclic
135 .....Unsaturated
136 ......Fluorine is sole halogen
137 .....Bromine or iodine containing
138 ...Polymerization of unsaturated compound
139 ....With chain terminating agent (e.g., telogen, etc.)
140 ...From organic compound containing an element other than carbon, hydrogen, or halogen
141 ....Nitrogen containing
142 ....Oxygen containing
143 ...Preparing benzene ring containing compound
144 ....Haloalkyl containing compound
145 .....By substituting halogen for a different halogen in haloalkyl group
146 ....Forming the benzene ring
147 ....Substituting halogen for different halogen or hydrogen
148 ...Forming alicyclic ring from benzene ring
149 ...Forming alicyclic ring from acyclic compound
150 ...Preparing from elemental carbon, carbon oxide, or carbon disulfide
151 ...Isomerization
152 ...Decreasing molecular weight of polymer of indeterminate structure
153 ...Preparing unsaturated compound
154 ....From acetylenically unsaturated compound
155 ....By dehalogenation or dehydrohalogenation of adjacent carbon atoms in a compound
156 .....Catalyst utilized
157 ......Alkali or alkaline earth metal containing catalyst
158 ......Zinc containing catalyst
159 ....From methane or halomethane
160 ....Substituting fluorine for a different halogen
161 ...Utilizing halogen fluoride or a mixture of elemental fluorine and another elemental halogen
162 ...Utilizing a compound containing silicon and fluorine
163 ...Transhalogenation or disproportionation
164 ...By reacting with hydrogen fluoride
165 ....Catalyst utilized
166 .....Metal halide containing catalyst
167 ......Antimony halide containing catalyst
168 ......Transition metal halide containing catalyst
169 .....Metal oxide containing catalyst
170 ...Substituting halogen for a different halogen
171 ...Increasing the number of carbon atoms in the compound
172 ....Utilizing unsaturated compound
173 ...Decreasing the number of carbons in the compound (e.g., cracking, etc.)
174 ...Introducing bromine or iodine
175 ...Utilizing unsaturated compound
176 ...Replacing halogen with hydrogen
177 ...Purification or recovery
178 ....Including distillation
179 ....Solid sorbent utilized
180 ....Including extraction with organic liquid
181 ..Product
182 ...Benzene ring containing
183 ....Polycyclo ring system
184 ....Plural benzene rings bonded directly to the same acyclic carbon or attached by an acyclic carbon chain
185 ....Benzene ring and halogen bonded directly to the same acyclic carbon or attached by an acyclic carbon chain
186 ...Alicyclic ring containing
187 ....Polycyclo ring system
188 ....Plural rings containing

ORGANIC COMPOUNDS (Class 532, Subclass 1)
.HALOGEN CONTAINING
..Product
189 ...Acyclic carbon to carbon unsaturation containing
190 ..Processes of preparing, purifying, or recovering benzene ring containing compound
191 ...Preparing acyclic haloalkyl group containing compound
192 ....Halo, 1,1-diphenylethane or ring substituted derivative thereof prepared (e.g., DDT, etc.)
193 ....Having acyclic carbon to carbon unsaturation
194 ....Bonding haloalkyl group directly to benzene ring
195 .....Oxygen containing organic compound reactant
196 ....Halogenation of acyclic carbon
197 .....Catalyst utilized
198 ......Halogen containing catalyst
199 ...Bonding benzene rings to the same acyclic carbon or to an acyclic carbon chain
200 ...Preparing acyclic carbon to carbon unsaturation containing compound
201 ...Oxygen containing organic compound reactant
202 ...Isomerization
203 ...Oxyhalogenation
204 ...Dehalogenation or dehydrohalogenation
205 ....Of alicyclic ring to prepare benzene ring
206 ...Bonding halogen directly to benzene ring
207 ....Chlorination
208 .....Catalyst utilized
209 ......Sulfur containing catalyst
210 ......Metal halide containing catalyst
211 ...Purification or recovery
212 ..Forming alicyclic ring from benzene ring
213 ..Purification or recovery of 1,2,3,4,5,6 - hexachlorocyclohexane (i.e., benzene hexachloride)
214 ..Ring formation, ring expansion or contraction or bonding one alicyclic ring directly or indirectly to another alicyclic ring
215 ...Diels-Alder reaction
216 ..Processes of preparing, purifying, or recovering unsaturated compound
217 ...From carbon source other than hydrocarbon, halocarbon, or halohydrocarbon
218 ...Decreasing the number of carbon atoms in the compound
219 ...Plural diverse reactions in separate zones
220 ....Dehalogenation or dehydrohalogenation with halogenation in separate zones
221 .....Acetylene reactant
222 .....Including oxyhalogenation or oxidation with elemental oxygen
223 ....Including oxhalogenation or oxidation with elemental oxygen
224 ...Oxyhalogenation
225 ....Liquid medium or inorganic melt utilized
226 ...Dehydrohalogenation
227 ....Catalyst utilized
228 .....Catalyst in liquid phase
229 ....Including chemical reaction with by-product hydrogen halide
230 ...Dehalogenation or dehydrogenation
231 ...Addition reaction of free halogen or hydrogen halide to carbon to carbon unsaturation
232 ....To triple bond
233 .....To acetylene
234 ...Elemental halogen reactant
235 ...Metal halide reactant
236 ...Isomerization
237 ...Increasing the number of carbon atoms in the compound
238 ...Purification or recovery
239 ....Including contact with solid agent
240 ..Preparing from elemental carbon, inorganic carbide, carbon disulfide, or carbon oxide
241 ..Preparing utilizing plural diverse reactions in separate zones
242 ...Addition reaction of hydrogen chloride to carbon to carbon unsaturation with chlorination in separate zone
243 ..Preparing by oxyhalogenation
244 ...Liquid medium or inorganic melt utilized
245 ...Fixed bed catalyst utilized
246 ..Preparing by addition of elemental halogen, interhalogen compound, or hydrogen halide to carbon to carbon unsaturation
247 ...Catalyst or reaction directing agent utilized
248 ....Hydrogen halide reactant
249 .....Nonmetallic catalyst or reaction directing agent utilized
250 .....Catalyst or reaction directing agent containing or group VIII metal utilized
251 ...All reactants in vapor phase
252 ..Elemental halogen reactant
253 ...Catalyst or reacton directing agent utilized
254 ....Inorganic metal containing catalyst or reaction directing agent utilized
255 ...All reactants in vapor phase
256 ..Isomerization
257 ..Preparing by increasing the number of carbons in the compound
258 ..Preparing by reacting hydrogen halide with a compound which contains hydroxy bonding directly to carbon
259 ..Preparing by reacting ether with hydrogen halide
260 ..Preparing by halogen exchange
261 ..Halogen source is a compound other than hydrogen halide
262 ..Purification or recovery
263 ...Liquid-liquid extraction
264 ..Preservation or stabilization treatment

CLASS 585 CHEMISTRY, HYDROCARBONS

DECEMBER 1990

1 PRODUCT BLEND, E.G., COMPOSITION, ETC., OR BLENDING PROCESS PER SE
2 .With nonhydrocarbon additive
3 ..O containing
4 ...And N containing
5 ....Additive(s) aromatic
6 .Gaseous blend
6.3 .Fluent dielectric
6.6 ..Mineral oil-containing
7 .Component of indefinite molecular weight greater than 150
8 ..Reaction product of halogenated hydrocarbon
9 ..Wax
10 ..Polymer
11 ...Containing aromatic ring
12 ...Plural polymers or copolymer of specified olefins
13 ..Mineral oil (petroleum) fraction
14 .For fuel use only
15 HYDRATE OR PRODUCTION THEREOF
16 COMPOUND OR REACTION PRODUCT MIXTURE
17 .Polymer of indefinite molecular weight
18 ..Acyclic
19 ..Containing aromatic ring
20 .Alicyclic
21 ..Polycyclo, i.e., fused
22 ...Of differing carbon content, more than three or with bridge
23 ..Unsaturated ring
24 .Aromatic
25 ..Plural rings
26 ...Polycyclo, i.e., fused
27 ....Of differing carbon content or with bridge
240 PRODUCTION OF HYDROCARBON MIXTURE FROM REFUSE OR VEGETATION
241 .From synthetic resin or rubber
242 .From wood
250 ADDING HYDROGEN TO UNSATURATED BOND OF HYDROCARBON, I.E., HYDROGENATION
251 .With subsequent diverse conversion
252 ..Dehydrogenation
253 ..Isomerization
254 .With preliminary diverse conversion
255 ..Polymerization of olefins only
256 ..Molecular weight reduction
257 .By hydrogen transfer from other hydrocarbon
258 .Hydrocarbon is contaminant in desired hydrocarbon
259 ..Hydrogenation of diolefin or triple bond
260 ...Using catalyst or support of defined structure, surface area, or pore size
261 ...Using catalyst and additional nonmetal material
262 ...Using S or Group I or II transition metal-containing catalyst
263 .With temperature or concentration gradient in reactor or specified provision for heating, cooling, or reactor control
264 .With preliminary treatment of feed or plural separation procedures
265 .Plural hydrogenation stages
266 .Hydrocarbon is aromatic
267 ..Using alkaline metal material
268 ..To produce polycyclic
269 ..Using Group VIII metal-containing catalyst with additional nonhydrocarbon agent
270 ...Co, Fe, or Ni
271 .Partial
272 ..Hydrogen supplied by water or alcohol
273 ..Using Group VIII metal-containing catalyst
274 ...Co, Fe, or Ni
275 .Using transition metal-containing catalyst
276 ..Elemental Co, Fe, or Ni
277 ..Group VIII metal with additional nonhydrocarbon agent or complexed with hydrocarbon
300 PLURAL PARALLEL SYNTHESES
301 .Using same catalyst, solvent, inert heat carrier, or component thereof
302 .With blending of products from two parallel reactions
303 ..And passage to further reaction
304 .Diverse parallel syntheses
310 PLURAL SERIAL DIVERSE SYNTHESES
311 .One synthesis rehabilitates catalyst for other, e.g., by alkylation with ester, etc.
312 .Same catalyst, solvent, or component thereof used in both syntheses
313 ..Entire catalyst composition
314 .With hydrocarbon effluent stream splitting for recycle to different syntheses
315 .With hydrocarbon recycle from later to earlier synthesis
316 ..Earlier synthesis is condensation or alkyl transfer
317 .To produce alicyclic
318 ..Having unsaturated ring
319 .To produce aromatic
320 ..Polycyclic
321 ..Having plural side-chains
322 ..Including an aromatization step
323 ..Including an alkylation step
324 .To produce unsaturate
325 ..Having triple bond
326 ..Polyolefin
327 ...From O compound feed or intermediate
328 ..Including displacement from nonhydrocarbon by entire hydrocarbon molecule, e.g., growth reaction, etc.
329 ..Including polymerization of olefin
330 ...And a preliminary unsaturation step, e.g., cracking, dehydrogenation, etc.
331 .Including alkylation to produce branched-chain paraffin
332 ..And preliminary isomerization or polymerization
350 ALICYCLIC COMPOUND SYNTHESIS
351 .Carotene or derivative
352 .Adamantane or derivative
353 .By shift, opening, or removal of shared-carbon ring
354 ..Cyclopentadiene from its polymer
355 ..Camphene or ten-C monocyclic from polycyclic, e.g., terpene isomerization, etc.
356 ...Camphene from pinene or derivative
357 .From nonhydrocarbon
358 ..Nonring moiety becomes ring
359 ..Halogen containing
360 .Polycyclic product
361 ..By condensation, e.g., Diels-Alder reaction, etc.
362 ...Dimerizing a cycloolefin
363 ..By double-bond shift in side-chain
364 .By condensive ring expansion, e.g., "olefin dismutation", etc.
365 .From nonring hydrocarbon
366 ..Alkadiene
367 ...Using refractory-group metal-containing catalyst
368 ....With nonmetal element or compound
369 ...Using Co-, Fe-, or Ni-containing catalyst

ALICYCLIC COMPOUND SYNTHESIS
.From nonring hydrocarbon
..Alkadiene
...Using Co-, Fe-, or Ni-containing catalyst
370 ....With nonmetal organic compound
371 .By ring expansion or contraction
372 ..Using Al group metal halide catalyst
373 ...With added hydrocarbon complex or nonhydrocarbon organic agent
374 ..Using metal-containing catalyst
375 .By alkylation or alkyl transfer
376 ..Feed has side-chain
377 .By double-bond shift
378 ..Using organometallic compound, P- or S-containing catalyst
379 .By dehydrogenation
380 ..Using H acceptor
400 AROMATIC COMPOUND SYNTHESIS
401 .With measuring, sensing, testing, or synthesis operation control responsive to diverse condition
402 .Exploiting or conserving heat of quenching, reaction, or regeneration
403 .Using apparatus of recited composition
404 .By ring expansion or contraction
405 ..Using transition metal-containing catalyst
406 .By dimerization of vinyl aromatic
407 .By ring formation from nonring moiety, e.g., aromatization, etc.
408 ..Nonhydrocarbon feed
409 ...Aromatic or carbonyl-containing reactant
410 ..Aromatic feed
411 ...Using metal-containing catalyst
412 ..Plural stage, with moving catalyst or with specified flow rate or procedure
413 ..With preliminary treatment of feed or plural separation procedures
414 ..Using metal-free H acceptor
415 ..Product compound has more C atoms than feed compound, e.g., cyclic polymerization, etc.
416 ...Triple bond-containing feed
417 ...Using transition metal-containing catalyst
418 ..Using transition metal-containing catalyst
419 ...Group VIII noble metal
420 ...Group VI metal
421 ....With alkaline metal compound
422 .By condensation of entire cyclic molecules or entire hydrocarbyl moieties thereof, e.g., polymerization, etc.
423 ..With plural separation procedures
424 ..Plural stage or with preliminary treatment of feed
425 ..Ring carbon of one molecule joined to ring carbon of other
426 ...Through residue of nonring molecule, e.g., acetylene, etc.
427 ...Arylene bond formed using metal-containing agent
428 ..Nonring moiety of one molecule bonded to nonring moiety of other, e.g., polystyrene, etc.
429 ...Through residue of nonring molecule, e.g., butadience, etc.
430 .From alicyclic
431 ..Polycyclic product or with olefinic unsaturation in feed
432 ...Cymene product
433 ..Using H acceptor or Cr-, Mo-, or W-containing catalyst
434 ..Using noble metal catalyst
435 .Having alkenyl moiety, e.g., styrene, etc.
436 ..Polycyclic product or from nonhydrocarbon feed
437 ...O-containing feed
438 ..By condensation using metal-containing catalyst
439 ..By C removal, e.g., cracking, etc.
440 ..By dehydrogenation
441 ...Plural stage or with plural separation procedures
442 ...Using halogen or S
443 ...Using elemental O
444 ...Using metal oxide, sulfide, or salt
445 ....Cr-, Mo-, or W-containing
446 .By condensation of entire molecules or entire hydrocarbyl moieties thereof, e.g., alkylation, etc.
447 ..With specified flow rate through reactor or flow procedure within or at entrance to reactor
448 ..With preliminary treatment of feed
449 ..Plural alkylation stages
450 ..With plural separation procedures
451 ...Including dissolving or solids formation or separation
452 ..Attachment to side-chain, e.g., telomerization, etc.
453 ...Resulting side-chain has less than four C atoms
454 ..Feed other than hydrocarbon, hydroxy, monohalide, or ether
455 ..Resulting side-chain restricted to more than five C atoms, e.g., "detergent alkylate", etc.
456 ...Using halogen-containing catalyst
457 ..Using organometallic compound catalyst
458 ..Using S-containing catalyst
459 ..Using Al halide catalyst
460 ...And additional metal-containing or nonhalide inorganic agent
461 ...Complexed, e.g., sludge, etc., or with additional extraneous organic agent
462 ..Using halogen-containing catalyst
463 ...Alumina containing
464 ...HF
465 ...B trifluoride in a complex or with additional nonhydrocarbon agent
466 ..Using P-containing catalyst
467 ..Using metal, metal oxide, or hydroxide catalyst
468 ...Noncrystalline, and containing Al and Si
469 .From nonhydrocarbon feed
470 .By alkyl or aryl transfer between molecules, e.g., disproportionation, etc.
471 ..Product is polycyclic, of increased side-chain length, or a specific position polyalkyl benzene isomer
472 ...Using Al or B halide catalyst
473 ....Meta- or 1,3,5-alkyl benzene
474 ..Plural compounds of different weight become midweight compound, i.e., averaging
475 ..Using crystalline aluminosilicate catalyst
476 .By ring opening, removal, degradation, or shift on chain or other ring
477 .By isomerization
478 ..With plural separation steps
479 ...Including a crystallization step
480 ..Using metal oxide- or sulfide-containing catalyst
481 ...Crystalline aluminosilicate
482 ...Pt-group metal containing
483 .By dealkylation

AROMATIC COMPOUND SYNTHESIS
.By dealkylation
484 ..Polycyclic
485 ...Using catalyst and H
486 ..Using extraneous agent in reaction zone, e.g., catalyst, etc.
487 ...And steam.
488 ...And H
489 ....Transition metal-containing catalyst
500 UNSATURATED COMPOUND SYNTHESIS
501 .With measuring, sensing, testing, or synthesis operation control responsive to diverse condition
502 .By addition of entire unsaturated molecules, e.g., polymerization, etc.
503 ..With heat conservation or using apparatus of recited composition
504 ..With specified procedure for recycle of nonhydrocarbon
505 ..Triple-bond product
506 ..Poly-double-bond product
507 ...More than two double bonds, e.g., diene polymerization, etc.
508 ....Of definite molecular weight, e.g., dimer, etc.
509 ...Using P-containing catalyst
510 ..Definite molecular weight product, e.g., dimer, etc.
511 ...Using catalyst containing metal bonded to or complexed with C, C-containing compound, or H
512 ....Al-and transition metal-containing
513 .....And N-, P-, or S-containing
514 ...Using P-containing catalyst
515 ...Using S-containing catalyst
516 ...Using alkali metal-containing catalyst
517 ..Plural serial polymerization stages
518 ..With preliminary treatment of feed
519 ...Removal of hydrocarbon fraction
520 ..Using extraneous nonhydrocarbon agent, e.g., catalyst, etc.
521 ...Hydride or organic compound or complex containing alkaline-, B-, or Zn-group material
522 ....Al trialkyl
523 ....Transition metal-containing
524 .....Ti
525 ...B-containing catalyst
526 ...S-containing catalyst
527 ...N- or P-containing catalyst
528 ....Metal phosphate
529 ....P compound on solid carrier, e.g., "solid phosphoric acid", etc.
530 ...Catalyst containing inorganic metal
531 ....Group VIII metal
532 ....Al
533 .....Al oxide, e.g., aluminosilicate, etc.
534 .Triple-bond product
535 ..With heat conservation or using solid inert heat carrier, e.g., regenerative furnace, etc.
536 ...With carrier movement through reaction zone
537 ..Using apparatus of recited composition
538 ..From organic nontriple-bond feed
539 ...By thermal conversion of hydrocarbon, i.e., thermolysis
540 ...By partial combustion of hydrocarbon
541 ....Using extraneous nonreactant, e.g., diluent, catalyst, etc.
600 .Product having more than two double bonds
601 .Diolefin product
602 ..With heat conservation or using solid inert heat carrier, e.g., regenerative furnace, etc.
603 ..From nonhydrocarbon feed
604 ...Heterocyclic
605 ....Using P-containing catalyst
606 ...O-containing
607 ....Plural O-containing organic compounds
608 ....With unsaturated hydrocarbon in feed
609 ....Alcohol
610 .....Diol
611 ......Using P-containing catalyst
612 ...Halogen-containing feed using extraneous nonhydrocarbon agent
613 ..By C content reduction, e.g., cracking, etc.
614 ...Isoprene product per se
615 ...Butadiene product per se
616 ..By dehydrogenation
617 ...Using nonhydrocarbon acceptor
618 ....Halogen-containing acceptor with elemental O
619 .....Halogen is I only
620 .....Halogen is Cl only
621 ....Elemental O acceptor
622 .....With P containing extraneous agent
623 ......Sn-containing
624 .....With metal oxide or hydroxide extraneous agent
625 ......Ferrite
626 ......Oxide of As, Bi, or Sb
627 ...Using extraneous nonhydrocarbon agent, e.g., catalyst, etc.
628 ....Moving catalyst or plural stage
629 ....Transition metal oxide or sulfide agent
630 .....Cr, Mo, or W
631 ......With other transition metal
632 ....Metal salt agent
633 ...Plural stage or with specified quench or separation procedure
634 .With heat conservation or using solid or molten inert heat carrier, e.g., regenerative furnace, etc.
635 ..With carrier movement through reaction zone or use in quenching
636 .Using apparatus of recited composition
637 .By displacement of hydrocarbon radical by hydrocarbon molecule
638 .From nonhydrocarbon feed
639 ..Alcohol, ester, or ether
640 ...Using metal oxide catalyst
641 ..Halogen-containing
642 ...Using acid, metal oxide, or salt catalyst
643 .By alkyl transfer, e.g., disproportionation, etc.
644 ..Plural stage or averaging
645 ..Using organic extraneous agent
646 ..Using catalyst containing Mo, Re, or W and another transition metal
647 ..Using Re-containing catalyst
648 .By C content reduction, e.g., cracking, etc.
649 ..Isobutylene product per se
650 ..Ethylene product per se
651 ...Using catalyst
652 ...Using O (partial combustion) or steam
653 ..Using catalyst
654 .By dehydrogenation
655 ..With plural separation procedures applied to effluent or effluent component
656 ..Using acceptor, e.g., hydrogen-exchange disproportionation, etc.
657 ...Halogen-containing acceptor
658 ...Elemental O or S acceptor with extraneous nonhydrocarbon agent, e.g., catalyst, etc.

UNSATURATED COMPOUND SYNTHESIS
.By dehydrogenation
659 ..Plural stages or with catalyst movement
660 ..Using extraneous agent containing Pt-group metal and non-Pt-group metal
661 ..Using transition metal oxide, sulfide, or salt
662 ...Cr, Mo, or W
663 ....With other transition metal
664 .By double-bond-shift isomerization
665 ..Using organometallic catalyst
666 ..Using aluminosilicate catalyst
667 ..Using P-containing catalyst
668 ..Using S-containing catalyst
669 ..Using halogen-containing catalyst
670 ..Using transition metal-containing catalyst
671 .By skeletal isomerization
700 SATURATED COMPOUND SYNTHESIS
701 .With measuring, sensing, testing, or synthesis operation control responsive to diverse condition
702 .Synthesis catalyst, solvent, or component thereof used as agent in hydrocarbon purification or separation
703 ..By interaction with nonhydrocarbon
704 .With control of water content of recycled catalyst
705 .With removal of catalyst component from metal-hydrocarbon complex
706 .With addition of reactor effluent component to catalyst as agent for rehabilitation or recycle
707 .With specified procedure for adding fresh makeup catalyst component to complex (sludge), support, or inert contact material
708 .By alkyl transfer, e.g., disproportionation, etc.
709 .By condensation of a paraffin molecule with an olefin-acting molecule, e.g., alkylation, etc.
710 ..With catalyst rehabilitation by reversion from different compound or HF complex
711 ..Including nonhydrocarbon reactant
712 ..With removal of organic halogen contaminant
713 ...Using solid catalyst or sorbent
714 ..With introduction of same material at more than two serially spaced points of reaction zone system
715 ..With autorefrigeration
716 ..Plural alkylation stages
717 ..With preliminary treatment of feed
718 ..With coalescing or sorption of, or addition of specific agent to, effluent or effluent component
719 ..With plural separation procedures applied to effluent or effluent component
720 ..With specified flow procedure within or at entrance to reactor, e.g., by use of named mixing device, etc.
721 ..Using extraneous nonhydrocarbon agent
722 ...Aluminosilicate or organometallic
723 ...HF
724 ....With additional nonhydrocarbon agent
725 .....B-, N-, or P-containing
726 ...B-containing
727 ...Al halide
728 ....With additional nonhydrocarbon agent
729 .....H halide
730 ...S-containing
731 ....Sulfuric acid with additional nonhydrocarbon agent
732 ...O-containing
733 .From nonhydrocarbon feed
734 .By isomerization
735 ..Using temperature gradient or material concentration gradient or introduction of same material at more than two serially spaced points of reaction zone system
736 ..Plural isomerization stages
737 ..With preliminary treatment of paraffin feed
738 ..With specified isomerizate purification or separation procedure
739 ..Using aluminosilicate catalyst
740 ..Using B- or P-containing catalyst
741 ..Using Al halide catalyst
742 ...With additional metal halide
743 ...With S-containing or free or organic halogen agent
744 ...With metal oxide or elemental carbon, e.g., supported, etc.
745 ...With added organic agent or in complex with organic material
746 ...With inorganic material other than halogen-containing
747 ..Using halogen-containing catalyst
748 ...With alumina
749 ....F
750 ..Using metal oxide or hydroxide catalyst
751 ...Including free metal
752 .By C content reduction, e.g., hydrocracking, etc.
800 PURIFICATION, SEPARATION, OR RECOVERY
801 .By conversion of solid to gas, e.g., sublimation, etc., or by melting or squeezing out liquid from solid natural source
802 .By plural serial diverse separations
803 ..To recover alicyclic
804 ..To recover aromatic
805 ...Xylene or ethylbenzene
806 ...Having unsaturated or one-C side-chain
807 ...Including steps of distillation and agent addition
808 ....Agent contains N, carbonyl, or dihydroxy moiety
809 ..To recover unsaturate
810 ...Diolefin
811 ...Including treatment with S-containing agent
812 .By cooling of liquid to obtain solid, e.g., crystallization, etc.
813 ..Using specified holding time or specified cooling rate
814 ..With treatment of mother liquor after crystal separation
815 ..With dissolving or plural serial crystallizations
816 ..With addition of extraneous material
817 ...Before crystal formation
818 .By membrane, selective septum, or coalescer
819 ..Aromatic permeate
820 .By contact with solid sorbent
821 ..With measuring, sensing, testing, or recycle of sorbate to same sorption zone
822 ..Plural serial sorptions
823 ..Sorbate is nonhydrocarbon or chemically undetermined component, e.g., "color-former", etc.
824 ...O-containing sorbate
825 ..With fractional or linear desorption, e.g., chromatography, etc.

PURIFICATION, SEPARATION, OR RECOVERY
.By contact with solid sorbent
826 ..With specified sorbent rehabilitation procedure or agent, e.g., desorbent, etc.
827 ...Cyclic sorbate
828 ....Aromatic separated from other aromatic
829 ...Unsaturated sorbate
830 ..Sorbent is or contains organic
831 ..Cyclic sorbate
832 .Polymerization and depolymerization
833 .By addition of extraneous agent, e.g., solvent, etc.
834 ..With contact procedure involving particular apparatus or more than two moving streams
835 ..With fractional disengagement from agent by use of other agent
836 ..Different, sequentially used agents
837 ...One agent is a diluent, i.e., nonselective solvent or heat exchange material
838 ...Resolution of feed into more than two different components
839 ...Later agent disengages earlier, e.g., decomplexing agent, etc.
840 ....Later agent is hydrocarbon
841 ..H
842 ..HF and another fluoride
843 ..Ag
844 ...By interaction with monoolefin
845 ..Cu
846 ...Ammoniacal, e.g., Cu ammonium acetate (CAA), etc.
847 ....Triple-bond compound separated
848 ...Plural metal or nonhalide Cu compound-containing
849 ...Cu halide with added material other than water
850 ..Group VII or VIII transition metal-containing, e.g., Werner complex formation, etc.
851 ..Group III nontransition element-containing
852 ...Al
853 ..Alkaline metal-containing
854 ...Elemental metal, oxide, or hydroxide
855 ..Metal-containing
856 ..S containing
857 ...S dioxide, sulfolane, or sulfolene
858 ...Sulfuric acid
859 ....Interaction with tertiary olefin
860 ..N-containing
861 ...Ammonia
862 ...Carbonyl moiety-containing
863 ...Interaction with aromatic
864 ..Organic agent
865 ...Heterocyclic or polymeric
866 ...Acid, anhydride, ester or ether
867 ...Hydrocarbon
868 ..Inorganic O-containing agent
899 MISCELLANEOUS PROCESS, E.G., INDETERMINATE MODIFICATION OF A PROPERTY, STORAGE, TRANSPORTATION, ETC.

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CROSS-REFERENCE ART COLLECTIONS

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CATALYST AND RECYCLE CONSIDERATIONS
900 .Rehabilitation of H acceptor
901 .With recycle, rehabilitation, or preservation of solvent, diluent, or mass-action agent
902 ..Recycle of solvent and catalyst
903 .With hydrocarbon recycle to control synthesis reaction, e.g., by cooling, quenching, etc.
904 .Catalyst rehabilitation by reversion from different compound
905 .By-product conversion to feed
906 .Catalyst preservation or manufacture (e.g., activation, etc.) before use
HEAT CONSIDERATIONS
910 .Exploiting or conserving heat of quenching, reaction, or regeneration
911 .Introducing, maintaining, or removing heat by atypical procedure
912 ..Molten material
913 ..Electric
914 ..Phase change, e.g., evaporation, etc.
APPARATUS CONSIDERATIONS
920 .Using apparatus of recited composition
921 .Using recited apparatus structure
922 ..Reactor fluid manipulating device
923 ...At reactor inlet
924 ..Reactor shape or disposition
925 ...Dimension or proportion
926 ...Plurality or verticality
SPECIAL CHEMICAL CONSIDERATIONS
930 .Process including synthesis of nonhydrocarbon intermediate
931 ..Metal-, Si-, B-, or P-containing, e.g., Grignard, etc.
932 ..Carboxyl-containing, e.g., acid, etc.
933 ..N-containing
934 ..Chalcogen-containing
935 ..Halogen-containing
940 .Opening of hydrocarbon ring
941 .Isotope exchange process
942 .Production of carbonium ion or hydrocarbon free-radical
943 .Synthesis from methane or inorganic carbon source, e.g., coal, etc.
944 .Radiation-resistant composition
945 .Product is drying oil
946 .Product is waxy polymer
947 .Terpene manufacture or recovery
MISCELLANEOUS CONSIDERATIONS
950 .Prevention or removal of corrosion or solid deposits
951 .Reaction start-up procedure
952 .Reaction stopping or retarding
953 .Pulsed, sonic, or plasma process
954 .Exploiting mass-action phenomenon
955 .Specified mixing procedure
956 .Condition-responsive control and related procedures in alicyclic synthesis and purification

This Class is the second of a series, newly established as part of a system for the total reclassification of Class 128, Surgery, into several related Classes. Within the new series, the subclasses are related as though each is a part of the same Class.

The portion of Class 128 reclassed into this Class was obtained from Class 128, Surgery, subclass 1, Miscellaneous; subclasses 1.1+, Radioactive Active Substances Applied to the Body for Therapy and subclasses 1.3+, Magnetic Field Applied to the Body for Therapy. In addition, subclasses 127 to 154 of Class 128, Surgery which includes pessaries and shields have been reclassified and follow subclass 126.1 in Class 128.

Class 600 contains radioactive substances and magnetic fields applied to the body for therapy, Cardiac Augmentation devices, antigravational systems (suits), isolation treatment chambers, speech connection therapy, sleep and relaxation inducing devices, body inserted urinary or colonic incontinent devices and treatment, reproduction and fertilization techniques, blood vessel or graft preparation and internal organ supports or slings.

Class 600, Surgery, is to be considered an integral part of Class 128, Surgery, with the subclass of Class 600, Surgery, following the hierarchy of Class 128, and Class Definition of Class 128, Surgery.

1	RADIOACTIVE SUBSTANCE APPLIED TO BODY FOR THERAPY
2	.Combined with other radiant or wave energy source (e.g., electromagnetic, thermal, microwave etc.)
3	.Radioactive substance placed within body (e.g., inhaled, implanted, injected etc.)
4	..By fluid injection of radioactive or enhancing agent through body piercing conduit
5	...Fluid reservoir shielding (e.g., syringe)
6	..Utero-vaginal or pelvic application
7	..Injectors/holders for seeds or implants (e.g., capsules)
8	...Seeds
9	MAGNETIC FIELD APPLIED TO BODY FOR THERAPY
10	.Radio frequency wave induced magnetic field for subcutaneous hyperthermia
11	.Probes
12	.Magnetic element placed within body (e.g., injected, inserted, implanted, etc.)
13	.Electromagnetic coil
14	..Pulsating field
15	.Externally supported or worn (e.g., garment, belt etc.)
16	CARDIAC AUGMENTATION (pulsators etc.)
17	.With condition responsive means
18	.Aortic balloon pumping
19	ANTIGRAVATIONAL SYSTEMS
20	.Body suits
21	ISOLATION TREATMENT CHAMBERS
22	.Incubators
23	SPEECH CORRECTION/THERAPY (e.g., antistammering)
24	.Oral cavity devices
25	SURGICALLY IMPLANTED VIBRATORY HEARING AID
26	SLEEP OR RELAXATION INDUCING THERAPY (e.g., direct nerve stimulation, hypnosis, analgesia)
27	.Sensory (e.g., visual, audio, tactile, etc.)
28	..Audio (e.g., heartbeat, "white noise", etc.)
29	BODY INSERTED URINARY OR COLONIC INCONTINENT DEVICE OR TREATMENT (e.g., artificial sphincters, etc.)
30	.Implanted
31	..With fluid actuated occluding means (e.g., inflatable cuff)
32	.Stoma closures (e.g., colostomy plugs)
33	REPRODUCTION AND FERTILIZATION TECHNIQUES
34	.Embryo transplantation
35	.Artificial insemination
36	BLOOD VESSEL OR GRAFT PREPARATION
37	INTERNAL ORGAN SUPPORT OR SLING

This Class is the first of a series, newly established, as part of a system for reclassifying Class 128, Surgery, into several related classes. Within the series, the subclasses are to be related as though each is part of the same class.

The portion of Class 128, Surgery. reclassified into this Class was obtained from the subclasses 207.19 to 274 (MEDICATOR) and subclasses 275 to 302 (RECEPTORS). The "MEDICATOR" subclasses contained dosing devices, including hypodermic injectors, syringes, depositors and applicators, containers, pump, and valves. The "RECEPTOR" subclasses contained aspirators, lacteal devices, catamenials, diapers, absorbent pads, and materials. All of these are now included in the new series Class 604, Surgery. In general, Class 604, Surgery, contains body treating and medicating methods and apparatus which includes the application, storing, collecting, introduction, or removal of materials from the body.

Class 604, Surgery, is to be considered an integral part of Class 128, Surgery, with the subclass of Class 604, Surgery, following the hierarchy of Class 128, and the Class Definition of Class 128, Surgery.

890.1 CONTROLLED RELEASE THERAPEUTIC DEVICE OR SYSTEM
891.1 .Implanted dynamic device or system
892.1 .Osmotic or diffusion pumped device or system
1 SWAB INCLUDING HANDLE (E.G., STICK, ETC.) WITH ABSORBENT MATERIAL AT END THEREOF
2 .Body treating material fed to absorbent material
3 ..Means broken, cut, pierced, or torn to permit flow of material
4 BLOOD DRAWN AND REPLACED OR TREATED AND RETURNED TO BODY
5 .Constituent removed from blood and remainder returned to body
6 ..Component of blood removed (i.e., pheresis)
7 BLOOD TRANSFERRED BETWEEN DIFFERENT BODIES ALONG CONTINUOUS FLOW PATH (E.G., TRANSFUSION, ETC.)
8 DEVICES TRANSFERRING FLUIDS FROM WITHIN ONE AREA OF BODY TO ANOTHER (E.G., SHUNTS, ETC.)
9 .With flow control means (e.g., check valves, hydrocephalus pumps, etc.)
10 ..With antisiphon means
11 MEANS FOR INSERTING FIBROUS OR FORAMINOUS RESIDENT PACKING, RECEPTOR, OR MEDICAMENT CARRIER INTO BODY ORIFICE
12 .With lubricating means
13 .With means for ejecting continuous length insert (e.g., gauze packing)
14 .Distal portion of inserting means deformed, expanded, or ruptured to permit passage of insert therefrom
15 .With slidable ejector (e.g., plunger or ram, etc.) inside tubular inserting means
16 ..Ejector moved into operating position from stored location inside or alongside inserting means
17 ...Ejector pivoted or swung into operating position
18 ..Tubular inserting means releasably interlocked with ejector
19 MEANS FOR INTRODUCING OR REMOVING MATERIAL FROM BODY FOR THERAPEUTIC PURPOSES (E.G., MEDICATING, IRRIGATING, ASPIRATING, ETC.)
20 .Infrared, visible light, ultraviolet, X-ray or electrical energy applied to body (e.g., iontophoresis, etc.)
21 ..With tubular injection means inserted into body
22 .With means for cutting, scarifying, or vibrating (e.g., ultrasonic, etc.) tissue
23 .Gas application
24 ..Gas mixed with other material
25 ..Ozone
26 ..Gas injected into body canal or cavity
27 .Material introduced into and removed from body through passage in body inserted means
28 ..Method
29 ..Peritoneal dialysis
30 ..Flow control
31 ...By self-acting means or condition responsive sensor
32 ...Rotary valve
33 ...Slide or reciprocating valve
34 ...Deformable occluding tube valve
35 ..With aspirating or vacuum removing means
36 ..Means moved by person to introduce and remove material
37 ...Hand-supported squeeze bulb
38 ...Piston
39 ..Structure of douche nozzle having separate ingress and egress passages therein
40 ...With telescoping movement between ingress and egress passages
41 ...With body orifice occluding means
42 ....Axially adjustable
43 ..Body inserted conduit with separate ingress and egress passages
44 ...Having body piercing means
45 ...Having air or gas venting passage
46 .Treating material introduced into body by contact with wound formed therein by solid scarifier, cutter, or the like (e.g., scratching skin with vaccine coated needle, etc.)
47 ..With separate applicator for material or separate holder for material placed on applicator or in wound
48 .Treating material introduced into or removed from body orifice, or inserted or removed subcutaneously other than by diffusing through skin
49 ..Methods
50 ...Material introduction or removal responsive to sensed body condition
51 ...Material introduced into body or removed therefrom through piercing conduit (e.g., needle) inserted into body
52 ....Material introduced into or removed from blood vessel
53 .....By catheter

MEANS FOR INTRODUCING OR REMOVING MATERIAL FROM BODY FOR THERAPEUTIC PURPOSES (E.G., MEDICATING, IRRIGATING, ASPIRATING, ETC.)
.Treating material introduced into or removed from body orifice, or inserted or removed subcutaneously other than by diffusing through skin
..Methods
54 ...Material introduced into or removed from body orifice
55 ....Female reproductory tract
56 ...Liquid mixed with solid or different liquid
57 ..Means for placing solid treating material in body
58 ...Powder dispenser
59 ...Means for ejecting solid from holder
60 ....Solid ejected from body inserted conduit
61 .....Eject means moved by force applied to trigger associated with pistol grip
62 .....Solid units successively fed to conduit from supply means (e.g., magazine, etc.)
63 .....Eject means driven by spring
64 .....Solid loaded into injector through opening in side wall of plunger housing
65 ..Material flow varying means controlled by condition responsive sensor
66 ...Sensor responsive to body condition
67 ...Sensor controls pump, motor, or pressure driven means
68 ..Needless hypodermic injector
69 ...Material expelled from injector by explosive charge
70 ...Material expelled from injector by pressurized fluid
71 ...Multidose type
72 ...Structure of material reservoir replaceably held in injector
73 ..Means forceably introducing or removing material from body orifice or wound
74 ...Lacteal extractors (e.g., breast pump, etc.)
75 ....With collapsible bulb means
76 ....With suction generated orally by person or user
77 ..Structure of means contacting portion of head (e.g., tongue, etc.) during placement of treating material in mouth or throat
78 ...Drinking cup
79 ...Means for engaging head to hold feed device in mouth
80 ..Gravity feed to body from plural material reservoirs
81 ...With self-acting sequential flow from reservoirs
82 ..Means for intermixing liquid with solid or different liquid
83 ...Treating material introduced directly into liquid stream path
84 ....Solid treating material
85 ....Liquid stream passes through reservoir containing treating material
86 ....Septum pierced by conduit
87 ...Means broken, cut, pierced or torn to permit mixing
88 ....Septum
89 ...Closure or barrier between compartments moved to permit mixing
90 ....Closure moved, expanded, or flexed by force transmitted by liquid
91 ....Closure moved by relative movement between closure and separate protruding member
92 ...Solid dissolved in liquid
93 ..Material introduced or removed through conduit, holder, or implantable reservoir inserted in body
94 ...Dual nozzles for insertions into paired body orifices (e.g., nasal passages, etc.)
95 ...Conduit with self-propelled or remote control means
96 ...Having means inflated in body (e.g., inflatable nozzle, dilator, balloon catheter, occluder, etc.)
97 ....Including means forcing inflation fluid into inflatable means
98 .....Pressurized inflation means
99 ....With inflation or deflation control means
100 ....With indicator means
101 ....With plural balloons on conduit
102 ....With aperture in conduit proximal of inflated means
103 ....With means bonding or mechanically securing balloon sleeve or connector member (e.g., coupling funnel, etc.) to conduit
104 ...Having means expanding body orifice or canal (e.g., dilator, retaining means, etc.)
105 ....Expanding bow
106 ....Expanding arm or finger
107 .....Expansion actuated by axially movable member
108 ......Rotatable means actuates axially movable member
109 .....Expansion actuated by rotatable means (e.g, threaded or cammed member, etc.)
110 ...Having means for preventing reuse of device
111 ...Having means for indicating device is defective , used, or tampered with
112 ...Having means for desensitizing skin
113 ...Having means for cooling or heating body, treating or collected material or device
114 ....Electric means
115 ...Having means for protruding skin to facilitate piercing it
116 ...Having means for locating or identifying point where body is to be pierced (e.g., apertured body fitting template, etc.)
117 ...Having structure for controlling depth of insertion of body piercer
118 ...Having means for varying, regulating, indicating, or limiting injection pressure or aspirating suction
119 ....Means varying or regulating suction
120 .....With cyclic or timed regulation
121 ....On piston type injector or aspirator
122 ...Having means for eliminating and/or preventing injection of air into body
123 ....From pump injection device
124 ....From injection means moved by person to impel material into body
125 .....From hand supported injection means
126 ....By hydrophilic or hydrophobic filters
127 ....By low level float cutoff
128 ...Having siphon means for removing material from external source or body
129 ....With vacuum breaking means (e.g., vent, etc.)

MEANS FOR INTRODUCING OR REMOVING MATERIAL FROM BODY FOR THERAPEUTIC PURPOSES (E.G., MEDICATING, IRRIGATING, ASPIRATING, ETC.)
.Treating material introduced into or removed from body orifice, or inserted or removed subcutaneously other than by diffusing through skin
..Material introduced or removed through conduit, holder, or implantable reservoir inserted in body
130 ...Having projectile injector operated upon impact with body
131 ...Treating material forced into or out of body by self-acting fluid pressure, motor-driven, or mechanical energy storing means (e.g., pressure infusion or aspiration, etc.)
132 ....Material impelled into body by contraction of expanded elastic material reservoir
133 ....Material exhausted from body by expansion of contracted elastic receptacle or resilient means therein
134 ....Material impelled by spring
135 .....Spring drives piston
136 .....Material conduit forced into body by spring
137 ......Spring triggered by skin contacting means
138 ......Portion of conduit stored in material supply means
139 ......Material supply means pierced by conduit
140 ....Material impelled by pressurized charge of gas or vacuum
141 .....Material impelled by means (e.g., diaphragm, piston) moved by gas or vacuum pressure
142 ......Reservoir prepressurized or exhausted by squeeze bulb
143 ......Piston impelled by gas or vacuum pressure
144 ....And impelling material conduit into body
145 .....Pressurizing gas generated by chemical reaction
146 .....Pressurizing gas or vacuum charge produced by mechanical actuator (e.g., air pump, etc.) associated with injector
147 .....Pressurizing gas or vacuum charge supplied by external storage source
148 .....Means broken, cut, pierced, or torn to permit material flow
149 ....Material impelled by negative pressure created by current of fluid (e.g., air entrainment, etc.)
150 ....Material impelled by hydraulic or water hydrant pressure
151 ....Material impelled by pump
152 .....Reciprocating piston type
153 .....Deformable resilient chamber type
154 ....Material impelled by nonreciprocating piston driven by motor
155 .....With threaded drive means
156 ...Conduit forced into body by self-acting fluid pressure, motor-driven, or mechanical energy storing means
157 ....Conduit impelled by spring
158 ...Body entering conduit axially movable within body piercing conduit while former is disposed in the body
159 ....Having mechanical means for feeding conduit through piercing conduit
160 ....Having longitudinal groove or slot in piercing conduit to permit removal from body entering conduit
161 ....Piercing conduit longitudinally separable for removal from body entering conduit
162 ....Having guard on piercing conduit for protecting body entering conduit
163 ....Having bag or sheath enclosing body entering conduit
164 ...Body piercer, obturator rod, or stylet axially movable within body entering conduit while latter is disposed in body
165 ....Having means preventing relative movement between elements during their insertion into body
166 ....Having groove or reduced portion on piercer, rod, or stylet for receiving distal end of conduit
167 ....Having resealable closure means for conduit
168 ....Having telltale for showing entry of blood into conduit
169 ....Flow control means in conduit operable after removal of piercer, obturator, or stylet from conduit
170 ....Having blunt tip on obturator rod or stylet
171 ...Body entering conduit axially movable within flexible protective sheath facilitating sterile insertion into body duct
172 ....Having lubricating means
173 ...Injection or aspiration device having plural body entering conduits
174 ...Means for securing conduit to body
175 ....Implanted connecting means
176 ....Vacuum
177 ....And used as conduit manipulator (e.g., foldable gripper wings, etc.)
178 ....Axially movable clamp means
179 ....Belt, strap, or band securing means
180 ....Adhesive securing means
181 ...Means moved by person to inject or remove fluent material to or from body inserted conduit, holder, or reservoir
182 ....Means moved by weight of body placed thereon
183 ....Material expelled from reservoir having separate external feed means and discharge outlet
184 .....Material fed to reservoir through hollow piston
185 .....Reservoir squeezed to expel material therefrom
186 .....Means for metering material flow to or from body
187 ....Injector or aspirator syringe supported only by person during use (e.g., hand held hypodermic syringe, douche tube with forced injection, etc.)
188 .....Having body piercing conduit mounted on syringe for rotation about its longitudinal axis
189 .....Having medical information (e.g., name of patient or medicament, etc.) means
190 .....Having fluid filter
191 .....Having plural material reservoirs

MEANS FOR INTRODUCING OR REMOVING MATERIAL FROM BODY FOR THERAPEUTIC PURPOSES (E.G., MEDICATING, IRRIGATING, ASPIRATING, ETC.)
.Treating material introduced into or removed from body orifice, or inserted or removed subcutaneously other than by diffusing through skin
..Material introduced or removed through conduit, holder, or implantable reservoir inserted in body
...Means moved by person to inject or remove fluent material to or from body inserted conduit, holder, or reservoir
....Injector or aspirator syringe supported only by person during use (e.g., hand held hypodermic syringe, douche tube with forced injection, etc.)
192 .....Having cover or protector for body entering conduit
193 ......Used as piston actuator after removal from conduit covering or protecting position on syringe
194 ......Entire body entering conduit stored in cavity in piston or piston actuator inside syringe prior to use
195 ......Portion of body entering conduit stored in material receiving syringe reservoir
196 ....And extended therefrom by piston when syringe is used
197 ......Common cover or protector for body entering conduit and material syringe reservoir
198 ......Cover or protector for body entering conduit movable axially relative to one another
199 .....Having structure for facilitating sterilization of syringe or preventing contamination of material therein
200 .....Means broken, cut, pierced, or torn to permit material flow to or from body
201 ......Septum pierced by conduit to permit flow
202 ....Septum flexed toward conduit to force conduit therethrough
203 ....Septum pierced is piston head
204 ....Septum within collapsible material reservoir
205 ....Septum piercing conduit separate from body entering conduit
206 ....Septum piercing conduit attached to injector by turning one component relative to another (e.g., thread, bayonet type connector, etc.)
207 .....Having means for metering material flow to or from body
208 ......Including means for controlling piston stroke length
209 ....By rachet and pawl
210 ....By detent
211 ....By rotatable means (e.g., micrometer, etc.)
212 .....Having collapsible material reservoir (e.g., squeeze bulb, etc.)
213 ......Having means to prevent fluid return to reservoir
214 ......Mechanical means (e.g., piston, clamp, etc.) moved to collapse reservoir
215 ......Having orifice occluding means
216 ......Bellows-type reservoir
217 .....Reservoir pressurized or exhausted by squeeze bulb
218 .....With piston or plunger for expelling material from body or injector reservoir
219 ......Diameter of piston selectively adjustable
220 ......Means for preventing accidental displacement of piston
221 ......Piston or piston actuator slidable in or against seal ring mounted on reservoir
222 ......Seal ring mounted on piston
223 ......Injector components pivoted relative to each other to move piston
224 ......Piston moved by screw or rack
225 ......Means for preventing destructive piston impact on end of material reservoir
226 ......Closable storage cavity included in piston or piston actuator
227 ......Specific structure of finger grip for moving piston
228 ......Specific structure of means coupling piston to piston actuator
229 ......Piston actuator contacting resilient retractable portion on piston
230 ......Means for reducing piston sliding friction (e.g., oil applicator, use of low friction material, etc.)
231 ......Material passed to or from body through aperture in piston
232 ......Material reservoir (e.g., cartridge, etc.) removably mounted in syringe
233 ....Piston actuator mounted in means (e.g., yoke, etc.) pivoted to syringe
234 ....Material reservoir centered or clamped in syringe by slidable component
235 ....Means for ejecting, or facilitating ejection of material reservoir from syringe
236 ......Material flow controlled by valve or movable closure (e.g., plug in orifice, etc.)
237 ....Diaphragm valve
238 ....Removable plug
239 .....Specific structure of body entering or piercing conduit
240 .....Specific structure of means connecting body entering conduit to syringe
241 ......Conduit holder attached to another syringe component by thread means
242 ......Conduit holder attached to another injector component by cam
243 ......Conduit or holder therefor removably attached to another injector component by friction
244 ...Means broken, cut, pierced, or torn to permit material flow to body
245 ...Material flow to or from body terminated by self-acting means
246 ...Means for controlling material flow to or from body, or metering a predetermined dose or amount
247 ....Having fluid responsive means (e.g., check valve, etc.)
248 ....Rotatable type valve
249 ....Slide or reciprocating valve

MEANS FOR INTRODUCING OR REMOVING MATERIAL FROM BODY FOR THERAPEUTIC PURPOSES (E.G., MEDICATING, IRRIGATING, ASPIRATING, ETC.)
.Treating material introduced into or removed from body orifice, or inserted or removed subcutaneously other than by diffusing through skin
..Material introduced or removed through conduit, holder, or implantable reservoir inserted in body
...Means for controlling material flow to or from body, or metering a predetermined dose or amount
250 ....Conduit deforming clamp
251 ....Drip meter
252 .....Having fluid filter
253 .....Having drip sensor
254 .....Having float controlling or indicating material flow from chamber
255 .....Mounted in material reservoir
256 ....Having flow closing or opening means (e.g., plug, cap, seal, etc.)
257 ...Liquid reservoir with body inserted nozzle or feed conduit connected therewith
258 ....Having plural feed conduits
259 ....With storage means (e.g., cabinet, etc.) for reservoir and material feed conduit
260 ....Having liquid level indicator
261 ....Having means for supporting body inserted nozzle tip or free end of feed conduit after use
262 ....Bag type
263 ...Removable cover or protector for body inserted conduit
264 ...Body inserted tubular conduit structure (e.g., needles, cannulas, nozzles, trocars, catheters, etc.)
265 ....With body soluble, antibactericidal or lubricating materials on conduit
266 ....With anticlogging means on conduit (e.g., anticlotting, decalcification, tissue occulsion, etc.)
267 .....Mechanical cleaning means
268 .....With barrier, shield, or suction relief means adjacent tissue contacting orifice
269 .....With anticoagulant supply means
270 ....Having weighted tip means on conduit promoting advance thereof through alimentary tract
271 ....Having evaginating or invaginating capability
272 ....Body piercing condit (e.g., needle, etc.)
273 .....Specific structure for preventing or minimizing inconvenience casued by breakage during insertion of conduit into body
274 .....Specific structure for preventing coring of body tissue
275 ....Nozzle insertable into body orifice
276 .....Having external means for receiving material discharged from body orifice
277 ......Colostomy apparatus
278 .....Having orifice sealing means
279 .....Vaginal or douche type
280 ....Flexible catheter/cannula or means (e.g., coupling, etc.) used therewith
281 .....Having shape retaining memory
282 .....Having rigidifying or anticollapsing means (e.g., reinforcing coils, etc.)
283 .....With coupling or connector structure
284 .....Having branched shapes (e.g., T or Y drains, etc.)
285 ...Treating material insert retained in body orifice
286 ....Including foraminous material (e.g., sponge, etc.) or fibrous element other than withdrawal cord
287 .....With soluble cover means
288 ....Soluble in body (e.g., suppository, etc.)
289 .Treating material applied to or removed from external surface of body, or cutaneous layer of skin (e.g., eye treatment, removal of skin impurities, etc.)
290 ..Method of applying or removing material to or from body
291 ..Means for cooling or heating material
292 ..Glove for applying or removing material to or from wearer's hand
293 ..Specific structure for applying or removing material to or from foot or leg
294 ..Means for treating eye or surface of ocular cavity
295 ...Dropper, douche, or eyecup for applying liquid to eye
296 ....Having means for aerating liquid
297 ....Having means for scavenging liquid after contact with eye
298 ....Having means for metering liquid flow to eye
299 ....Having means for preventing contact of liquid with syringe bulb
300 ....Having means for positioning liquid dispenser relative to eye
301 .....Eye cup
302 .....Guard or guide
303 ..Mask for applying or removing material to or from wearer's face
304 ..Bandage, pad, or shield placed on body for sustained treatment thereof
305 ...Treating material supplied to bandage, pad, or shield through conduit connected to remote supply
306 ...Treating material reservoir broken, cut, pierced, or torn to apply treating material to body
307 ...Adhesively attachable to body
308 ...Bandage, pad, shield, or attaching means extendable around body portion
309 ..Solid treating material (e.g., styptic pencil, etc.) application
310 ..Fluent treating material held in reservoir in hand-supported applicator
311 ...With piston or plunger for expelling material therefrom
312 ..Sudatory devices (e.g., removing sweat, etc.)
313 ..Means for removing material from surface by suction
314 ...Venom extractor
315 ...Suction generated by self-acting fluid pressure, motor-driven or mechanical energy storing means (e.g., spring, etc.)
316 ...Means moved by person to produce suction (e.g., squeeze bulb, piston, etc.)

317 MEANS AND METHODS FOR COLLECTING BODY FLUIDS OR WASTE MATERIAL (E.G., RECEPTACLES, ETC.)
318 .Material collector with condition indicator
319 .Aspiration collection container or trap (e.g., canister, etc.)
320 ..Having vacuum shutoff means (e.g., float valve, etc.)
321 ..Having liquid seal means
322 .Material collector or receptacle having attaching means to static support independent of body
323 ..With flow control means (e.g., antibackflow valve, etc.)
324 ..With vent or overflow opening
325 ..With drip meter
326 ..Conduit or connector for material collector/receptor
327 .Receptacle attached to or inserted within body to receive discharge therefrom
328 ..Receptacle or portion thereof inserted within body cavity
329 ...Receptacle structured for collecting urine from human female
330 ...Intravaginal
331 ....With external collector or support means
332 ..Receptacle engaging around permanent surgically constructed body opening (e.g., colostomy, etc.)
333 ...Having deodorant means (e.g., filter)
334 ...Having additional irrigation port or means
335 ...With flow control means (e.g., valve, etc.)
336 ...With hydrocolloid type seal (e.g., gel, starch, karaya gum, etc.)
337 ...Means for covering stoma or body opening
338 ...Mounting ring or annulus around body opening
339 ....Bag attached to seal ring
340 .....With bag anticollapse feature
341 .....Body engaging surface of seal ring covered by bag wall or portion thereof
342 .....Means attaching bag to seal ring
343 .....Including body support means
344 ......Adhesive
345 ...With body support means (e.g., belt, garment, etc.)
346 ..Receptacles receiving protruding body member (e.g., ears, genitalia, breast, etc.)
347 ...Genital receptacle
348 ....With separate fecal receiving compartment
349 ....Receptacle structured for collecting urine or discharge from male member (e.g., external catheter, etc.)
350 .....With antibackflow means
351 .....With separate body securing means
352 ......Adherent or inflatable type
353 ......Body or body member encircling belt, strap, or harness
354 ....Catamenial receptacle
355 ..Receptacle externally sealing around body opening to receive natural or surgical discharge
356 ..Receptacle placed under or against body to collect discharge during surgical or obstetrical operations
357 ...Flexible apron type
358 .Absorbent pad for external or internal application and supports therefor (e.g., catamenial devices, diapers, etc.)
359 ..Deodorant containing
360 ..Containing inhibitor to ammonia or bacteria formation
361 ..With wetness indicator or alarm
362 ..With radio-opaque material or signaling means for residual material
363 ..With lubricating means to facilitate insertion
364 ..Containing hydrosoluble, hydrodegradable or body heat soluble material
365 ..Containing fiber or material bonding substance
366 ...Thermoplastic
367 ..Containing particular materials, fibers, or particles
368 ...Collagen or gelling material
369 ...Foam or cellular structure material
370 ...Thermoplastic
371 ....Nylon
372 ...Synthetic resin
373 ...Natural or synthetic rubber
374 ...Cellulose or cellulosic materials
375 ....With additional chemical modifications (e.g., paper, chemical pulp, rayon, etc.)
376 .....Carboxy-radical containing
377 ....Cotton or derivative thereof
378 ..Containing layers having differing absorption characteristics (e.g., flow control, wicking, etc.)
379 ...Compressed layer
380 ....Having discontinuous areas of compression
381 ...Layer coated or treated to decrease absorbency
382 ....Discontinuous coating or treatment of layer
383 ...Needled or punched layer
384 ..Having specific fiber orientation or weave
385.1 ..Having specific design, shape, or structural feature
385.2 ...Elastic type edge
386 ..Pad having means for securing pad during use
387 ...By securing to garment or person
388 ....Shoulder supported garment
389 ...Adhesive tab fastener element
390 ....With release means associated with tab fastner
391 ...By fabric strip fastener element (e.g., VELCRO, etc.)
392 ...By strap, belt, tying, or endless band means
393 ..Specific garment, holder, or support for absorbent pad
394 ...Abdominal enclosing type
395 ....With openable or removable crotch portion
396 ....With endless waist encircling band (e.g., panty type)
397 ...Pad support having means to restrain absorbent pad
398 ....Pad restrained by means transverse to width of the pad or fastener element (e.g., strap, end flap, or tuck)
399 .....Button or snap fastener element
400 ...Pad support or holder adjustable relative to body crotch area
401 ...With body attaching means for pad support

MEANS AND METHODS FOR COLLECTING BODY FLUIDS OR WASTE MATERIAL (E.G., RECEPTACLES, ETC.)
.Absorbent pad for external or internal application and supports therefor (e.g., catamenial devices, diapers, etc.)
..Specific garment, holder, or support for absorbent pad
402 ...Pad holding or suspending device
403 CONTAINER FOR BLOOD OR BODY TREATING MATERIAL, OR MEANS USED THEREWITH (E.G., NEEDLE FOR PIERCING CONTAINER CLOSURE, ETC.)
404 .Means for indicating condition of container content
405 .Filter for purifying or washing air entering container
406 .Filter or series thereof for liquid entering or leaving container
407 .Means for metering amount of content drawn from container
408 .Bag type
409 ..With means for holding sample of content
410 ..Plural compartments or bags
411 .Having hollow needle or spike for piercing container or container closure
412 ..Conduit with hollow needle or spike at each end thereof
413 ..Pointed at both ends
414 ..Mounted on one container and used to pierce another container or closure
415 .Container with piercable closure
416 .Materials mixed within container

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CROSS-REFERENCE ART COLLECTIONS

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900 TELLTALE SHOWING ENTRY OF BLOOD INTO BODY INSERTED CONDUIT
901 INJECTION DEVICE WITH THERMOMETER
902 SUCTION WANDS
903 MEDICAL CONTAINER WITH MATERIAL AGITATION MEANS
904 TAMPONS
905 ASEPTIC CONNECTORS OR COUPLINGS (E.G., FRANGIBLE, PIERCABLE, ETC.)
906 ARTIFICIAL INSEMINATION

This class is the third of a series, newly established as part of a system for the total reclassification of Class 128, Surgery, into several related Classes. Within the new series, the subclasses are related as though each is a part of the same class.

The portion of Class 128, Surgery reclassed into this Class was obtained from Class 128, Surgery, subclass 92R, bone (orthopedic instrumentation) and subclasses 303R to 361, instruments.

Class 606 contains the application of light, cryogenics and electrical application of light, cryogenics and electrical applicator to the body, orthopedic instrumentation including internal and external fixation devices, orthopedic cutting devices and surgical instrumentation.

Class 606, Surgery is to be considered an integral part of Class 128, Surgery, with the subclass of Class 606, Surgery, following the hierarchy of Class 128, and the Class Definition of Class 128, Surgery.

1 INSTRUMENTS
2 .Light application
3 ..With particular wavelength
4 ..Ophthalmic
5 ...Recurving or reshaping of the eye
6 ...Cataracts or glaucoma
7 ..Angioplasty
8 ..Anastomosis
9 ..Dermatological
10 ..Systems
11 ...Beam energy control or monitoring
12 ....Condition responsive
13 ..Applicators
14 ...Placed in body
15 ....With optical fiber
16 ...With optical fiber
17 ...With beam shaping or redirecting (e.g., lens)
18 ....Mirror
19 .....Articulated arm
20 .Cyrogenic application
21 ..Internal application
22 ..With coolant supply
23 ...Tip or other cooling concentration means
24 ....With heating means (e.g., defroster)
25 ....Self-contained coolant supply
26 ....With hand manipulable coolant control
27 .Heat application
28 ..Tip or other heat concentration means
29 ...Tip in electrical circuit
30 ....Self-contained powersupply
31 ....With thermal control means
32 .Electrical application
33 ..Electromagnetic wave irradiation
34 ..Systems
35 ...Ground electrode monitoring
36 ...Depilation
37 ...Combined cutting-coagulation
38 ....With feed back control
39 ...Cutting
40 ...Coagulation
41 ..Applicators
42 ...With switching or power control
43 ...Depilation
44 ....By needle
45 ...Cutting
46 ....Endoscopic
47 .....With formable electrode
48 ....Bipolar electrodes
49 ...coagulation
50 ....Bipolar electrodes
51 .....With forceps or tweezers
52 ....With forceps or tweezers
53 .Orthopedic instrumentation
54 ..External fixation means
55 ...Movable by patient
56 ...Ring frame
57 ...Compression or distraction mechanism
58 ....Cyclable or incrementable
59 ...Pin connector
60 ..Internal fixation means
61 ...Spinal positioner or stabilizer
62 ...Intramedullary fixator
63 ....Expanding in diameter or length
64 ....Cross-fastened
65 ...Femoral screw
66 ....Anti-rotation or keeper means
67 ...Femoral nail
68 ....Expanding
69 ...Cortical plate
70 ....Multi-element or coated plate
71 .....Having separable and distinct plate elements
72 ...Orthopedic fastener
73 ....Threaded fastener element
74 ....Bone cerclage device
75 ....Staple or similar driven fastener
76 ..Specialized coating or material
77 ...Absorbable
78 ...Shape memory material
79 ..Orthopedic cutting instrument
80 ...Reamer or drill
81 ....Acetabular
82 ...Saw type tool
83 ...Rongeur, resector, or nipper
84 ...Osteotome or scraper
85 ....Rasp or file
86 ..Means for use in bone reperation
87 ...Osteotomy jig or fixture
88 ....Knee or knee joint
89 ....Femoral head
90 ...Joint distractor
91 ...Acetabular cup positioner
92 ...Device for the application of bone cement
93 ....Applicator
94 .....Pressurized cement placement
95 ....Intramedullary plug or centering means
96 ...Drill or pin guide
97 ....X-ray positioned
98 ....Cross-pinning drill guide
99 ...Prosthesis insertor or extractor
100 ....Restrained movable mass (e.g., slide hammer)
101 ...Nail or plate bender
102 ...Gauging or measuring device
103 ...Wiring aid
104 ...Screw or pin placement or removal means
105 ...Bone compression or distraction
106 .Means for removing foreign objects from the throat or connected passageways (e.g., probing)

INSTRUMENTS
107 .Means for removing, inserting or aiding in the removal or insertion of eye lens material
108 .Means for inserting or removing conduit within body
109 ..Ear vent or drain
110 .Means for removing tonsils, adenoids or polyps
111 ..With hemostasis
112 ...By pressure application
113 ..By wire loop or snare
114 ..With collecting means for removed material
115 ...By vacuum application
116 .Means for marking animals
117 .Means for applying animal identification device
118 .Means for circumcision
119 .Obstetric or gynecological instruments
120 ..Umbilical clamp
121 ..Partuition assistance device
122 ...Fetus extractor
123 ....With vacuum or suction application
124 ....With mechanical means for applying tension (e.g., gearing, reels, etc.)
125 ..Means for rupturing the amniotic membrane
126 ..Embryotome
127 .Means for concretion removal
128 ..With fragmenting means
129 .Electrode guide means
130 .Stereotaxic device
131 .Means for removal of skin or material therefrom
132 ..By means for skin graft preparation (e.g., dermatome)
133 ..Physical removal of hair or hair plugs from skin
134 ...By application of wax or adhesive
135 .Means for, or to assist in mammalian sterilization
136 ..By crushing
137 ..By severing
138 .Means for removing suture, clip, staple or ligature
139 .Suture, ligature, elastic band or clip applier
140 ..Elastic band applier
141 ...Band applied to reproductive organ
142 ..Clip applier
143 ...Clip fed from supply
144 ..Mechanical suture or ligature applier
145 ...Shuttle action by suture passing device
146 ...Spool feeds suture to needle
147 ...Means for clamping needle to handle
148 ..Suturing or ligating aid or guide
149 ...Eversion device
150 ...Alignment device (e.g., approximators)
151 .Surgical mesh, connector, clip, clamp or band
152 ..Connector for nerve endings
153 ..Connector for hollow body organs
154 ...Bioabsorbable
155 ...Connector is single element
156 ....Removable
157 ..Occluding clip, clamp, or band
158 ...Artery or vein
159 .Blood vessel, duct or teat cutter, scrapper or abrader
160 .Curette
161 .Optic, otic or oral scrapper or abrader
162 .Means for cleaning eye, ear or nose
163 .Means for debeaking or dehorning animals
164 ..By electrical or thermal application
165 .Means for removal of animal tails
166 .Corneal cutter or guide for corneal cutter
167 .Cutting, puncturing or piercing
168 ..Cutter drive reversed to clean material therefrom
169 ..Cutter having vibratory drive means
170 ..Cutter carried on elongated probe-like member
171 ...Reciprocating or oscillating cutter
172 ..Means to limit cutter penetration depth (e.g., dura guard)
173 ...By disconnecting cutter drive
174 ..Shear type (e.g., scissors, etc.)
175 ...Snout cutter
176 ..Saw type
177 ...Reciprocating
178 ...Oscillating
179 ...Cylindrical
180 ..Rotary cutter
181 ..Lancet
182 ...Spring driven or biased into cutting position
183 ....Plural cutting blades
184 ..Punch
185 ..Puncturing or piercing
186 ...Multiple puncturing elements (e.g., tatoo, scarifiers, etc.)
187 ...Hair or artificial hair injector or anchor
188 ...Earlobe piercing means
189 ...Acupuncture means
190 .Blunt dissectors
191 .Internal pressure applicator (e.g., dilator)
192 ..Inflatable or expandible by fluid
193 ...Inserted in female reproductive system
194 ...Inserted in vascular system
195 ....Detachable from inflation means
196 ...Nose or throat
197 ..Rectal or anal
198 ..Expanding dilator (e.g., expanding arm, etc.)
199 ..Nasal dilator
200 ..With emboli trap or filter
201 .External pressure applicator
202 ..Pneumatic cuff
203 ..Tourniquet
204 ..Acupressure device
205 .Forceps
206 ..Jaws biased to open or closed position
207 ..Jaw structure
208 ..Hinge or latch structure
209 ..Tubular member stripper
210 .Tweezers
211 ..Combined with another device
212 .Hoof crack repair
213 .Sutureless closure
214 ..Chemical bonding material applied to wound edges
215 ..Material placed on opposed sides of incision or wound
216 ...Means to draw opposed sides of incision into apposition
217 ....Sliding fastener
218 ....Screw, rack and pinion or pawl and racket
219 ...Staple fastener
220 ....With retaining means
221 ...Approximating clip or serrefine
222 .Suturing needle
223 ..Needle tip or body structure
224 ..Filament attachment
225 ...Tied, hooked, wedged or grasped
226 ...Deformed
227 ...Pull out or frangible

INSTRUMENTS

228 .Suture or ligature
229 ..Collagen containing
230 ..Absorbable in body
231 ..Organic material containing
232 .Suture retaining means (e.g., buttons)
233 .Suture supported from engagement with incision (e.g., suture bridge)
234 .Oral pacifier
235 ..Teething device
236 ..Nipple attachment or structure

CLASS 623 PROSTHESIS (I.E., ARTIFICIAL BODY MEMBERS), PARTS THEREOF OR AIDS AND ACCESSORIES THEREFOR

1 ARTERIAL PROSTHESIS (E.G., BLOOD VESSEL, ETC.)
2 HEART VALVE
3 CORPOREAL ARTIFICIAL HEART, HEART ASSIST (E.G., IMPLANTABLE BLOOD PUMP, ETC.) CONTROL REGULATOR, OR POWER SUPPLY THEREFOR, OR METHOD OF OPERATION THEREFOR
4 EYE PROSTHESIS (E.G., LENS OR CORNEAL IMPLANT, OR ARTIFICIAL EYE, ETC.)
5 .Corneal implant
6 .Intraocular lens
7 BREAST PROSTHESIS
8 .Implantable
9 LARYNX, TRACHEA, TRACHEOBRONCHIAL PROSTHESIS OR COMBINATION THEREOF
10 EAR OR NOSE PROSTHESIS
11 IMPLANTABLE PROSTHESIS
12 .Hollow or tubular part or organ (e.g., bladder, urether, bronchi, bile duct, etc.)
13 .Ligament or tendon
14 .Muscle (e.g., sphincter, etc.)
15 .Hair or skin
16 .Bone prosthesis
17 ..Spinal column (e.g., vertebra, spinal disc, etc.)
18 ..Joint
19 ...Shoulder
20 ...Elbow or knee
21 ...Wrist, hand (e.g., finger, etc.), ankle or foot (e.g., toe, etc.)
22 ...Hip
23 ....Femoral head
24 HAVING ELECTRICAL ACTUATOR
25 .Bioelectrical (e.g., myoelectric, etc.)
26 HAVING FLUID ACTUATOR
27 LEG
28 .Extension
29 ..Foot covering or support
30 .Torso actuated or controlled
31 .Torso attachment
32 .Suspender or attachment from natural leg
33 .Socket holder
34 ..Suction type
35 ..Yieldably mounted
36 ..Cushioning means (e.g., pad or liner, etc.)
37 ...Fluid
38 .Adjustable shank or thigh
39 .Knee
40 ..Combined knee and foot actuator
41 ...Latch
42 ...Spring
43 ..Brake or latch
44 ...Weight or position responsive
45 ...Adjustable friction joint
46 ..Spring
47 .Ankle
48 ..Universal joint
49 ...Resilient
50 ..Resiliently actuated or controlled
51 ...Elastic cord
52 ...Spring
53 .Foot
54 ..Toe
55 ..Resilient
56 ...Fluid cushion
57 ARM OR COMPONENT (E.G., ELBOW, WRIST, HAND, FINGER, ETC.) AND ACTUATOR OR CONNECTOR THEREFOR
58 .Torso supported and actuated
59 .Elbow
60 ..With forearm actuation
61 .Wrist
62 ..With wrist actuation
63 .Arm or torso initiated finger actuation
64 .Finger actuator embodied in simulated hand
65 .With article or article holder
66 MISCELLANEOUS

* * *

CROSS-REFERENCE ART COLLECTIONS

* * *

900 STENT FOR HEART VALVE
901 METHOD OF MANUFACTURING PROSTHETIC DEVICE

CLASS 800 MULTICELLULAR LIVING ORGANISMS AND UNMODIFIED PARTS THEREOF

2	NONHUMAN ANIMAL
200	PLANT, SEEDLING OR PLANT PART
205	.Recombinant plant
220	.Somatic cell fusion product or somatic cell fusion-derived plant
230	.Mutant plant or plant derived from mutagenesis
235	..Monocotyledon (e.g., corn, rice, wheat, etc.)
240	.Plant having grafted product (i.e., grafted plant)
250	.Genetically modified seed
255	..Dicotyledon
	******************************
	DIGESTS
	******************************
DIG 1	Animal, genetically modified, transgenic
DIG 2	Animal, genetically modified, gene therapy or replacement
DIG 3	Animal, genetically modified, spontaneous or induced mutant
DIG 4	Animal, produced by culturing or breeding techniques, may be genetically modified
DIG 5	Animal, nongenetically modified
DIG 6	Embryo (animal origin)
DIG 7	Multicellular alga
DIG 8	Multicellular fungus
DIG 9	Plant, dicotyledon
DIG 10	.Caryophyllaceae (e.g., carnation, "pink" family, etc.)
DIG 11	.Compositae
DIG 12	..Chrysanthemum
DIG 13	..Lettuce
DIG 14	..Sunflower
DIG 15	.Cruciferae
DIG 16	..Cabbage
DIG 17	..Rapeseed
DIG 18	.Cucurbitaceae (e.g., cucumber, etc.)
DIG 19	..Melon
DIG 20	..Pumpkin
DIG 21	..Squash
DIG 22	.Geraniaceae (e.g., geranium, etc.)
DIG 23	.Leguminosae (e.g., peanut, mimosa, pea, Genista monosperma, etc.)
DIG 24	..Alfalfa
DIG 25	..Snap bean
DIG 26	..Soybean
DIG 27	.Malvaceae (e.g., cotton, etc.)
DIG 28	.Oleaceae (e.g., lilac, Lingustrum, etc.)
DIG 29	.Ranunculaceae (e.g., buttercup, Anemone, liverwort, Clematis, etc.)
DIG 30	.Rosaceae
DIG 31	..Apple
DIG 32	..Cherry
DIG 33	..Nectarine
DIG 34	..Peach
DIG 35	..Pear
DIG 36	..Rose
DIG 37	..Strawberry
DIG 38	.Rutaceae (e.g., citrus fruit, clementine, etc.)
DIG 39	..Orange
DIG 40	.Solanaceae
DIG 41	..Bell pepper
DIG 42	..Potato
DIG 43	..Tobacco
DIG 44	..Tomato
DIG 45	.Umbelliferae (e.g., parsley, celery, Bupleurum sp., etc.)
DIG 46	..Carrot
DIG 47	.Woody ornamental or forest
DIG 48	..Poplar
DIG 49	Plant, gymnosperm (e.g., spruce, etc.)
DIG 50	.Fir
DIG 51	.Pine
DIG 52	Plant, monocotyledon
DIG 53	.Amaryllidaceae (e.g., narcissus, alstroemeria, etc.)
DIG 54	.Bromeliaceae (e.g., pineapple, Aechmea sp., etc.)
DIG 55	.Gramineae (or Poaceae; e.g., lawn grass, etc.)
DIG 56	..Corn or maize
DIG 57	..Rice
DIG 58	..Wheat
DIG 59	.Liliaceae (e.g., onion, etc.)
DIG 60	..Asparagus
DIG 61	..Lily
DIG 62	.Orchidaceae (e.g., orchid, etc.)
DIG 63	Fiber plant (e.g., cotton, flax, Cannabis sp., etc.)
DIG 64	Fruit plant, herbaceous (e.g., melon, strawberry, pineapple, etc.)
DIG 65	Fruit plant, woody (e.g., blackberry, fruit tree, kiwi fruit, etc.)
DIG 66	Nut-bearing plant (e.g., almond, peanut, pecan, etc.)
DIG 67	Ornamental flowering plant, herbaceous (e.g., petunia, iris, tulip, mimosa, Linum sp., poinsettia, chrysanthemum, etc.)
DIG 68	Ornamental flowering plant, woody (e.g., rose, rhododendron, poinsettia, lilac, Clematis, etc.)
DIG 69	Seed oil quality
DIG 70	Seed protein quality
DIG 71	Vegetable plant

CROSS-REFERENCE ART COLLECTIONS

1 MOBILE ROBOT
2 ARM MOTION CONTROLLER
3 .Teaching system
4 ..Manual lead through
5 ..Machine driven lead through
6 .Communication with another machine
7 ..Conveyor
8 ..Robot
9 .Closed loop (sensor feedback controls arm movement)
10 ..Sensor physically contacts and follows work contour
11 .Mechanically actuated present limit
12 ..Cam
13 ..Limit switch
14 ARM MOVEMENT (SPATIAL)
15 .Jointed arm
16 .Cartesian (X-Y-Z arm)
17 .Cylindrical
18 .Spherical
19 DRIVE SYSTEM FOR ARM
20 .With provision for altering speed of driven element
21 .Flaccid drive element
22 .Fluid motor
23 .Electric motor
24 ..Stepper motor
25 .Gearing
26 ..Including bevel gear
27 ARM PART
28 .Joint
29 ..Wrist
30 END EFFECTOR
31 .Gripping jaw
32 ..Servo-actuated
33 ...Tactile sensor
34 ...Force feedback
35 ...Proximity
36 ..Actuating means
37 ...Fluid motor
38 ...Electric motor
39 ..Jaw structure
40 .Vacuum or mangetic
41 .Tool
42 ..Welding
43 ..Spray painting or coating
44 .Inspection
45 .Compliance
46 SENSING DEVICE
47 .Optical
48 COUNTERBALANCE
49 PROTECTIVE DEVICE
50 MISCELLANEOUS

CLASS 902 ELECTRONIC FUNDS TRANSFER

1 WITH ELECTRONIC MEANS PROVIDING SECURITY
2 .Protects transmitted data (e.g., encryption or decryption)
3 .Evaluates biometrics
4 .Means to read data stored on identifier*
5 ..And to verify identity of user*
6 .Image processor (e.g., video camera)
7 .Means to identify counterfeit money
8 TERMINAL* WITH MEANS PERMITTING DEPOSIT OR WITHDRAWAL (E.G., ATM)
9 .With secure receptacle (e.g., safe, depository)
10 ..Remote from terminal
11 ..And value discriminator
12 ..Serving as both depository and source for (e.g., note dispencing recycling)
13 ..Dispensing (e.g., money cassette)
14 .With cash dispenser
15 ..Including currency feeder
16 ...Sensitive to erroneous passage of plural bills
17 .With particular feeder or counter feature
18 .With printer
19 ..And page turner
20 .With specific data input means (e.g., keyboard)
21 .With specific data output means or indicator
22 TERMINAL* REGISTERS TRANSACTION* (E.G., POINT OF SALE TERMINAL*)
23 FOR ENTERTAINMENT, AMUSEMENT, OR GAMBLING
24 FOR USE WITH GENERAL PURPOSE TERMINAL* (E.G., HOME BANKING)
25 SPECIFIC IDENTIFIER* (E.G., BANK CARD)
26 .Including semiconductor chip (e.g., smart card)
27 .Magnetically encoded
28 ..Designed to resist counterfeiting
29 .Specific process of manufacture
30 SUPPORT OR ENCLOSURE (E.G., KIOSK)
31 .Selectively prevents access to terminal*
32 .For plurality of terminals*
33 .For drive-in installation
34 .Collapsible
35 .Accommodates user (i.e., walk-in enclosure)
36 PAPER SUPPLY (E.G., RECEIPT)
37 SYSTEM*
38 .Error or fault recovery
39 .Particular communication feature
40 .Transaction* processing
41 MISCELLANEOUS

Class 930 is intended to be used as a searching area for patents which disclose an identifiable peptide or protein sequence derived from at least four specified named amino acids. The class consists of two wholly separable parts, cross-reference art collections 10-320 and digests 500-822. Rules of placement into these areas vary. Please read the rules pertaining to placement and search. Any search in this class is clearly OPTIONAL. It is hoped, however, that Class 930 will be useful and will be searched.

Class 930, cross-reference art collections 10-320, provide for patents which disclose a peptide or protein sequence of at least four amino acids covalently bound through at least one normal peptide link. It should be noted that the patents in these art collections must contain an actual amino acid sequence. A patent containing a reference, in name only, to a peptide or protein compound with a known structure is not included. For example, though the amino acid sequence of insulin is well-known, unless a sequence of at least four amino acids from the insulin structure is shown in the patent, it is not included in these art collections.

The following special notes are included in the Manual of Classification for convenience. They are not to be used in lieu of the class definitions for those art collections (10-320).

Note 1. Compounds containing a modified or unusual amino acid (art collections 20-25 are placed in all appropriate art collections of the class (20-320).

Note 2. The sole presence of a nonpeptide or abnormal peptide link in a linear peptide is not considered an indication of a modified or unusual amino acid. (See art collection 30).

Note 3. See only art collection 22 for halogen containing compounds which are radioactive.

Note 4. The sulfur contained in the compounds of art collection 24 must be other than or must be in addition to, that naturally occurring in one or more of the natural amino acids, cysteine, cystine, or methionine.

Note 5. Art collection 30 does not include those peptides which contain as the sole nonpeptide or abnormal peptide link, an interchain disulfide bridge.

Note 6. Compounds included in art collections 200 (bacterial), 210 (parasitic), and 220-224 (viral), are only those homologous to the microorganism.

Note 7. Compounds containing a cys-cys disulfide bridge between nonadjacent cysteine residues are placed in art collection 260 with the exception of those compounds such as atrial natriuretic peptide, vasopressin or others containing disulfide bridges which are appropriate for art collections 40-170.

Note 8. Art collection 270 does not include peptides or proteins which are cyclic solely due to intrachain disulfide bridges, nor does it include peptides or proteins which are appropriate for art collections 40-170.

Note 9. Art collection 320 is incomplete. It is intended as a repository for compounds which have been specifically modified to prevent enzymatic degradation, but which are not more appropriately placed in any of the other nonmainline art collections.

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CROSS-REFERENCE ART COLLECTIONS

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10 PEPTIDE OR PROTEIN SEQUENCE
20 .Containing modified or unusual amino acid (See note 1 and note 2)
21 ..Containing D-amino acid
22 ..Containing radioactive atom (See note 3)
23 ..Containing halogen (See note 3)
24 ..Containing sulfur (See note 4)
25 ..Containing heavy metal or salt thereof
30 .Linear peptide or protein containing a nonpeptide or abnormal peptide link (See note 5)
31 ..Retro-inverted
40 .Angiotensin; related peptides
50 .Atrial or brain natriuretic peptide; related peptides
60 .Calcitonin; related peptides
70 .Corticotropin; related peptides
80 .Endorphin or Enkephalin; related peptides
90 .Erythropoietin; related peptides
100 .Factor VIII, AHF; related peptides
110 .Gonadotropin; related peptides
120 .Growth hormone, growth factor other than T-cell or B-cell growth factor, and growth hormone releasing factor; related peptides

PEPTIDE OR PROTEIN SEQUENCE

130 .Luteinizing hormone-releasing hormone (LH-RH); related peptides
140 .Lymphokine; related peptides
141 ..Interleukin
142 ..Interferon
143 ..Lymphotoxin
144 ..Tumor necrosis factor
145 ..Colony stimulating factor
150 .Oxytocin or vasopressin; related peptides
160 .Somatostatin; related peptides
170 .Vasoactive intestinal peptides; related peptides
180 .Thymus derived hormone or factor; related peptides
190 .Antibiotic
200 .Bacterial peptide or bacterial protein (See note 6)
210 .Parasitic peptide or parasitic protein (See note 6)
220 .Viral peptide or viral protein (See note 6)
221 ..Retrovirus related, or human immunodeficiency virus related, or simian immunodeficiency virus related
222 ..Foot and mouth disease related
223 ..Hepatitis related
224 ..Herpes related
230 .Multicellular plant peptide or multicellular plant protein
240 .Enzyme or isoenzyme
250 .Enzyme inhibitor
260 .Containing Cys-Cys disulfide bridge between nonadjacent cysteine residues (See note 7)
270 .Cyclic peptide or cyclic protein (See note 8)
280 .Bound to a nonpeptide drug, nonpeptide label, nonpeptide carrier, or a nonpeptide resin
290 .Polyamino acid or polypeptide with an uninterrupted series of peptide repeating units
300 .Signal or leader sequence
310 .Linker sequence
320 .Modification to prevent enzymatic degradation (See note 9)

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DIGESTS

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Digests 500-822 are equivalent to the European Patent Office's C07K 5/00 - C07K 5/12B; C07K 7/02 - C07K 7/10B; C07K 7/50 - C07K 9/00F4; C07K 13/00; and C07K 99/00B - C07K 99/84 classifications. See section B under the main class definition of Class 930 for information relating to these digests.

DIG 500 PEPTIDES CONTAINING SACCHARIDE RADICALS AND HAVING A FULLY DEFINED SEQUENCE OF AMINO ACIDS AND WHEREIN THE PEPTIDE SEQUENCE IS NOT PART OF A RING STRUCTURE, E.G., BLEOMYCIN, PHLEOMYCIN, MURAMYLPEPTIDES, ETC., (C07K-9/00D, 9/00D2, 9/00D4, 9/00D9)
DIG 510 PEPTIDES CONTAINING SACCHRIDE RADICALS AND HAVING A FULLY DEFINED SEQUENCE OF AMINO ACIDS WHEREIN THE PEPTIDE SEQUENCE IS PART OF A RING STRUCTURE AND IS DIRECTLY ATTACHED TO A HETERO ATOM OF THE SACCHARIDE ATOM, E.G., ACTAPLANIN, AVOPARCIN, RISTOMYCIN, VANCOMYCIN, ETC., (C07K-9/00F2)
DIG 520 PEPTIDES CONTAINING SACCHARIDE RADICALS AND HAVING A FULLY DEFINED SEQUENCE OF AMINO ACIDS WHEREIN THE PEPTIDE SEQUENCE IS PART OF A RING STRUCTURE AND IS NOT DIRECTLY ATTACHED TO A HETERO ATOM OF THE SACCHARIDE ATOM (C07K-9/00F4)
DIG 530 PROTEINS HAVING A FULLY DEFINED SEQUENCE OF AMINO ACIDS OR DERIVATIVES THEREOF, I.E., MORE THAN 100 AMINO ACIDS (C07K-13/00)
DIG 532 CYCLIC PEPTIDES DERIVED FROM AT LEAST FIVE AMINO ACIDS AND CONTAINING AT LEAST ONE ABNORMAL PEPTIDE LINK (C07K-7/50)
DIG 533 .With only normal peptide links in the ring (C07K-7/52)
DIG 534 ..With all amino acids in L-form (C07K-7/52A)
DIG 535 ..With at least one amino acid in D-form (C07K-7/52B)
DIG 536 .With at least one abnormal peptide link in the ring (C07K-7/54)
DIG 537 ..The cyclisation not occurring through the 2,4-diamino-butanoic acid (C07K-7/56)
DIG 538 ...Bacitracins; related peptides (C07K-7/58)
DIG 539 ....With all amino acids in L-form (C07K-7/58A)
DIG 541 ....With at least one amino acid in D-form (C07K-7/58B)
DIG 542 ..The cyclisation occurring through the 4-amino group of the 2,4-diamino-butanoic acid (C07K-7/60)
DIG 543 ...Polymyxins; related peptides (C07K-7/62)
DIG 544 ....With all amino acids in L-form (C07K-7/62A)
DIG 545 ....With at least one amino acid in D-form (C07K-7/62B)
DIG 546 CYCLIC PEPTIDES DERIVED FROM AT LEAST FIVE AMINO ACIDS AND CONTAINING ONLY NORMAL PEPTIDE LINKS (C07K-7/64)
DIG 547 .Gramicidins S, C; Tyrocidins A, B, C; related peptides (C07K-7/66)
DIG 548 ..With all amino acids in L-form (C07K-7/66A)
DIG 549 ..With at least one amino acid in D-form (C07K-7/66B)

In digests 550-772 and 790-822, sequences modified by removal or addition of amino acids, by substitution of amino acids by others, or by a combination of these modifications, are classified as the parent peptide when the combined number of modifications totals less than 50% of the parent fragment. Fragments of these peptides containing at least 5 amino acids, modified or not as mentioned above, are classified as the parent peptide. NOTE: In digests 590, 630 and 680 the brackets have been used to indicate the presence of a specified amino acid. If the specified amino acid is absent then the molecule contains a covalent bond directly between the amino acids noted before and after the.

DIG 550 PEPTIDES CONTAINING THE SEQUENCE (A-Leu-Glu-Ile-Lys-Orn-Ile-Phe-His-Asp-Asp-NH2), A BEING H OR Ile-Cys, E.G., BACITRACINS A OR F OR RELATED PEPTIDES (C07K-99/00B)

PEPTIDES CONTAINING THE SEQUENCE (A-Leu-Glu-Ile-Lys-Orn-Ile-Phe-His-Asp-Asp-NH2), A BEING H OR Ile-Cys, E.G., BACITRACINS A OR F OR RELATED PEPTIDES (C07K-99/00B)

DIG 551 .With all amino acids in L-form (C07K-99/00B1)

DIG 552 .With at least one amino acid in D-form (C07K-99/00B2)

DIG 553 PEPTIDES CONTAINING THE C-TERMINAL SEQUENCE (X-Cys-Phe-Gly-Phe-Gly-Gly-Arg-A-Asp-Arg-Ile-Gly-Ala-Gln-Ser-Gly-Leu-Gly-Cys-Y) WITH X BEING NH, Y BEING -OH, NH, OR PART OF THE SEQUENCE -Asn-Ser-Phe-Arg-Tyr-Arg-Arg- AND A BEING Met OR Ile, E.G., ATRIOPEPTINE; ATRIAL NATRIURETIC PEPTIDES AND PROTEINS (ANP) (C07K-99/00C)

DIG 554 .With all amino acids in L-form (C07K-99/00C1)

DIG 555 .With at least one amino acid in D-form (C07K-99/00C2)

DIG 556 PEPTIDES CONTAINING THE SEQUENCE (Asp-Pro-A-Tyr-B-C-Val-Ser-Asn-Ala-Asp-Leu-Met-Asp-Phe-Lys-Asn-Leu-Leu-Y), WITH A, B, C BEING AMINO ACIDS, AND Y BEING A PEPTIDE SEQUENCE, E.G., CARDIODILATIN (SEE SUBCLASS 553 FOR PATENTS THAT CONTAIN THE AERIAL NATRIURETIC PEPTIDE SEQUENCE) (C07K-99/00D)

DIG 557 .With all amino acids in L-form (C07K-99/00D1)

DIG 558 .With at least one amino acid in D-form (C07K-99/00D2)

DIG 559 PEPTIDES CONTAINING THE SEQUENCE (Tyr-Ala-Asp-Ala-Ile-Phe-Tyr-Asn-Ser-Tyr-Arg-Lys-Val-Leu-Gly-Gln-Leu-Ser-Ala-Arg-Lys-Leu-Leu-Gln-Asp-Ile-Met-A-Arg-Gln-Gln-Gly-Glu-B-Asn- Gln-Glu-C-Gly-Ala-D-E-Arg-Leu-NH) WITH A BEING Ser OR Asn, B BEING Ser OR Arg, C BEING Arg OR Gln, D BEING Arg OR Lys, AND E BEING Ala, Val, OR Phe, E.G., SOMATOLIBERIN (GONADOTROPIN RELEASING FACTOR) (C07K-99/00F)

DIG 560 PEPTIDES CONTAINING THE SEQUENCE (Tyr-D-Ala-Phe-Gly-Tyr -Pro-Ser), E.G., DERMORPHIN (C07K-99/00H)

DIG 565 PEPTIDES CONTAINING THE SEQUENCE (Cys-Tyr-A-Gln-Asn-Cys-Pro-B-Gly-NH2), WITH A BEING Ile OR Phe, B BEING Leu OR Arg OR Lys OR S-S BRIDGE 1-6, E.G., OXYTOCIN, VASOPRESSIN, OR A RELATED PEPTIDE (C07K-99/02)

DIG 566 .With all amino acids in L-form (C07K-99/02A)

DIG 567 .With at least one amino acid in D-form (C07K-99/04)

DIG 570 PEPTIDES CONTAINING THE SEQUENCE (Ser-Tyr-Ser-Met-Glu-His-Phe-Arg-Trp-Gly-Lys-Pro-Val-Gly-Lys-Lys-Arg-Arg-Pro-Val-Lys-Val-Tyr-Pro-Asp-Gly-A-B-C-D-E-Ala-Glu-Ala-Phe-Pro-Leu-Glu-Phe-OH), A-B-C-D-E BEING Glu-Ala-Glu-Asp-Ser- OR Ala-Glu-Asp-Glu-Leu OR Ala-Glu-Asp-Glu-Ser, E.G., CORTICOTROPIN (ACTH) OR RELATED PEPTIDES (C07K-99/06)

DIG 571 .With all amino acids in L-form (C07K-99/06A)

DIG 572 .With at least one amino acid in D-form (C07K-99/08)

DIG 580 PEPTIDES CONTAINING THE SEQUENCE (CH3CO-Ser-Tyr-Ser-Met-Glu-His-Phe-Arg-Trp-Gly-Lys-Pro-Val-NH2), E.G., A-MSH, OR RELATED PEPTIDES (FRAGMENTS WHICH ARE COMMON WITH DIGEST 570 ARE ALSO IN THAT CLASSIFICATION) (C07K-99/10)

DIG 581 .With all amino acids in L-form (C07K-99/10A)

DIG 582 .With at least one amino acid in D-form (C07K-99/12)

DIG 590 PEPTIDES CONTAINING THE SEQUENCE (A-Arg-Val-Tyr-Val- Ile-His-Pro-Phe-B), A BEING Asp OR Asn, AND B BEING -OH OR His-Leu-OH, E.G., ANGIOTENSIN I, PEPSITENSIN, OR RELATED PEPTIDES (C07K-99/14)

DIG 591 .With all amino acids in L-form (C07K-99/14A)

DIG 592 .With at least one amino acid in D-form (C07K-99/16)

DIG 600 PEPTIDES CONTAINING THE SEQUENCE (A-Arg-Pro-Pro-Gly-Phe-Ser-Pro-Phe-Arg-OH), A BEING H OR Lys, E.G., KALLIDIN, BRADYKININ, ETC. OR RELATED PEPTIDES (C07K-99/18)

DIG 601 .With all amino acids in L-form (C07K-99/18A)

DIG 602 .With at least one amino acid in D-form (C07K-99/20)

DIG 610 PEPTIDES CONTAINING THE SEQUENCE (Pgl-Pro-Ser-Lys-Asp-Ala-Phe-Ile-Gly-Leu-Met-NH2), E.G., ELEDOISIN, OR RELATED PEPTIDES (C07K-99/22)

DIG 611 .With all amino acids in L-form (C07K-99/22A)

DIG 612 .With at least one amino acid in D-form (C07K-99/24)

DIG 620 PEPTIDES CONTAINING THE SEQUENCE (Gly-Ile-Val-Glu-Gln-Cys-Cys-A-B-C-Cys-Ser-Leu-Tyr-Gln-Leu-Glu-Asn-Tyr-Cys -Asn-PH) and (Phe-Val-Asn- Gln-His-Leu-Cys-Gly-Ser-His-Leu-Val-Glu-Ala-Leu-Tyr-Leu-Val-Cys-Gly-Glu- Arg-Gly-Phe-Phe-Tyr-Tyr-Pro-Lys-D), A-B-C BEING -Ala-Ser-Val-, OR -Ala-Gly-Val-, OR -Thr-Ser-Ile-, OR -Ala-Ser-Val-, D BEING Ala-OH OR Thr-OH, E.G., HUMAN INSULIN OR RELATED PEPTIDES (C07K-99/26)

DIG 621 .With all amino acids in L-form (C07K-99/26A)

DIG 622 .With at least one amino acid in D-form (C07K-99/28)

DIG 630 PEPTIDES CONTAINING THE SEQUENCE (Pgl-Gly-Pro-Trp-A-Glu-Glu-B-Glu-B-Ala-Tyr- Gly-Trp-Met- Leu-Asp-Phe- Tyr- NH2, A BEING Met, Leu or Val, B BEING Glu OR Ala, E.G., GASTRIN OR RELATED PEPTIDES, ETC. (C07K-99/30)

DIG 631 .With all amino acids in L-form (C07K-99/30A)

DIG 632 .With at least one amino acid in D-form (C07K-99/32)

DIG 640 PEPTIDES CONTAINING THE SEQUENCE (His-Ser-Gln-Gly-Thr-Phe-Thr-Ser-Asp-Tyr-Lys-Ser-Tyr-Leu-Asp-Ser-Arg-Arg-Ala-Gln-Asp-Phe-Val-Gln-Trp-Leu-Met-Asn-Thr-OH), E.G., GLUCAGON OR RELATED PEPTIDES, ETC. (C07K-99/34)

DIG 641 .With all amino acids in L-form (C07K-99/34A)

DIG 642 .With at least one amino acid in D-form (C07K-99/36)

DIG 650 PEPTIDES CONTAINING THE SEQUENCE (His-Ser-Asp-Gly-Thr-Phe-Thr-Ser-Glu-Leu-Ser-Arg-Leu-Arg-Asp-Ser-Ala-Arg-Leu-Gln-Arg-Leu-Leu-Gln-Gly-Leu-Val-NH2), E.G., SECRETIN OR RELATED PEPTIDES, ETC. (FRAGMENTS CONTAINING THE UNCHANGED SEQUENCE 4-8, I.E., Gly-Thr-Phe-Thr-Ser ARE ALSO CLASSIFIED IN DIGEST 640) (C07K-99/38)

DIG 651 .With all amino acids in L-form (C07K-99/38A)

DIG 652 .With at least one amino acid in D-form (C07K-99/40)

DIG 660 PEPTIDES CONTAINING THE SQUENCE (Cys-Ser-Asn-Leu-Ser-Thr-Cys-Val-Leu-Ser-Ala-Tyr-Trp-Arg-Asn-Leu-Asn-Asn-Phe-His-Arg-Phe-Ser-Gly-Met-Gly-Phe-Gly-Pro-Glu-Thr-Pro-OH), E.G., A-THYROCALCITONIN, ETC., I.E., PORCINE OR RELATED PEPTIDES (C07K-99/42)

DIG 661 .With all amino acids in L-form (C07K-99/42A)

DIG 662 .With at least one amino acid in D-form (C07K-99/44)

DIG 670 PEPTIDES CONTAINING THE SEQUENCE (Cys-Gly-Asn-Leu-Ser-Thr-Cys-Met-Leu-Gly-Thr-Tyr-Thr-Glu-Asp-Phe-Asn-Lys-Phe-His-Thr-Phe-Pro-Gln-Thr-Ala-Ile-Gly-Val-Gly-Ala-Pro-OH), E.G., CALCITONIN h (HUMAN) OR RELATED PEPTIDES (FRAGMENTS WHICH ARE COMMON WITH DIGEST 660 ARE ALSO IN THAT CLASSIFICATION) (C07K-99/46)

DIG 671 .With all amino acids in L-form (C07K-99/46A)

DIG 672 .With at least one amino acid in D-form (C07K-99/48)

DIG 680 PEPTIDES CONTAINING THE SEQUENCE (HCO-Val- Ile-Gly-Ala-Leu-Ala-Val-Val-Val-Trp-Leu-Trp- Phe-Leu-Trp-Leu-Trp-NHCH2CH2OH), E.G., GRAMICIDINS A OR B OR RELATED PEPTIDES (C07K-99/50)

DIG 681 .With all amino acids in L-form (C07K-99/50A)

DIG 682 .With at least one amino acid in D-form (C07K-99/52)

DIG 690 PEPTIDES CONTAINING THE SEQUENCE (Pgl-His-Trp-Ser-Tyr-Gly-Leu-Arg-Pro-Gly-NH2), E.G., LH-RH, LRF, OR RELATED PEPTIDES (C07K-99/54)

DIG 691 .With all amino acids in L-form (C07K-99/54A)

DIG 692 ..1-Pgl, 10-Gly derivatives (C07K-99/54A1)

DIG 693 ..Des-1-Pgl derivatives (C07K-99/54A2)

DIG 694 ..Des-10-Gly derivatives (C07K-99/54A3)

DIG 695 .With at least one amino acid in D-form (C07K-99/56)

DIG 696 ..1-Pgl, 10-Gly derivatives (C07K-99/56A1)

DIG 697 ..Des-1-Pgl derivatives (C07K-99/56A2)

DIG 698 ..Des-10-Gly derivatives (C07K-99/56A3)

DIG 700 PEPTIDES CONTAINING THE SEQUENCE (Ala-Gly-Cys-Lys-Asn-Phe-Phe-Trp-Lys-Thr-Phe-Thr -Ser-Cys-OH), E.G., SOMATOSTATIN, SRIF, OR RELATED PEPTIDES (C07K-99/58)

DIG 701 .All amino acids in L-form (C07K-99/58A)

DIG 702 ..S-S bridge 3,14 being modified (for the reduced form Cys-3 or Cys-14 being modified) (C07K-99/58A1A)

DIG 703 ...Modification at Cys-3 (C07K-99/58A1B)

DIG 704 ...Modification at Cys-14 (C07K-99/58A1C)

DIG 705 ...Modification at both Cys-3 and Cys-14 (C07K-99/58A1D)

DIG 706 .At least one amino acid in D-form (C07K-99/60)

DIG 707 ..S-S bridge 3,14 being modified (for the reduced form Cys-3 or Cys-14 being modified) (C07K-99/A1)

DIG 708 ...Modification at Cys-3 (C07K-99/60A1B)

DIG 709 ...Modification at Cys-14 (C07K-99/60A1C)

DIG 710 ...Modifications at both Cys-3 and Cys-14 (C07K-99/60A1D)

DIG 720 PEPTIDES CONTAINING THE SEQUENCE (Tyr-Gly-Gly-Phe-Met-Thr-Ser-Glu-Lys-Ser-Gln-Thr-Pro-Leu-Val-Thr-Leu-Phe-Lys-Asn-Ala-Ile-Ile-Lys-Asn-Ala-His-Lys-Lys-Gly-Glu-OH), E.G., B-ENDORPHIN OR RELATED PEPTIDES (C07K-99/62)

DIG 721 .With all amino acids in L-form (C07K-99/62A)

DIG 722 .With at least one amino acid in D-form (C07K-99/64)

DIG 730 PEPTIDES CONTAINING THE SEQUENCE (Tyr-Gly-Gly-Phe-Met-Thr-Ser-Glu-Lys-Ser-Gln-Thr-Pro-Leu-Val-Thr-OH), E.G., LIPOTROPIN OR RELATED PEPTIDES (FRAGMENTS WHICH ARE COMMON WITH DIGEST 720 ARE ALSO IN THAT CLASSIFICATION) (C07K-99/66)

DIG 731 .With all amino acids in L-form (C07K-99/66A)

DIG 732 .With at least one amino acid in D-form (C07K-99/68)

DIG 740 PEPTIDES CONTAINING THE SEQUENCE (Try-Gly-Gly-Phe-X), X BEING AN AMINO ACID, E.G., ENKEPHALINS OR RELATED PEPTIDES (SEQUENCES CONTAINING MORE THAN FIVE AMINO ACIDS ARE CLASSIFIED IN DIGESTS 720 OR 730) (C07K-99/70)

DIG 741 .With all amino acids in L-form (C07K-99/70A)

DIG 742 .With at least one amino acid in D-form (C07K-99/72)

DIG 750 PEPTIDES CONTAINING THE SEQUENCE (Arg-Lys-Asp-Val-Tyr-Val-), E.G., THYMIN I OR II, THYMOPOIETINS, OR RELATED PEPTIDES (C07K-99/74)

DIG 751 .With all amino acids in L-form (C07K-99/74A)

DIG 752 .With at least one amino acid in D-form (C07K-99/76)

DIG 760 PEPTIDES CONTAINING THE SEQUENCE (Asp-A-Gly-Pro-Tyr-B-Met-Glu-His-Phe-Arg-Trp-Gly-Ser-Pro-Pro-Lys-Asp-OH), A BEING Glu or Ser, B BEING Lys or Arg, E.G., B-MELANOTROPINS OR RELATED PEPTIDES (C07K-99/78)

DIG 761 .With all amino acids in L-form (C07K-99/78A)

DIG 762 .With at least one amino acid in D-form (C07K-99/80)

DIG 770 PEPTIDES CONTAINING THE SEQUENCE (Thr-Val-Pro-Ser- (N-Methyl)Val-) (C07K-99/82)

DIG 771 .With all amino acids in L-form (C07K-99/82A)

DIG 772 .With at least one amino acid in D-form (C07K-99/84)

DIG 780 TETRAPEPTIDES (DERIVED FROM ONLY FOUR AMINO ACIDS) (C07K-5/10)

DIG 781 .Contains at least one ring formed only through peptide links (C07K-5/12B)

	TETRAPEPTIDES (DERIVED FROM ONLY FOUR AMINO ACIDS) (C07K-5/10)
DIG 782	.With at least one amino acid in D-form (C07K-5/10Z)
DIG 783	.The first amino acid being heterocyclic (Pro) (C07K-5/10H)
DIG 784	.The first amino acid contains the same number of amino and carboxylic acid or derivative groups (neutral) (C07K-5/10A)
DIG 785	..And aliphatic (C07K-5/10A1)
DIG 786	..And carbocyclic ring (Phe) (C07K-5/10A2)
DIG 787	.The first amino acid contains more amino groups than carboxylic acid or derivative groups (basic) (C07K-5/10B)
DIG 788	.The first amino acid contains more carboxylic acid or derivative groups than amino groups (acidic) (C07K-5/10C)
DIG 789	..Asp-X-Y-Z, Asn-X-Y-Z, or derivatives thereof, X, Y and Z being amino acids (C07K-5/10C1)
DIG 790	LINEAR PEPTIDES CONTAINING AT LEAST ONE ABNORMAL PEPTIDE LINK AND DERIVED FROM 5-100 AMINO ACIDS (C07K-7/02)
DIG 800	LINEAR PEPTIDES CONTAINING ONLY NORMAL PEPTIDE LINKS AND DERIVED FROM 5-100 AMINO ACIDS (C07K-7/04)
DIG 801	.Contains only 5-11 amino acids (C07K-7/06)
DIG 802	..With all amino acids in L-form (C07K-7/06A)
DIG 803	..With at least one amino acid in D-form (C07K-06B)
DIG 810	.Contains only 12-20 amino acids (C07K-7/08)
DIG 811	..With all amino acids in L-form (C07K-7/08A)
DIG 812	..With at least one amino acid in D-form (C07K-7/08B)
DIG 820	.Contains 21-100 amino acids (C07K-7/10)
DIG 821	..With all amino acids in L-form (C07K-10A)
DIG 822	..With at least one amino acid in D-form (C07K-7/10B)

CLASS 935 GENETIC ENGINEERING: RECOMBINANT DNA TECHOLOGY, HYBRID OR FUSED CELL TECHNOLOGY AND RELATED MANIPULATIONS OF NUCLEIC ACIDS

1 OBTAINING THE DESIRED GENE; DNA, RNA PER SE AND THE MODIFICATION THEREOF OTHER THAN VECTOR MODIFICATION
2 .DNA - RNA hybrid
3 .RNA
4 ..mRNA
5 ..2-100 nucleotides in length, e.g., t-RNA, etc.
6 .DNA, e.g., regulatory sequences, etc.
7 ..Homopolymeric, e.g., poly d(A) sequence, etc.
8 ..12-75 nucleotides in length, e.g., primers, etc.
9 ..Structural gene sequence
10 ...Modified structural gene, e.g., nonnaturally occuring sequence, etc.
11 ...Polypeptide
12 ....Antigenic material
13 ....Hormone, e.g., human growth factor, insulin, etc.
14 ....Enzyme
15 ....Antibody
16 .Methods of producing DNA or RNA other than by expression vectors, e.g., culture of cells high in DNA, etc.
17 ..Cell free production
18 ...cDNA synthesis
19 .Isolation or purification of DNA or RNA
20 ..RNA
21 ...mRNA
22 VECTORS AND METHODS OF MODIFYING VECTORS
23 .Inserting a gene into a vector to form a recombinant vector, i.e., cleavage and ligation
24 ..Vector utilized, e.g., episomes, etc.
25 ...Plant virus
26 ...Cosmid
27 ...Plasmid
28 ....Yeast
29 ....Prokaryotic
30 ....Plant
31 ...Bacteriophage
32 ...Animal virus, e.g., SV40, etc.
33 METHODS OF ENHANCING OR DIMINISHING EXPRESSION
34 .Eukaryotic cell
35 ..Plant cell
36 ..Transcription
37 ..Yeast cell
38 .Prokaryotic cell
39 ..Transcription
40 ...Operon selection
41 ....Promoter, e.g., portable promoters, etc.
42 ..Gene dosage modification, e.g., copy number amplification, etc.
43 ...Inducible, e.g., temperature inducible, etc
44 ..Translation
45 ...Ribosome binding site
46 ...Initiation
47 .Fused protein or peptide
48 ..Signal peptide, e.g., secretion, etc.
49 .Post translational modification
50 ..Glycosylation
51 ..Peptide bond cleavage
52 METHODS OF INTRODUCING A GENE INTO A HOST CELL, E.G., TRANSFORMATION OR TRANSFECTION, ETC.
53 .Microinjection
54 .Microencapsulation, e.g., liposome vesicle etc.
55 .Using vector, e.g., plasmid, etc.
56 ..Plasmid
57 ..Virus
58 ...Phage, e.g., phage lambda, etc.
59 METHOD OF USE OF GENETICALLY ENGINEERED CELLS, E.G., OIL SPILL CLEANUP, ETC.
60 .To produce an identified chemical product e.g., amino acid, etc.
61 ..Yield optimization
62 .Control of genetic diseases or defects by use of added gene
63 .Use im animal husbandry
64 .Use in agriculature
65 .Vaccine production
66 CELLS CONTAINING A VECTOR AND/OR EXOGENOUS GENE PER SE; PROPAGATION THEREOF; OTHER MEMBRANE ENCAPSULATED DNA, E.G., PROTOPLASTS, ETC.
67 .Plant cells
68 .Fungal cells
69 ..Yeast cells
70 .Animal cell
71 ..Human cell
72 .Bacteria
73 ..Escherichia
74 ..Bacillus
75 ..Streptomyces
76 ASSAY RELATED TO GENETIC ENGINEERING
77 .Methods of analysis of nucleic acids
78 ..Including hybridization
79 .Methods of selection of recombinant gene containing vector; materials therefore, e.g., replica plating, etc.
80 ..Gene library manipulation
81 ..Antigen-antibody
82 ..Enzyme activity
83 ..Host suicide
84 ..Selection medium
85 GENETIC ENGINEERING APPARATUS
86 .Analytical, e.g., for autoradiography, etc.
87 ..Automated
88 .Synthesis, e.g., peptide or gene synthesizers, etc.
89 HYBRID OR FUSED CELL TECHNOLOGY, E.G., HYBRIDOMA, ETC.
90 .Method of selection of the desired cell
91 ..Of plant cells, e.g., protoplasts, etc.
92 ..Using positive selection technique
93 .Method of production of hybrid or fused cells, e.g., chromosome or genome transfer techniques, etc.
94 ..Of plant cells
95 .Fused or hybrid cell per se
96 ..Interspecies fusion
97 ..Fungi, e.g., yeasts, etc.
98 ..Plant cells
99 ..Human cell
100 ...B lymphocyte
101 ...T lymphocyte
102 ..Animal cell
103 ...Murine cell, e.g., mouse cell, etc.
104 ....B lymphocyte
105 ....T lymphocyte
106 .Method of use of the fused or hybrid cell or the product thereof
107 ..In vivo use of product
108 ..In vitro, e.g., cell cultivation techniques, affinity chromatography, etc.
109 ...Production of non-antibody product
110 ...For use as testing material
111 MISCELLANEOUS

CLASS D1 EDIBLE PRODUCTS

100	MINERAL BLOCK, E.G., SALT LICK, ETC.
101	DISTINCT COMPOSITE INGREDIENTS, E.G., HOT DOG AND BUN; CONE AND ICE CREAM, ETC.
102	.With inedible holder (1)
103	..Plural holder
104	..Simulative
105	..Holder per se
106	SIMULATIVE
107	.Animate
108	..Humanoid
109	...Head or other appendage
110	..Quadruped
111	..Marine life
112	..Heart shaped
113	.Vehicle or component thereof
114	.Alpha or numeric
115	.Plant life
116	ICE CREAM CONE OR CUP
117	.Square or rectangular orifice
118	.Circular orifice
119	.Provision for juxtaposed scoops
120	WITH ENCLOSED OPENINGS, E.G., PRETZEL, DOUGHNUT, ETC.
121	SCORED FOR PORTION CONTROL
122	WITH VISIBLE CONCAVITY FOR FOOD
123	.Scoop or dip type
124	.With circular orifice
125	CONVOLUTED EXTERIOR
126	PASTA
127	CANDY
128	CRACKER OR COOKIE
129	BREAD OR CAKE TYPE
130	SUBSTANTIALLY CIRCULAR IN PLAN
199	MISCELLANEOUS

SEARCH NOTES FOR CLASS D1

(1) Includes holder per se.

CLASS D2 APPAREL AND HABERDASHERY

Excluded from this class are:
Applique or insignia patch; see D5-63+.
Article of personal adornment which is attachable to the person or to wearing apparel; see D11.
Badge or emblem; see D11-95+.
Bath mitt; see D28-63.
Belt or body attached purse; see D3-106.
Body-worn safety apparel for swimming, diving, etc.; see D21-238.
Clip for pencil or fountain pen; see D19-56.
Earmuff; see D29-19.
Fasteners per se, e.g., pin, clasp, button, etc.; see D11-200.
Garment-attached vase for boutonniere or perfume holder; see D11.
Grip improvement or protective hand covering; see D29-20+.
Gun holster; see D3-101.
Hand puppet, i.e., simulative hand covering having symmetrical appendages ; see D21-153.
Head or torso restraint or protective covering; see D29-10+.
Holster or holder for cartridges, fishing lures, etc.; see D3-101.
Ice or roller skate; see D21-225+.
Jewelry; see D11.
Mask for surgery, anesthetic application, oxygen, etc.; see D29-7+.
Package ornament or bow; see D11-184.
Slide-fastener pull combined with lock; see D8-123.
Sunglasses, spectacles combined with visor element; see D16.

1 LINGERIE OR UNDERGARMENTS
2 .Corset or girdle
3 ..Combined with brassiere
4 ..Bifurcated
5 ..Parts (e.g., gores, hip sections, etc.)
6 .Bifurcated
7 ..Combination
8 ...Pajamas or pajama ensemble
9 ....Having overblouse or jacket
10 ..Nether, knee-length or shorter
11 ...With pockets or with simulative motif
12 .Negligee, housecoat, bed jacket, robe
13 ..With simulative motif
14 ...Chenille
15 ..Chenille
16 ..Hanging loose from armholes
17 .Non-bifurcated sleeping garment
18 ..Ladies nightgown
19 .Slip (inclusive or combined with different article, e.g., brassiere, shield, etc.)
20 ..Strapless
21 ..Half-slip or petticoat
22 ..Simulative motif
23 .Camisole or corset cover (inclusive or combined with shields)
24 .Brassiere (inclusive of bust and waist front distender)
25 BODY GARMENTS
26 .With pannier, basque, bustle, etc. (i.e., such garments prior to 1900)
28 .Bifurcated
29 ..Combination of nether with torso garment or with torso garment and different article
30 ...Professional uniform or costume
31 ...Snow or ski suit (inclusive of combination with head or foot wear)
32 ....Trousers
33 ...Children's
34 ....Combined with skirt or dress
35 ....Simulative motif
36 ...Sport or play suit or ensemble with short bifurcated element
37 ....Simulative motif
38 ....With skirt element or tunic (inclusive of swimming suit)
39 .....Torso portion separate or separable
40 ....Swimming suit
41 .....Torson portion separate or separable
42 ..Shorts (e.g., bathing trunks, athletic shorts, etc.)
43 .Knit one- or two-piece dress, three-piece suit, or skirt
44 .Knit or crocheted torso garment (e.g., sweater, blouse, etc.)
45 ..Combination or ensemble, actual or seeming
46 ...With simulative motif
47 ....Jacket, cardigan or vest
48 ..Jacket, cardigan or vest
49 .Dress or suit
50 ..Wedding or evening
51 ...Combination or convertible (e.g., with completely visible underskirt or convertible from long to short)
52 ....Dress with hood
53 ....With cape, stole or scarf, coat or jacket
54 .....Dress with set-in sleeves
55 .....Dress with halter-type top
56 .....Dress with narrow shoulder straps and/or neck strap, or strapless
57 ......Waist-length or longer jacket or coat, fitted
58 ....Jacket or coat combined with hood
59 ...With train
60 ....Sleeve, elbow-length or longer
61 ...With completely set-in sleeve, conventional armhole
62 ....Sleeve, elbow-length or longer
63 .....With overblouse, actual or seeming
64 ......With apparently center front opening to waistline or below (1)
65 .....With apparently center front opening to waistline or below
66 ....With overblouse, actual or seeming
67 .....With apparently center front opening to waistline or below
68 ....With bodice front crossed diagonally from neck, or twisted or looped at neck
69 ....With apparently center front opening to waistline or below
70 ...With bottom portion of sleeve set-in and top portion of sleeve forming part of neckline
71 ....Having shoulder and/or neck strap
72 ...With halter-type top, strapless or with narrow shoulder or neck strap, or with arm band or ruffle continuing from neckline
73 ....Bodice front crossed diagonally from neck, or twisted or looped at neck
74 ...With overblouse actual or seeming
75 ...With skirt front draped from waist; with pleat or gathers to one side of skirt front from waistline; or with ruffle or ruffles down skirt front
76 ...With bodice front crossed diagonally from neck, or twisted or looped at neck

BODY GARMENTS
.Dress or suit
..Wedding or evening
77 ...With apparently center front opening to waist or waist yoke line or below
78 ...With set-in sleeves, 3/4-length or longer
79 ..Costume, ceremonial robe, vestment, etc.
80 ..Children's
81 ...With simulative motif
82 ..Combination or convertible
83 ...With hood (2)
84 ...Having removable sleeve or sleeve part
85 ...With apron or apron-type overskirt, actual or seeming
86 ....Dress front opening, actual or seeming
87 ...With cape, coat or jacket and dress suit comprised of skirt and overblouse or jacket, actual or seeming
88 ....Dress overblouse or jacket front opening to waistline or below, actual or seeming
89 ...With cape
90 ....Dress front opening to waistline or below, actual or seeming
91 ...With full-length or approximately full-length coat
92 ....Coat, beltless, fitted
93 .....Dress front opening to waistline or below, actual or seeming
94 ....Coat, belted, tied or shirred at waistline (includes partially)
95 .....Dress front opening to waist yoke, waistline or below, actual or seeming
96 ...With jacket
97 ....Waist length or shorter
98 .....Provided with closure or fastening means
99 ......Dress front opening to waist yoke, waistline, or below, actual or seeming
100 ....Jacket and/or dress, sleeveless, or with sleeves formed from bodice or set in unconventionally
101 .....Dress with front opening to waist yoke, waistline or below, actual or seeming
102 .....Jacket with decorative detail or details (e.g., fabric figured, tucked, etc.; contrasting collar and/or cuffs; edging trim, etc.)
103 ......Ornate embroidery or braid detail
104 ....Fitted or belted, hip length or longer
105 .....Jacket and/or dress, sleeveless, or sleeves formed from bodice or set in unconventionally
106 ......Dress front opening to waist yoke or line or below, actual or seeming
107 .....Jacket with ornate embroidery or braid detail
108 .....Dress front opening to waist yoke, waistline or below, actual or seeming
109 ....Jacket and/or dress, sleeveless or sleeves formed from bodice or set in unconventionally
110 .....Dress front opening to waist yoke, waistline or below, actual or seeming
111 ....Dress with front opening to waist yoke, waistline or below, actual or seeming
112 ..Comprised of jacket or overblouse, actual or seeming, combined with skirt
113 ...Front only giving effect of jacket or overblouse
114 ....Ending at waistline or above, no closure means
115 ....With closure means, actual or seeming
116 .....Sleeveless or with sleeves formed from bodice or set in unconventionally
117 ...Jacket or overblouse ending below hips
118 ....Sleeveless or with sleeves formed from bodice or set in unconventionally
119 ...Jacket or overblouse front crossed diagonally from neck, or twisted or looped at neck
120 ....Completely front opening, actual or seeming
121 ...Jacket or overblouse with entire, approximately centered, front opening
122 ....Sleeveless or with sleeves formed from bodice or set in unconventionally
123 ....Fitted, tailor-type, with or without belt
124 ....With visibly stitched pleats, tucks or darts on jacket or overblouse and/or skirt
125 ...Jacket or overblouse, center front opening to waistline only
126 ....Sleeveless or with sleeves formed from bodice or set in unconventionally
127 ...Jacket or overblouse, center rear opening to waistline or below
128 ....With simulative motif
129 ...Jacket or overblouse, sleeveless or with sleeves formed from bodice or set in unconventionally
130 ..Comprised of underblouse combined with skirt having suspenders, actual or seeming
131 ..Double- or triple-breasted, actual or seeming
132 ..With bodice front crossed diagonally from neck, or twisted or looped at neck
133 ...Diagonal extending to waistline or waist yoke continuously or angled
134 ....Line continuing into skirt
135 .....With draped skirt front; with pleats or gathers to one side of skirt front; or with vertical ruffle or ruffles down skirt front
136 .....Sleeveless, or with sleeves formed from bodice or set in unconventionally
137 ....Sleeveless, or with sleeves formed from bodice or set in unconventionally
138 ...Sleeveless, or with sleeves formed from bodice or set in unconventionally
139 ...With center rear closure to waistline or below, actual or seeming
140 ...With draped skirt front; with pleats or gathers to one side of skirt front; or with vertical ruffle or ruffles down skirt front

	BODY GARMENTS
	.Dress or suit
141	..With actual or seeming pockets extending from each side of center front of skirt at waistline to lower point at each side of skirt
142	...Front opening to waistline or waist yoke or below, actual or seeming
143	..With skirt front draped; with pleats or gathers to one side of skirt front, or with vertical ruffle or ruffles down skirt front
144	...Sleeveless or with sleeves formed from bodice or set in unconventionally
145	...Center front opening to waistline or below, actual or seeming
146	..Sleeveless
147	...With rear opening to waistline or below, actual or seeming
148	...Combined with underblouse, actual or seeming
149	..Apparently front opening
150	...Opening in approximate center front
151	....To waistline
152	.....With sleeves formed from bodice or set in unconventionally
153	......With narrow band at neck, or without turned-down collar and/or lapels
154	.....With narrow band at neck, or without turned-down collar and/or lapels
155	......Visibly stitched pleats, tucks or darts, or corded pattern on blouse and/or skirt
156	.....Visibly stitched pleats, tucks or darts, or corded pattern on blouse and/or skirt
157	....Extending below waistline
158	.....To skirt bottom
159	......With sleeves formed from bodice or set in unconventionally
160	.......Narrow band at neck, or without turned-down collar and/or lapels
161	......Narrow band at neck, or without turned-down collar and/or lapels
162	.......Visibly stitched pleats, tucks or darts, or corded pattern on blouse and/or skirt
163	......Visibly stitched pleats, tucks or darts, or corded pattern on blouse and/or skirt
164	.....Narrow band at neck, or without turned-down collar and/or lapels
165	.....With sleeves formed from bodice or set in unconventionally
166	....Narrow band at neck, or without turned-down collar and/or lapels
167	...With sleeves formed from bodice or set in unconventionally
168	..With sleeves formed from bodice or set in unconventionally
169	...Sleeves 3/4 length or longer
170	....Rear opening to waistline or below
171	..Rear opening to waistline or below, actual or seeming
172	...With narrow band at neck, or without turned-down collar and lapels
173	..With visibly stitched pleats, tucks or darts, or with corded pattern
174	...Waist only
175	...Skirt only
176	....Waist portion having lace or embroidered inserts
177	..With narrow band at neck, or without turned-down collar and/or lapels
178	...Waist portion having lace inserts, sequin, ruffle, tassel or fringe trimming, or heavy embroidery or applique
179	.Capes, capelets, stoles or tippets, shaped shawls
180	..Convertible or combined with different article
181	...With headwear
182	..Fur or fur trimmed
183	.Coat, jacket, vest or dickey
184	..Convertible or combined with different article (other than scarf or ornament such as flower, pin, etc.)
185	...With headwear
186	....Sleeveless or with sleeves set in unconventionally
187	..Approximately hip length or above
188	...Fur
189	...Costume or professional uniform
190	...Sleeveless
191	...Waist length or above
192	....Sleeves formed from bodice or set in unconventionally
193	...Lady's or child's loose hanging
194	....Sleeves formed from bodice or set in unconventionally
195	...Lady's fitted, dressmaker type
196	....Front opening or diagonal
197	....Sleeves formed from bodice or set in unconventionally
198	..Fur or fur trimmed
199	...Sleeves formed from bodice or set in unconventionally
200	....Fitted or belted at waistline, partially or completely
201	...Fitted or belted at waistline, partially or completely
202	..Sleeves formed from bodice or set in unconventionally
203	...Fitted or belted at waistline, partially or completely
204	..Belted or shirred at waistline
205	...Partially
206	...Fitted at waistline
207	..Linings (inclusive of cape linings)
208	.Blouse or shirt (31)
209	..Combined with different article, or with removable or reversible element
210	..Sleeveless
211	...Halter or midriff type
212	...With simulative motif
213	..Completely rear opening blouses, short set-in sleeves, with single or double darts at waistline front and/or rear, and with front characterized by lace inserts, embroidery, tucking, etc.
214	...With simulative motif
215	..With simulative motif
216	...Sleeves formed from bodice or set in unconventionally
217	..Apparently to be worn over or outside skirt, shorts or trousers
218	...Waist length or above, loose hanging, belted or fitted
219	....Sleeves formed from bodice or set in unconventionally
220	...Sleeves formed from bodice or set in unconventionally
221	...Belted, gathered or fitted at waistline
222	..Sleeves formed from bodice or set in unconventionally
222.1	..Cuff
223	.Skirts
224	..With simulative motif
225	.Garment protectors

BODY GARMENTS
.Garment protectors
226 ..Aprons and bibs
227 ...With simulative form or motif
228 ....Having special pockets
229 ...Having special pockets or holders, (e.g., for tools, sewing, food catching pockets for baby bibs, etc.)
500 SCARF, HANDKERCHIEF OR SIMILAR ACCESSORY (10)
501 .Combined with diverse article
502 .Substantially rectangular or square
503 ..Simulative (11)
504 ...Architectural or geographic
505 ...Animate
506 ....Humanoid
507 ...Plant life
508 .Simulative
509 HEADWEAR (12)
510 .Rain, bathing or shower (13)
511 ..Simulative
512 .Band or tie fastener (14)
513 ..Simulative
514 ..With crown opening
515 ..Hood, bonnet or wrap type
244 .Visored hats or caps
245 ..Combined with snood
246 ..Combined with ear covering, eye protector or other article
247 ...With crown opening or openings
248 ..With simulative form or motif
249 .Stocking caps, stocking cap type; brimless knit or crocheted
250 .With simulative form or motif
251 ..Brimless or with closely fitted upturned rim or brim
252 ..With crown opening or openings or with no crown
253 .With crown opening or openings or with no crown (includes net or crochet)
254 .Narrow caps (e.g., overseas, coonskin, etc.)
255 .With crown attached to headband (e.g., tam-o'shanter type)
256 .Fezzes, skullcaps or beanies; turbans, boudoir or dust caps; helmet or hood type
257 .With brim
258 ..Upturned
260 .Parts (e.g., brims, linings, etc.)
261 ..Hatbands and parts
262 ..Frames, blanks or bodies
263 ..Ornaments (3)
264 FOOTWEAR
265 .Combined with other article
266 ..Stock
267 .Legging or spat
268 .Moccasin
269 .Loafer type
270 .Toe encircling or bifurcating (4)
271 .Boots, shoe coverings, or protectors
272 ..Ankle height or higher
273 ...With simulative motive
274 ...With patterned sole
275 ...With fastening or tightening means
276 ....Ski boots
277 ..Toe or heel protectors
278 .Children's shoes or slippers
279 ..Simulative
280 .With slide fastener
281 .With button or snap fastener
282 .Women's shoes or slippers
283 ..Mule
284 ..Low cut
285 ...Having laces, ties, or eyelets over instep
286 ....Wedgie
287 ....Little or no heel
288 ....Perforated
289 ....With cutout portion
290 ...Having straps over instep, toe or ankle
291 ....Wedgie
292 ....Clog
293 ....Little or no heel
294 ....Featuring heel, sole, or toe element
295 ....Fur trimmed
296 ....Vamp and quarter unconnected
297 ....Heel strap connected to vamp
298 .....T-strap
299 ......Perforated
300 ...Wedgie
301 ...Little or no heel
302 ...Featuring heel, sole, or toe element (5)
303 ...Perforated
304 ...Fur trimmed
305 ...Attached ornament on vamp
306 ....Bow
307 ...With cutout portion
308 .Men's shoes or slippers
309 ..Athletic
310 ...Sneakers
311 ...With spikes
312 ..High cut
313 ..Provided with laces
314 .Attachments or parts (inclusive of heel guards for hosiery)
314.1 ..Shoe tree
315 ..Heel or vamp ornaments (inclusive of tongues) (6)
316 ..Shoelaces (inclusive of tips or tassels)
317 ..Plates or pads for heel or sole and anti-skid attachments
318 ..Innersoles
319 ..Soles per se combined with shank or shank and heel
320 ...With patterned bottom
321 ....Combined with simulative motif or initial
322 ...Platform or clog type, or with high heels
323 ..Heels or heel lifts
324 ...Platform or clog type
325 ...High or spike type
326 ..Vamps, straps, piping strips
327 ...Simulative motif
328 ..Welting or stay strips
329 SOCKS OR STOCKINGS
330 .Special type (e.g., with cutout, garter, etc., or for skiing, etc.)
331 .Socks characterized by pattern of weave and/or contrast
332 ..With simulative motif
333 ...Inanimate
334 ..By pattern of cuff
335 .Stockings simulative of combination with shoe, slipper or sock
336 .Stockings characterized by pattern of weave and/or contrast
337 ..Of top portion
338 ..Of heel and/or toe or instep
339 ...With simulative motif
340 ...With heel pattern extending above main portion
341 ..Pattern scattered, or spaced vertically or horizontally
342 ..Pattern simulative
600 NECKWEAR (15)
601 .Fur (16)
602 .Collar, neckpiece or neckline insert
603 ..Lace or ruffle
604 ..Simulative
605 .Tie or ascot

NECKWEAR (15)
.Tie or ascot
606 ..Bow type
607 ..Sliding knot or cord type
608 ..Simulative
609 .Element or attachment (17)
610 HAND OR ARM COVERING (18)
611 .Muff (i.e., singular unit with distinct entry for each hand)
612 ..Combined with diverse article (19)
613 ..Simulative
614 .Combined with diverse article (20)
615 .Simulative (21)
616 ..Glove (i.e., individual sheaths provided for fingers)
617 .Glove (i.e., individual sheaths provided for fingers)
618 ..Seam or detail extending from finger crotch
619 ..Detail on back of hand
620 ...Three longitudinal ribs
621 ..Detail on wrist or cuff (22)
622 .Mitten (i.e., with singular covering for all fingers)
623 .Element or attachment
624 BODY WORN APPAREL SUPPORT (23)
625 .Garter or garter belt (24)
626 .Suspenders (25)
627 .Belt or Cummerbund (26)
628 ..With signal feature
629 ..Combined
630 ...With purse, pouch or article receiver (27)
631 ..Simulative
632 ...Animate (28)
633 ..Linked plates or plaques
634 ..Parallel distinct circumferential strands
635 ..Interlaced, woven or mesh components
636 ..Perforated (29)
637 ..Repeating pleats, gathers or striations
638 ..Pattern components systematically repeat about periphery
639 ..Element or attachment (30)
640 ...Suspender end or connector
641 DONNING OR REMOVING IMPLEMENT
642 .Shoe horn, boot jack, etc.
643 .Buttonhook
699 MISCELLANEOUS

SEARCH NOTES FOR CLASS D2

(1) This subclass and similar subclasses below are limited to dresses or suits with no indication of a rear opening.
(2) For dresses or suits with center front opening to waistline or below with no indication of a rear opening, search this subclass.
(3) Search Class D11, subclasses 200+.
(4) Search subclasses 330+ below.
(5) Search subclasses 319+ and 323+ below.
(6) For shoe buckles, clasps, etc. per se, search Class D11, subclasses 200+.
(7) For collar buttons, clasps and holders, search Class D11, subclasses 202+ or 222+.
(8) For belt-attached buckles, clasps or slides, search Class D11, subclasses 200+.
(9) Includes both parts only unless otherwise specified.
(10) Essentially, items in this subclass are of uniform thickness and have the potential for convertible or alternative apparel use. For example, items may be used as head covering, shoulder covering, muffler, etc.
Clothing pieces which are designed to be used in a predetermined arrangement or in a predetermined three-dimensional shape are excluded. For example, shoulder stoles are in subclass 179, boas in subclass 600, neckties in subclass 605 and turbans in subclass 256.
CLASSIFIED BY FULL LINE DISCLOSURE.
(11) Includes letter or numeral.
(12) For impact protective type, see D29-12.
(13) Classified by full line disclosure.
(14) Includes sweat band.
Classified by full line disclosure.
(15) Classified by full line disclosure.
(16) For shoulder stole, see subclass 179.
(17) Includes internal collar stiffener, etc.
For necktie restraint or collar fastener, pin, etc., see D11-200.
(18) Classified by full line disclosure.
(19) Includes conbination with pouch or purse.
(20) Includes combination with pouch or purse.
(21) Items in this subclass differ from those classified in D21-153 in having asymmetrical appendages.
(22) Exclusive of wrist cutout or hem.
(23) Subject matter in this subclass and indented subclasses is distinguished from subject matter in D11-200+ in being exclusively body-attached suports for apparel whereas the latter includes fasteners which are attached to the apparel. For example, buckle, clasps, and slides per se are classified in D11.
Includes vehicle safety belt.
Classified by full line disclosure.
(24) For fastener per se, see D11-212.
(25) For suspender end, see subclass 640
(26) For buckle, see D11-200+;
Classified by full line disclose.
(27) For pouch attachment per se, see D3-106.
(28) Includes humanoid.
(29) Exclusive of prong or fastener receptacle.
(30) For belt attached purse, pouch, cradle, etc., see D3-106.
For fastener per se, see D11-212.
(31) For collar, see subclass 602+.

CLASS D3 TRAVEL GOODS AND PERSONAL BELONGINGS

DECEMBER 1990

Excluded from this class are:
Ammunition or weapon holder; see D22-13+.
Barrel, cask, or drum; see D34-39.
Canopy; see D25-56+.
Cartridge for holding and using photographic slides; see D16-26.
Cigarette case, tobacco jar or pouch; see D27-183+.
Coal basket; see D23-410.
Coin holder or bank; see D99-34+.
Combined belt and article holder; see D2-630.
Console, cabinet or other furniture for storage of reproduction tape, film, or disk; see D6-396+.
Container for cosmetic product; see D28.
Disposable package; see D9.
Electric fan; see D23-370+.
Embroidered, knitted, or crotcheted article; see D5.
Face powder box; see D28-91.
Holder for hair curlers; see D28-38.
Lunch box, picnic basket, etc; see D7-626+.
Luggage hardware, e.g., handle, hinge, lock, etc.; see D8.
Magnetic tape cartridge, cassette or reel; see D14-121.
Money belt; see D2-630.
Money clip; see D11-78.1.
Open top bin, tray, or basket; see D34-40+.
Packaging or disposable container; see D9.
Photographic slide holder; see D16-26.
Pipe holder or rack; see D27-6.
Portable phonograph case; see D14-201.
Purse combined with belt; see D2-630.
Record jacket; see D9.
Sewing kit or needle or thread packages; see D9-303.
Sewing machine; see D15-66+.
Sewing machine cabinet; see D15-72.
Soap bar container; see D28-76.
Storage cabinet per se, i.e., without carrying capability; see D6-396+.
Tent; see D21-253.
Toothbrush case; see D4-199.

1 HAND FAN (1)
2 .Folding
3 ..Simulative
4 .Simulative
5 UMBRELLA OR PARASOL, WALKING SUPPORT
6 .Simulative
7 .Cane or walking support (2)
8 ..Underarm support, i.e., crutch
9 ..Plural tips
10 .Element or attachment
11 ..Carrying case or sleeve
12 ..Handle
13 ...Combined with diverse article
14 ...Simulative
15 ....Animate
16 ...Offset or asymmetrical
17 ..Tip or ferrule
18 HAND SEWING, KNITTING, AND EMBROIDERY EQUIPMENT (3)
20 .Article storage or holder
21 ..Simulative
22 ...Pincushion (4)
23 ..Yarn, thread, etc. (5)
24 ...Spool type
25 ....Multiple spindle type
26 ..Work holder
27 ..Pincushion (6)
28 .Needle- or bodkin-type implement
29 .Thimble
30.1 STORAGE OR CARRYING CONTAINER (7)
30.5 .Shoeshine case, kit, or foot rest
31 .Child carrier
32 .Backpack type
33 .Optical equipment, e.g., projector, etc.
34 ..Eyeglasses or contact lens
35 .Reproduction tape, film, or disk (10)
100 .Body, apparel, or belt attached article holder
101 ..Gun holster
102 ..Scabbard or sheath
103 ..Key Keeper
104 ..Sports equipment
105 ..Tool
106 ..Purse, pouch or cradle
36 .Sports equipment
37 ..Golf bag
38 ..Hunting or fishing
39 .Vanity, toilet, or cosmetic case
40 .Vehicle type (8)
41 .With drawstring closure
42 .Handbag, purse, or tote bag (9)
43 ..Combined with diverse article (11)
44 ..Simulative
45 ...Animate
46 ....Humanoid
47 ...Plant life
48 ..Plural distinct external pockets or openings
49 ..Pivoted cooperating jaw closure
50 ...With carrying strap or handle, or with provision therefor
51 ..Lid closure, i.e., cooperating with fixed opening
52 ..Flap or strap closure, i.e., singular flexible element covering opening and extending onto front
53 ..Longitudinal central opening
54 ..Element or attachment
55 ...Glove holder
56 .Wallet or card case
57 ..Simulative
58 ..With enclosure securing means
59 ...Zipper
60 ..Symmetrical format of pockets or openings
61 .Keyholder
62 ..Combined with diverse article or having additional use
63 ...With light
64 ...With tool
65 ..Simulative
66 .Simulative
70 .Trunk type
71 .With zipper
72 .Recessed handle extends to operative position
73 .With molded integral handle
74 .Compartmented
75 ..Tableware or jewelry
76 .Luggage type
77 ..With external securing strap or tie
78 .With lid or flap closure
79 ..Flap type
99 MISCELLANEOUS

SEARCH NOTES FOR CLASS D3
(1) Element included in this and in indented subclasses.
(2) Includes swagger stick.
(3) For sewing machine carrying case, see subclasses 30+.

(4) Also search subclass 27.
(5) Includes bobbin holder.
(6) Also search subclass 22.
(7) Element included in this and in indented subclasses; includes canteen.
(8) For tape storage, see subclasses 35.
(9) For luggage-type carrying container see subclass 76.
(10) To be classified in this subclass, container must be a storage case, tray, holder or unit which is easily carried.
(11) For combination with glove or muff see, respectively, D2-614 and D2-612.

CLASS D4 BRUSHWARE (1)

Excluded from this class are:
Charger for electric toothbrush; see D13-108.
Crumb collector or dust pan; see D32-74.
Paint bucket or roller tray; see D32-53.
Paint working tool, e.g., graining, etc; see D8-16, 19.
Shoe or boot scraper; see D32-47.
Shoe shine machine or appliance; see D32-14.1.
Sponge type mop, broom; see D32-40+.
Toilet brush holder; see D6-551.

100 POWERED
101 .Electric toothbrush (2)
102 .Rotary brush
103 FINGER COT TYPE
104 TOOTHBRUSH OR HANDLE THEREFOR
105 .Plural brush groups
106 ..Directly opposed
107 .Simulative
108 .Combined with diverse article (3)
109 .Rotary brush
110 .Brush head at right angle to handle
111 .Circular head
112 .Asymmetrical in top plan view
113 .Attachment
114 FLUID MATERIAL DISPENSER, E.G., FOUNTAIN BRUSH, ETC.
115 .With hose coupling
116 COMBINED WITH DIVERSE ARTICLE (4)
117 .Brush and comb
118 .Brush and scraper
119 PLURAL BRUSH OR BUFFING PAD
120 .Superposed or antipodal
121 RELATIVELY MOVEABLE COMPONENTS
122 .Roller (5)
123 ..Repeat pattern applicator
124 SIMULATIVE
125 .Animate
126 ..Humanoid
127 CIRCULAR BRUSH HEAD
128 .Radially arranged bristles, e.g., rat tail type, etc.
129 HANDLE FORMS GRIP OPENING FOR FINGERS
130 BRISTLED
131 .Wire type handle or bristle support
132 .Bristles at one end of handle only
133 ..Radially arranged rows, i.e., around longitudinal axis
134 ..Substantially at right angle to handle
135 ..Bristles in axial alignment with handle, e.g., stencil or shaving brush, etc.
136 WITH DISTINCT TINE OR TOOTH
137 WITH PAD-LIKE BUFFING OR BRUSHING SURFACE
138 HANDLE OR HANDLE AND BACK
199 MISCELLANEOUS

SEARCH NOTES FOR CLASS D4

(1) This class only contains hand held brush type implements, powered or nonpowered.
For industrial type machinery, including brushes, and for nonbristled manual floor treatment equipment, e.g., mops, brooms, squeegees, etc., see Class D32.

(2) Includes power handle. See 199 for case.

(3) Includes brush with case.

(4) For plural brush and/or buffing pads. See 119 below.
Combination with case excluded; see 108 and 121.

(5) Includes roller per se.

CLASS D5 TEXTILE, OR PAPER YARD GOODS; SHEET MATERIAL (1)

Excluded from this class are:
Architectural panel or medallion; see D25-138+.
Bag or wrapper; see D9-305+.
Box covering paper having defined limits ;see D9-435+.
Decal or transfer, general; see D20-11.
Freestanding panel or screen; see D6-322.
Glass panel; see D25-103+.
Molding; see D25-119+ or 136+.
Mural or simila pictorial unit; see D11-132+.
Pattern for apparel; see D2.
Pattern for doll; see D21-148+.
Pendant; see D6-595.
Roofing material; see D25-139+.
Tassel; see D6-581.
Tile assembled into floor covering; see D6-582+.
Translucent or transparent achitectural panel or sheet material; see D25-102+.
Wrapper; see D9-305.
Writing paper; see D19-1.

1 PERFORATED OR OPENWORK PANEL MATERIAL (E.G., EXPANDED METAL TYPE, ETC.)
2 .Combined unidirectional and bidirectional pattern (i.e., combined overall and border pattern)
3 .Unidirectional (i.e., pattern having opposed limits)
4 COMBINED UNIDIRECTIONAL AND BIDIRECTIONAL PATTERN (I.E., COMBINED OVERALL AND BORDER PATTERN) (2)
5 .Simulative
6 ..Plant life
7 UNIDIRECTIONAL (E.G., BORDER, TRIM BAND, ETC.) (3)
8 .Simulative
9 ..Special occasion, holiday or religious theme
10 ...Christmas (4)
11 ..Lace or open weave type (5)
12 ...Turnover, or being symmetrical to either side of longitudinal axis (e.g., mirror image, etc.)
13 ...Animate (6)
14 ..Animate (6)
15 ..Architectural or geographic theme (7)
16 ..Plant life or plume
17 ...Turnover, or being symmetrical to either side of longitudinal axis (e.g., mirror image, etc.)
18 .Fringe
19 .Lace or open weave type (5)
20 SIMULATIVE
21 .Special occasion, holiday or religious theme
22 ..Christmas (8)
23 .Lace or open weave type (5)
24 ..Plant life
25 .Pattern formed by stippled effect (i.e., small points or dots rather than lines or solid areas)
26 .Animate (9)
27 ..Humanoid
28 ..Hide or pelt
29 .Architectural or geographic theme (7)
30 .Letter, numeral or punctuation
31 .Musical theme
32 .Plant life or plume (10)
33 ..With container
34 ..With ribbon or bow
35 ..With diverse simulation
36 ..Fruit, nut, seed pod or vegetable (11)
37 ..Flower or bud
38 ...Fleur-de-lis
39 ...Pattern formed on grid or graph matrix (i.e., applied or conformed to grid base)
40 .Ribbon or bow
41 .Star
42 .Vehicle or component thereof
43 .Natural material (e.g., wood, etc.)
44 ..Marble or stone
45 PAISLEY TYPE PATTERN (I.E., PATTERN CONSISTING OF OVOID FORMS NARROWING TO SINUOUS TAIL PORTION)
46 PLAID OR TARTAN TYPE PATTERN (I.E., PATTERN CONSISTING OF LINES OF VARYING WIDTH, SPACING OR CONTRAST INTERSECTING AT RIGHT ANGLES) (12)
47 PATTERN CREATED BY TEXTURE OR OPEN WEAVE (13)
48 .Lace (i.e., specified as such)
49 .Nap, chenille or pile (i.e., cut or looped material extending from warp & weft plane)
50 .Formed from caning material
51 .Curtain material (i.e., specified as such)
52 .Shirred, gathered or quilted
53 .Embossed or puffed
54 .Metal fabric or mesh type
55 PATTERN FORMED BY TRACERY OF UNIFORM LINE (14)
56 ZIGZAG OR WAVE PATTERN
57 PATTERN FORMED BY STIPPLED EFFECT (I.E., SMALL POINTS OR DOTS RATHER THAN LINES OR SOLID AREAS)
58 PATTERN FORMED ON GRID OR GRAPH MATRIX (I.E., APPLIED OR CONFORMED TO GRID BASE)
59 REVERSE, ROTATED, OR ALTERNATING PATTERN ELEMENT (15)
60 LINEAR ARRANGEMENT OF ADJACENT PATTERN ELEMENTS, OR STRIATED
61 SINGLE ISOLATED SYSTEMATICALLY REPEATING ELEMENT
62 RANDOM ARRANGEMENT OF PATTERN ELEMENTS WITHIN REPEAT UNIT (16)
63 APPLIQUE, MEDALLION OR SINGULAR PATTERN UNIT (17)
64 .Simulative (18)
65 ..Animate (6)
66 ..Plant life
99 MISCELLANEOUS (19)

SEARCH NOTES FOR CLASS D5.
(1) This class includes material which, as disclosed and claimed, indicates repetition beyond the limits of the disclosure. The material in this class has indeterminate length or width. Material with specific limits or suggestion thereof (such as disclosure of a corner) is classified in D6, D11, D25, etc. However, singular pattern segments or material with disclosed limits which are not identified as subject matter for other classes are classified in this class, subclasses 63+.
(2) Exclusive of selvage.
(3) Exclusive of selvage.
If disclosure teaches repitition of the pattern bidirectionally, patent is classified under the following main line subclasses.
(4) Exclusive of plant life per se;

see subclasses 16+.

(5) Lace or open weave patterns are characterized by threads or strands defining adjacent open areas.

(6) Includes humanoid.

(7) Includes simulation of water.

(8) Exclusive of plant life per se; see subclasses 32+.

(9) For feather or plume per se, see subclasses 32+.

(10) For wood grain simulation, see subclass 43.

(11) Includes pine cone; includes grain

(12) Exclusive of check type pattern.

(13) For classification in this or in indented subclasses, the weave or texture itself must create the pattern as distinguished from the pattern being applied to the material.
Texture must be clearly indicated by shading, or by end or cross-sectional views.

(14) Exclusive of tile delineation.

(15) Includes design elements separated by intermediate distinct design motif.

(16) If repeat protocol is apparent from the disclosure, patent is classified under earlier main line subclasses. If, however, disclosed pattern element does not indicate how it can repeat, patent is classified here.

(17) Includes foundation or pattern for applique, etc.
Includes insignia patch.
Includes decal set for repeat pattern.

(18) Includes letter, numeral or punctuation.

(19) Some early patents are classified in this subclass because (a) they lack drawing disclosure or specifications or (b) the clarity of disclosure is insufficient to accurately place them earlier in the schedule. For example, because of age some drawings have faded to the point of being unreadable. In others, drawing techniques which do not employ current practice are inadequate to convey the extent or rhythm of the repeat pattern.

Excluded from this class are:
Altar; see D99-25.
Bagging tool for packing groceries; see D8-71.
Basket or tray; see D34-40+.
Bath mitt or cloth; see D28-63.
Bench for weight lifting; see D21-197.
Bicycle rack or holder; see D12-115.
Billiard table; see D21-232.
Cabinets with oil collecting or lubricating means; see D15-151+.
Card file; see D19-75+.
Cart; see D34-12+.
Carrier for sewing supplies; see D3-20+.
Carrier for tape reel, cartridge, cassette, etc.; see D3-35.
Casing for computer equipment; see D14-114.
Casing or enclosure for electronic equipment not elsewhere specified; see D13-184.
Caster; see D8-375.
Console cabinet for radio, television or stereo; see D14-133 and 175+.
Cord latch for Venetian blind; see D8-394.
Corner protector for furniture; see D8-403.
Depository; see D99-28+.
Desk tray or document holder; see D19-86+.
Dispenser for individual cigarette; see D27-184.
Display article; see D20.
Drawing board or writing surface; see D19-52.
Flowerpot or plant holder; see D11-143+.
Food display unit combined with oven or warmer; see D7-323+.
Frame for sign or bulletin board; see D19-52 and 54.
Game table; see D21-37.
Glass or bottle holder; see D7-616.
Gun holder or rack; see D3-38.
Hair dryer and chair combination; see D28-15.
Handgrip; see D8-303.
Hand-held mirror; see D28-69+.
Hardware, e.g., pull, glide caster, drawer guide, hinge, etc.; see D8.
Holder or support for eyeglasses; see D16-129.
Holder for food processor blade; see D7-637.
Hook or support for picture, mirror, etc.; see D8-354+.
Insulating mat for range; see D7-388.
Kitchen condiment container holder; see D7-590.
Ladder or stepladder; see D25-64+.
Linen designed specifically for medical purposes; see D24-49.
Mannequin; see D20-30+.
Mat for sink, bathtub, etc.; see D19-65.
Molding; see D25-119+ or 136+.
Molding for picture frame; see D25-119+ or 136+.
Mounting hardware for curtain, drape, shade, etc.; see D8-354+.
Paper fastener, clip or clamp; see D19-65.
Perambulator; see D12-128+.
Physician's examination table; see D24-3.
Plant container per se or combined with support; see D11-143+.
Plant growth unit, e.g., with lamp, etc.; see D11-144.
Plaque or wall decoration; see D11-132+.
Portable storage unit for reproduction tape, film, or disk; see D3-35.
Prefabricated building partition; see D25-58+.
Protective cover for cigarette pack; see D27-186+.
Protective cover for matchbook and match; see D27-173+.
Rack-type holder for tool; also see D8-71 and D8-349+.
Rigid drapery valance or cornice; see D25-55.
Saddlery; see D30-20+.
Serving cart; see D12-21+.
Sewing machine cabinets and parts; see D15-66+.
Sewing supplies holder or case; see D3-20+.
Sign; see D20-10+.
Sink combined with cabinet; see D23-59.
Sink mat; see D32-57.
Sleeping bag; see D2-25.
Spice rack; see D7-616+.
Standard or support for plumbing fixture; see D23-303.
Stock material; see D25-102+.
Stretcher; see D12-128+.
Table combined with lamp; see D26-58.
Television support stands; see D34-12+.
Tilter unit for Venetian blind; see D8-358.
Topiary or plant form; see D11-143+.
Training chair; see D23-296+.
Vehicle floor mat; see D12-203.
Wheelchair; see D12-131.
Wine rack; see D7-616+.
Work or eating surface integrally related to cooking grill; see D7-332.
Yard goods for carpeting or floor covering; see D5.

300 MIRROR, FRAME, PICTURE MOUNT, OR EASEL TYPE SUPPORT (2)
301 .Plural mount
302 ..Of varying size or shape
303 .Simulative
304 ..Animate
305 ...Humanoid
306 ..Plant life
307 ..Alpha
308 .Illuminated type
309 .Oval or circular opening or perimeter
310 .Stand-up type, e.g., rear supporting leg, etc.
311 ..Rearwardly swinging leg
312 ..Adjustable
313 ..Wire type support
314 ..With transparent mount
315 APPAREL SUPPORT (3)
316 .Simulative
317 .Substantially formed from wire or tube
318 .Downwardly sloping shoulder supports
319 ..With horizontal garment support
320 .Attachable to vertical surface
321 ..Combined with mirror
322 ..Rotating wheel type, e.g., tie rack, etc.
323 ..Hook or clamp type
324 ..Extendible or swinging arm
325 ..Clip-on bracket mount
326 .With article clamping means
327 .Cantilevered article support arm
328 .Element or attachment

329 FURNITURE, FREESTANDING SUPPORT, OR FRAME THEREFOR (4)
330 .Having provision for kneeling, or prie-dieu
331 .Playpen
332 .Freestanding panel or screen (5)
333 .Restraining seat or portable support for juvenile (6)
334 .Seating unit (7)
335 ..Combined or convertible (8)
336 ...With work surface or storage unit (9)
337 ....Plural facing seats
338 ....Work surface positioned at front of seat
339 .....High chair for juvenile (10)
340 .....Straddle type
341 .....Asymmetrical attachment, e.g., offset arm, etc.
342 ....Seat attached at front (11)
343 ...With apparel support, i.e., "Valet" (12)
344 ..Swinging or rocking
345 ...Simulative (13)
346 ...Plural facing seats
347 ...Suspended
348 ...Curved runner contacts floor
349 ..Hassock, ottoman, stool or bench, i.e., without armrest and backrest (14)
350 ...Stepped (15)
351 ...Simulative (16)
352 ...Three or more repeats or uniform pattern about axis
353 ...Folding or adjustable
354 ..Straddle type, e.g., saddle, etc.
355 ..Backless
356 ..Vehicle type
357 ..Oppositely facing plural seats
358 ..Simulative (16)
359 ...Animate (17)
360 ..With integral occupant leg or foot rest (18)
361 ...Contiguous relationship with seat, i.e., chaise longue type
362 ..Cantilevered from or attached to vertical surface
363 ..Triangular or three-point support
364 ..Unitary support column or inset pedestal type
365 ...Footed
366 ....Three or more radiating spokes, i.e., spider
367 ..Provision for adjustment
368 ...Collapsible or folding
369 ..Interlaced or lashed components, e.g., wicker, rattan or bamboo, etc.
370 ..Plural parallel slats forming seat or back (19)
371 ..Front-to-rear runner forms base (20)
372 ...Contiguous with leg
373 ....Front and rear
374 ..Seat or backrest formed of unitary material or material having uniform thickness
375 ...Contiguous seat and back
376 ..Cast or forged metal type
377 ..Amorphous or asymmetrical
378 ..Diverging adjacent backrests, e.g., corner unit, etc.
379 ..Open area or openwork between seat & armrest
380 ..Open area or openwork between seat & backrest
381 ..Plural occupant
382 .Bed or body support surface (21)
383 ..Combined or convertible (22)
384 ...With work surface or storage unit
385 ..Swinging or rocking
386 ...Suspended, e.g., hammock, etc.
387 ....Hammock
388 ..Simulative
389 ..With canopy or canopy frame
390 ..With side barrier, e.g., crib, bassinet, etc.
391 ...Collapsible or adjustable
392 ..Collapsible or adjustable
393 ..With headboard
394 ...Top rail and end post formed of contiguous material having uniform configuration
395 ...Spaced repeating vertical slats or tubes
396 .Work surface, storage, merchandising or display unit (23)
397 ..Combined or convertible (24)
398 ...With waste disposal facility, e.g., service station oil service unit
399 ...With distinct lamp (25)
400 ...With tool, vise or work holder
401 ...With timepiece
402 ..Checkout counter
403 ..Support for flowerpot or flower arrangement (26)
404 ...Simulative
405 ...Plural distinct retainers or shelves
406 ..Lap or bed type
407 ..Recording tape or disc
408 ..Sequential discharge
409 ..For display of rug or carpet
410 ..For suspension of textile or flexible material, i.e., sheet, towel, blanket, etc. (27)
411 ..Hook, post or bar for suspension of apparel (28)
412 ...Simulative
413 ...Combined with auxiliary storage, e.g., umbrella stand, etc.
414 ....Shelf or enclosed compartment
415 ...Repeating or uniform structure about axis
416 ..Umbrella or fireplace tool holder
417 ..Provision for ground insertion (29)
418 ..Clamp or fastener attachment
419 ..Lectern or book reading stand (30)
420 ..Inclined work surface (31)
421 ..Carrel type, i.e., with side panel adjacent to occupant (32)
422 ..Storage or enclosed area adjacent to recess for user, e.g., desk type (33)
423 ...Distinct provision for plural users, e.g., recesses, etc.
424 ...Tambour closure
425 ...Opening or extending work surface (34)
426 ...Stepped top, or with inset superposed component (35)
427 ...Offset or asymmetrical top
428 ...Bilaterally symmetrical
429 ..Folding or adjustable (36)
430 ...Auxiliary extending work or support surface, or with provision therefor
431 ...Rectilinear adjustment
432 ..Enclosed storage (37)
433 ...Tambour closure
434 ...Simulative
435 ....Animate (38)
436 ...Combined with visible storage (39)
437 ....Plural parallel stepped or terraced support surfaces
438 ....Inset or superposed distinct component, e.g., chest-on-chest type, etc.

FURNITURE, FREESTANDING SUPPORT, OR FRAME THEREFOR (4)
.Work surface, storage, merchandising or display unit (23)
..Enclosed storage (37)
439 ...Inset or superposed distinct components or with singular horizontal division between segments, e.g., chest-on-chest type, etc.
440 ...Opening top (40)
441 ...Curved front or side
442 ...5 or more sides
443 ...Inclined front surface
444 ...Combined with external mirror
445 ...Plural exterior closure or panel
446 ....Bilaterally symmetrical
447 .....With pediment, backsplash or irregular top surface
448 ...Bilaterally symmetrical
449 ..Visible storage or support
450 ...Simulative
451 ....Table or planar work surface
452 .....Animate (42)
453 ....Animate (42)
454 ...Plural swinging panels, or provision therefor
455 ...Three or more repeats or uniform structure about axis (43)
456 ....Horizontal axis
457 ....Notch, aperture or clip for retention of specific article
458 ....Wire, tubular or uniform-section material forming support surface
459 ....Inclined parallel support surfaces
460 ....Stepped or terraced support surfaces
461 ....Superposed repeating support surfaces
462 ...Wire, tubular or uniform - section material forming support surface (44)
463 ....Inclined parallel support surfaces
464 ....Stepped or terraced support surfaces
465 ....Repeating superposed support surfaces
466 ...Notch, aperture or clip for retention of specific article (45)
467 ....Plural
468 .....Stepped, terraced or vertically spaced repeating supports
469 .....Circular or oval aperture
470 ...Showcase type, i.e., with transparent panel for viewing contents or with provision therefor (46)
471 ....Planar inclined panel
472 ....Curved panel
473 ...Inclined parallel support surfaces
474 ...Stepped or terraced support surfaces
475 ...Upwardly oriented bin or confining barrier
476 ....Plural cell
477 ...Superposed planar surfaces
478 ....With vertical barrier
479 ....Repeating identical surfaces
480 ...Planar surface (47)
481 ....Counter or bar type (48)
482 ....Freeform
483 ....Asymmetrical on one side
484 ....Supports located at or beyond perimeter of top
485 ....Formed entirely of material having uniform thickness
486 ....Unitary support column, i.e., pedestal type
487 ....Tubular or wire material forming supports
488 ....Repeating or uniform configuration about axis
489 .....Tripartite
490 ...Formed entirely of material having uniform thickness
491 .Element (49)
492 ..Panel or end panel support (50)
493 ...Simulative
494 ...Bilaterally symmetrical
495 ..Base, foot or post (51)
496 ...Provision for adjustment
497 ...Simulative
498 ...Radiating spokes, i.e., spider
499 ...Formed of tubular or wire material
500 ..Seating unit (52)
501 ...Body support surface (53)
502 ....Seat or backrest (54)
503 ..Bed or body support surface
504 ...Spring
505 ...Headboard or footboard
506 ....Simulative
507 ....Top rail and end post formed of contiguous material having uniform configuration
508 ....Spaced repeating vertical slats or tubes
509 ..Work surface, storage, merchandising or display unit
510 ...Drawer or bin
511 ...Top or shelf
512 ARTICLE SUPPORT, HOLDER OR DISPENSER, NOT ELSEWHERE SPECIFIED (55)
513 .Depended from horizontal surface (56)
514 ..Plural shelves or provision for plural containers
515 .Sequential article dispenser (57)
516 ..Disposable cup
517 ..Package, e.g., cigarette, etc.
518 ..Roll or interfolded sheet
519 ...Combined with diverse article
520 ...Provision for plural rolls
521 ...Vertical spindle
522 ...Towel
523 ...Toilet paper
524 .Bathroom accessory fixture
525 ..Shower or bath caddy
526 ..Razor or razor blade holder
527 ..Combination fixture
528 ...Toothbursh holder
529 ....And soap dish
530 ....And dentifrice dispenser
531 ....And tumbler holder
532 ...Soap dish
533 ....And grab bar
534 ..Toothbrush holder
535 ..Tumbler or cup holder
536 ..Soap dish or bar holder (58)
537 ...Wire type
538 ...Magnetic type
539 ...Simulative
540 ...Attachable to vertical surface
541 ..Collapsible tube squeezer or holder
542 ..Dispenser for toiletries, e.g., liquid soap, lather, dentifrice, etc.
543 ...Hot lather type
544 ...Plural valve
545 ...Wall mount type
546 ..Towel rack or ring (59)
547 ...With moveable clip or clamp means
548 ...Plural arm
549 ...Bar type
550 ...Element
551 ..Toilet brush holder
552 .Rack or holder for sports equipment
553 .Attachable to vertical surface
554 ..Whisk broom holder
555 ..Planar work surfaces, e.g., wall desk, etc.
556 ..Flower or plant holder
557 ...Simulative

ARTICLE SUPPORT, HOLDER OR DISPENSER, NOT ELSEWHERE SPECIFIED (55)
.Attachable to vertical surface
..Flower or plant holder
558 ...Plural
559 ..With fully enclosed compartment (60)
560 ...With drawer
561 ...Plural doors
562 ..Corner type
563 ..Simulative
564 ...Animate
565 ...Plant life
566 ..Wire type support surface
567 ..Horizontal support surface (65)
568 ...Combined with mirror
569 ...Plural
570 ....Vertically arranged
571 .....Horizontally divided
572 ...Distinct separate brackets for support surface
573 ...With storage compartment
574 ...Shelf or tray type
575 WINDOW COVERING
576 .Simulative
577 .Venetian blind
578 .Tieback type curtain or drape
579 .Valance, corner panel, or portiere
580 .Element or attachment
581 ..Pull cord or tassel
582 CARPET, FLOOR MAT, OR RUG
583 .Bath or door mat
584 ..Bathtub applique
585 ..Perforate
586 ...Link type
587 ..Element
588 .Simulative (61)
589 ..Animate
590 ...Canine motif
591 ...Humanoid
592 .Oval, round, or irregular in form
593 .Fringed
594 ..Four sides
595 HOUSEHOLD LINEN, MATTRESS, OR CUSHION (62)
596 .Mattress, cushion, or bed linen (63)
597 ..Simulative
598 ...Animate
599 ....Humanoid
600 ...Plant life
601 ..Pillow, cushion or cover therefor (64)
602 ..Sheet
603 ..Bedspread, blanket, or comforter
604 ..Inflatable
605 ..Bed type mattress
606 ..Element or attachment
607 ...Bedclothes holder or fastener
608 .Towel or washcloth
609 ..Animate motif
610 .Furniture or appliance cover or protector
611 ..Seat cover or liner
612 ..Table or furniture scarf
613 ..Doily or place mat
614 ...Animate motif
615 ...Substantially circular format
616 ...Substantially rectangular or square format
617 ..Tablecloth
618 ...Card table type or with gameboard motif
619 ...Animate simulation
620 ....Humanoid
621 ...Oval or round shape or dominant motif
622 ...With distinct grid pattern
623 ...With simulated flower holder, e.g., vase, basket, etc.
624 ...With bow or ribbon simulation
625 ...With edible product representation

SEARCH NOTES FOR CLASS D6
(1) Classified by full-line disclosure
(2) For hand-held or body-attached mirror, see D28-64.1+.
For combination with freestanding furniture, see subclasses 396+.
For combination with horizontal support surface, see subclass 568
For furniture type book reading stand, see subclass 419.
(3) For combination with freestanding furniture, see subclasses 329+.
For freestanding apparel support, see subclasses 411+.
For combination with seat, see subclass 343.
For freestanding towel support, see subclass 410.
For wall-mounted coat hook, see D8-349+.
For example, a coat hook attachable directly to a wall, door, etc., would be classified in D8 whereas a hook unit comprised of a furniture-like mount which is then attachable to a verticle surface is classified here.
(4) Contains essentially freestanding furniture, but also includes cantilevered types such as chairs, etc.
For wall-mounted desk, shelf or similar support, see subclasses 512+.
(5) For merchandise display panel, see subclasses 449+.
(6) For swing or rocker, see subclasses 344+.
For chair without provision for restraint, see subclasses 334+.
(7) For leg, see subclass 495+.
For hammock, see subclass 387.
(8) For seating unit convertible to bed see other subclasses indented under subclass 334.
(9) For juvenille high chair, see subclass 339.
(10) For elevator seat without provision for work surface, see other subclasses indented under sublass 334.
(11) For end frame, see subclass see suclasses 492+.
(12) For freestanding apparel support, see subclasses 411+.
(13) Exclusive of upholstery fabric.
(14) For bench type seating unit with armrest, see subclass 355.
For straddle type seat, see subclass 354.
(15) For step ladder, see D25-65.
(16) Exclusive of upholstery fabric.
(17) Includes humanoid.
(18) For chair combined with distinct foot rest, see subclass 335.
(19) If seating unit is upholstered, it is classified below.
(20) Runners which are laterally joined at all extremities thus forming a boxed or enclosed base are not considered to be distinct runners
(21) Includes infant dressing table or bathing unit.
(22) For seating unit convertible to bed see subclasses indented under sub class 382.
(24) Excludes internal combination such as work surface and storage unit,

storage and merchandising unit, etc.
Excludes combination with mirror. See furniture item per se.
(25) If lamp is concealed to illuminate contents, classified with specifi furniture article below.
(26) If plant container is disclosed, classified as a planter in D11-143+.
For wall-mounted type, see subclasses 556+.
(27) For clothing support, see subclass 411.
(28) For support wherein article of apparel is supported upon a shelf, bracket, etc., see subclasses 449+.
For enclosed cabinet, see subclasse 432+.
(29) For freestanding carrel type telephone enclosure, see subclass 421
For wall-mounted telephone enclosure, see subclasses 553+.
(30) For bookend, see D19-34.1+.
For easel or bookrest type support, see subclasses 300+.
(31) For furniture with inclined display or storage surface, see subclasses 436+ or 449+.
(32) For desk with tambour closure, see subclass 424.
(33) If storage area is not indicated, classified as a table in subclasses 480+.
(34) Exclusive of auxiliary sliding shelf.
(35) Exclusive of mirror.
(36) For pivoted display panels, see subclass 454.
(37) To be classified in this and in indented subclasses, there must be a clear indication of access to the contents e.g., door or corresponding hardware. If glass panels permit viewing contents, article is classified in subclasses 449+.
(38) Includes humanoid.
(39) Sole top surface not considered.
(40) For extending surface such as leaf, see subclass 430.
(41) Excludes plural surface.
(42) Includes humanoid.
(43) For table or singular planar surface, see subclasses 480+.
(44) Excludes wire shelf in showcase type; see subclasses 470+.
(45) For shelf or bin, see subclasses 475+.
(46) Aperture must have appearance characteristics of a surround for a transparent panel; for shelf unit lacking same, see following subclasses.
(47) For bin or table having plural parallel support surfaces, see subclasses 49+.
For accessory work surface such as tray for chair, or top per se, see subclasses 509+.
For table with extending or drop leaf, see subclass 430.
(48) If storage area is disclosed, classified in subclasses 432+ or 449+.
(49) For general purpose hardware such as caster, hinge, knob, etc., see Class D8.
(50) Includes furniture door.
For bed headboard, see subclasses 505+.
(51) For hardware type item such as leg end cap, ferrule, caster, etc., D8-374+.
(52) For freestanding seat unit, frame or shell, see subclasses 334+.
For attachable work surface accessory, see subclasses 509+.
(53) For loose pillow, see subclass 601.
Includes armrest or headrest.
(54) For freestanding footrest, see subclasses 349+. Disclosure including both seat and backrest is considered to be seating unit and is therefore classified in subclasses 334+.
(55) Includes only those supports which are comprised of a horizontal supporting surface such as a shelf, a partially or fully enclosed structure, or combination thereof. Supports or brackets per se, in the form of hooks, clips, clamps, brackets and the like, or any lesser article than a shelf-like article, are found in Class D8.
(56) For support hook or bracket per se, see subclasses 524+.
(57) Includes holder for roll goods, etc
(58) Includes brackets per se.
(59) For freestanding type, see subclass 410.
(60) Includes medicine cabinet.
(61) Exclusive of plant life per se.
(62) Napkin included in this subclass.
(63) Includes bedspread, blanket, afghan comforter, mattress cover, etc.
(64) Includes pillowcase.
(65) Includes wire or peg type horizonta support surface.

CLASS D7 EQUIPMENT FOR PREPARING OR SERVING FOOD OR DRINK NOT ELSEWHERE SPECIFIED

Excluded from this class are:
Architectural or display fountain; see D23-201.
Bin or open top storage tray or basket; see D34-40+.
Bottle or can opener; see D8.
  for bottle, can, etc.; see D9-437.
Bristled brush or broom; see D4.
Bristled toilet article brush; see D4.
Calling card receiver; see D6-449.
Coaster combined with ash receiver; see D27-109 or 126.
Coin operated food vending machine; see D20-1+.
Coin tray; see D99-34.
Combined with key holder; see D3-64.
Combined with closure or attachment
  for bottles, can, etc.; see D9-437.
Crisper drawer for refrigerator; see D15-89.
Crumb collector; see D32-74.
Floor mat; see D6-209+.
Floor scrubbing or brushing machine or other surface treatment such as vacuum cleaner; see D32-15+.
Food display unit, per se; see D6-396+.
General purpose valve; see D23-238+.
Handle or knob for stove; see D8-307+.
Ice cream freezer; see D15-82.
Knife sharpener attachment for food mixer; see D8.
Laundry or ironing machine; see D32-9.
Machete or hunting knife; see D22-118.
Major appliances; see D32-1+.
Measuring dispenser for powdered or granular materials; see D6-515.
Measuring implement; see D10-46.2.
Minnow bucket or pail; see D22-22.
Packaging receptacle; see D9.
Packaging tray; see D9-424+.
Pharmaceutical muddler or pestle; see D24-23.
Place mat; see D6-271.
Sequential dispenser for dishes; see D6-408.
Scraper combined with bristled brush; see D4.
Shoe scraper attachment for vehicle; see D12-203.
Sponge for corporal use; see D28-63.
Toy housewares; see D21-121+.
Trash compactor container; see D34-3.
Tray, general purpose; see D6-449+ or 512+.
Vase; see D11-143+.
Wire rack; see D6-449+.

500 CHINA, GLASSWARE, SERVING VESSEL OR TRAY (1)
501 .Lazy susan type
502 .Butter container (i.e., designated as such) (2)
503 .Egg cup (i.e., designated as such) (3)
504 .Taco holder
505 .Plural distinct articles, or combined (4)
506 ..Simulative in form
507 ..Drinking vessel with diverse article (5)
508 ..With nutcracker (6)
509 .Drinking vessel
510 ..With anti-spill feature
511 ..With closure
512 ..Collapsible
513 ..Plural cavity
514 ..Simulative (7)
515 ...In form
516 ....Animate
517 .....Human
518 ....Flower, bud, fruit or vegetable
519 ...Animate
520 ....Human
521 ...Flower, bud, fruit or vegetable
522 ....Goblet
523 ..Three or more repeats, or uniform configuration, about axis
524 ...Goblet
525 ....Helical or sinuous detail
526 ....Incised V-shaped grooves defining pattern (i.e., cut glass type, etc.) (8)
527 ....Straight vertical ribs or grooves, or with planar surfaces
528 ....Repeating circumferential ribs or grooves
529 ...Helical or sinuous detail
530 ...Incised V-shaped grooves defining pattern (i.e., cut glass type, etc.) (8)
531 ...Straight vertical ribs or grooves, or with planar surfaces
532 ...Repeating circumferential ribs or grooves
533 ..With handle
534 ...Plural
535 ...Asymmetrical
536 ...Closed loop
537 ..Goblet
538 .Covered (9)
539 ..Simulative (7)
540 ..Three or more repeats, or uniform configuration, about axis
541 ..Compartmented or with division
542 ..Symmetrical on two axes
543 .With handle, finger grip, or opposed carrying flanges (10)
544 ..Simulative (7)
545 ..Symmetrical on two axes
546 ...Compartmented, or with perforation or collar forming restraint for food or container
547 ...Centrally disposed handle
548 ...Handle having plural attachment points or with finger opening
549 ..Compartmented, or with perforation or collar forming restraint for food or container
550 .Tray (i.e., designated as such) (11)
551 ..Simulative
552 ..Three or more repeats, or uniform configuration, about axis
553 ..Compartmented, or with perforation or collar forming restraint for food or container (12)
554 ...Bilaterally symmetrical
555 .Compartmented or with vertical division (13)
556 ..Simulative (7)
557 ..Three or more repeats, or uniform configuration, about axis
558 .Columar support, or footed base (e.g., compote, etc.)
559 ..Simulative (7)
560 .Ornamentation on exterior surface
561 ..Incised V-shaped grooves defining pattern (8)
562 ...Three or more repeats, or uniform configuration, about axis
563 ....Simulative (7)
564 ..Simulative (7) (35)
565 ..Three or more repeats, or uniform configuration, about axis

CHINA, GLASSWARE, SERVING VESSEL OR TRAY (1)
566 .Scalloped, fluted or irregular periphery in top plan (44)
567 ..Simulative (7)
568 ...Three or more repeats, or uniform configuration, about axis
569 ...Animate
570 ..Three or more repeats, or uniform configuration, about axis
571 .Simulative (7)
572 ..Three or more repeats, or uniform configuration, about axis
573 ...Animate
574 ...Ribbon or bow
575 ...Garland or festoon
576 ...Flower, bud, fruit or vegetable
577 ....With container (e.g., basket, cornucopia, etc.)
578 ..Animate
579 ...Human
580 ..Architectural or geographic
581 ..Ribbon or bow
582 ..Flower, bud, fruit or vegetable
583 ...With container (e.g., basket, cornucopia, etc.)
584 .Three or more repeats, or uniform configuration, about axis
585 ..Peripheral or border pattern (45)
586 ..Symmetrical on two axes
587 .Bilaterally symmetrical
588 .Peripheral or border patten (45)
300 BEVERAGE OR LIQUID SERVING OR DISPENSING (21)
300.1 .Shaker or siphon bottle
300.2 .Stirrer or straw (49)
301 .Simulative (22)
302 ..Handheld
303 ...With rim-mounted pouring lip
304 .Upwardly directed beverage stream with catch basin (i.e., drinking fountain type, etc.)
305 .Combined with diverse article, e.g., cup or condiment dispenser, etc.
306 .Console or floor type
307 ..Provision for plural valve
308 .Provision for plural valve
309 .Automatic drip or pressure brewing type, or having decanter warming surface
310 .Superposed components, e.g., vacuum or drip coffee maker, etc.
311 .With support or overflow tray for receiving vessel
312 .Provided with flow director (23)
313 ..Tap or valve actuated
314 ..Pivotally mounted for pouring
315 ..Plural
316 ..Rim-mounted pouring lip
317 ...With closure
318 ...With handle
319 ....Plural attachment points or with finger opening
320 ..With pivoted handle or provision therefor
321 ..With closure
322 ...Latch or lever operated
589 MEASURED OR SEQUENTIAL DISPENSER (E.G., LEVER OR KNOB ACTUATION, ETC.) (46)
590 CONDIMENT DISPENSER, CASTER OR CADDY (47)
591 .Shaker type
592 ..Combined with support
593 ...Simulative
594 ..Simulative
595 ...Animate
596 ..Plural cell or outlet
597 ..Three or more repeats, or uniform configuration, about axis
598 .Cruet, decanter or pitcher type (48)
599 .Simulative
600 .With carrying handle
601 HOLDER OR STORAGE RECEPTACLE (50)
602 .Of food, beverage or container therefor (51)
603 ..Ice serving or wine chilling bucket
604 ...Simulative
605 ..Insulated type (E.G., insulated jacket, jug, cooler, etc.) (52)
606 ...Simulative
607 ...Flaccid walls
608 ...Circular in cross-section
609 ..Breadbox type (53)
610 ..Cake or pie type
611 ..Egg type
612 ..Canister or cookie jar type
613 ...Simulative
614 ...Plural cell
615 ...Three or more repeats, or uniform configuration, about axis
616 ..Provision for multiple container or with plural compartment (e.g., milk or soda bottle, glass, cup, etc.) (54)
617 ...Simulative
618 ...Primarily of wire material
619 ..Beverage container (55)
620 ...Provision for attachment to other surface (e.g., clamp, hook, arm, etc.)
621 ...Pivoted or gimbals amount
622 ...With finger grip or handle (56)
623 ....Simulative
624 ...Coaster or sheath
625 ....Simulative
626 ..With centrally disposed pass-through handle (e.g., lunch box type, etc.)
627 ...Simulative
628 ..Simulative
629 ..With closure
630 ..Three or more repeats, or uniform configuration, about axis
631 .Of napkin (57)
632 ..Combined with holder for diverse article
633 ..Ring or clip
634 ..Simulative
635 .Of stirrer, straw or toothpick (58)
636 ..Simulative
637 .Of processing, preparing or handling implement, or of place setting utensil (59)
638 ..Combined
639 ..Simulative
640 ..Three of more repeats, or uniform configuration, about axis
641 ..Bilaterally symmetrical
642 PLACE SETTING, TABLE SERVICE UTENSIL OR HANDLE THEREFOR (60)
643 .Combined
644 ..Opposed (i.e., double ended, etc.)
645 .Plural distinct pieces (i.e., knife and fork, fork and spoon, etc.) (61)
646 .Powered (62)
647 .Pierced bowl (63)
648 .Loop or finger encircling handle
649 .Knife or blade (64)
650 ..Serrated edge
651 ..Simulative (7)
652 ..Asymmetrical in top plan
653 .Fork or spoon (81)
654 ..Simulative (7)
655 ...Vehicle
656 ...Animate

PLACE SETTING, TABLE SERVICE UTENSIL OR HANDLE THEREFOR (60)
.Fork or spoon (81)
..Simulative (7)
...Animate
657 ....Human
658 ...Architectural or geographic
659 ...Fruit, vegetable or seed pod
660 ...Flower or bud
661 ....Asymmetrical
662 ..Asymmetrical in front elevation
663 ...In form
664 ..Handle of distinct or plural materials
323 WARMING OR COOKING (24)
324 .Solar
325 .Popcorn (25)
326 .Bottle or baby food warmer
327 .Invertible or convertible
328 .Radiant toaster (26)
329 ..Combined
330 ..Top loading
331 .Vertically disposed heating element
332 .Solid or liquid fuel outdoor type
333 ..Masonry type
334 ..Mobile unit (i.e., provided with wheels, etc.)
335 ..Unitary vertical support column
336 ...Cantilevered cooking surface
337 ..Table top type
338 .With rotating or conveying feature
339 .Freestanding or built-in type
340 ..Combined oven and surface unit
341 ...Cantilevered shelf or warming oven over burner area
342 ...Simulative or baroque motif
343 ....Animate
344 ....Alpha or numeric motif
345 ....Simulative
346 ..Surface unit (27)
347 ..With fully enclosed cooking or warming area
348 ...Oven
349 ....Wall mounted type
350 .Countertop unit having side mounted door or opening
351 ..Microwave
352 .Opposed heated surfaces (28)
353 ..Plural lid
354 .Vessel, e.g., cooking container, pan, etc. (29)
355 ..With integral spaced heat source (i.e., chafing dish type, etc.) (30)
356 ..Superposed vessels (31)
357 ..Plural cooking cell or compartment (32)
358 ..Pressure cooker
359 ..Textured, irregular or convex cooking surface (i.e., grid or rib, etc.) (33)
360 ..Plural grip or provision therefor
361 ..Singular handle or provision therefor
362 .Heat source or planar heated surface (34)
363 ..Planar, e.g., griddle, warming surface, etc.
364 ..Plural
365 ..With spaced heater element or provision therefor
366 ...Chafing dish type
367 ..Hot plate type or having support feet
368 PROCESSING, PREPARING OR HANDLING (65)
665 .Squeezer or extractor (66)
666 ..Pivoted jaws or lever operated
667 .Sifter or strainer
668 ..Relative movement of parts while performing funtion, or provision therefor
669 .Hand operated (67)
670 ..Butter applicator (68)
671 ..Ice pick
672 ..Mold, cutting die, branding implement, or article for measured cutting (69)
673 ...Slicer or guide therefor
674 ...Pivoted cooperating components
675 ...Simulative
676 ....Animate
677 ...Three or more repeats, or uniform configuration, about axis
678 ..Grater
679 ..Mill or grinder (71)
680 ..Nut cracker (72)
681 ..Ice cream type
682 ..Pounding or mashing (73)
683 ..Clamping or piercing food holder (74)
684 ...Simulative
685 ....Clamping
686 ...Clamping
687 ....Pivot point between jaws and handle
688 ..Lifting, stirring, turning or spreading (75)
689 ...Simulative
690 ...Wire
691 ...Scoop or ladle (76)
692 ...Perforated
693 ..Cutting, peeling, shelling or coring (77)
694 ...Rotary blade
695 ...Shielded edge, or opposed facing edges
696 ...Serrated or sinuous edge
697 ..Roller
698 ..Cutting or kneading board
699 ...Simulative
700 ..Funnel
369 .Separating
370 ..Dairy
371 ...Churn
372 .Grinding or crushing (36)
373 ..Coffee
374 ..Ice (37)
375 ..Waste disposal
376 .Mixing
377 ..Homogenizer or emulsifier
378 ..Blender (38)
379 ..Provision for depending beater
380 ...Hand powered
381 .Cutting, slicing or piercing (39)
382 ..Tenderizer
383 ..Rotating blade
384 ...Processor
385 ..Reciprocating blade or saw type (40)
386 .Power base unit
387 ELEMENT OR ATTACHMENT (41)
388 .Insulating or supporting stand or mat (e.g., trivet, stove mat, etc.)
389 ..Simulative
390 .Toaster
391 .Utensil cover
392 ..Dispensing
392.1 ..For china, glassware or serving vessel
393 .Handle or knob
394 ..Provides finger pass-through
395 ..Attaches at end of in-line elongated axis
396 ..Percolator knob
396.1 .China, glassware, serving vessel or tray
396.2 ..Drinking vessel
396.3 ...Mustache guard
396.4 ..Decal or surface pattern (78)
396.5 ...Border
396.6 ..Base or foot (79)
397 .Serving or dispensing type
398 ..Tap, valve, or spout

	ELEMENT OR ATTACHMENT (41)
	.Serving or dispensing type
399	..Coffee or tea maker
400	...Filter or holder therefor
401	...Upper bowl (42)
401.1	.Condiment dispenser, caster or caddy (80)
401.2	.Place setting, table service utensil or handle therefor (82)
402	.Warming or cooking (43)
403	..Base, stand or leg
404	...Fuel tank or bottle support
405	..Door or panel
406	..Backsplash, control panel, or shelf unit
407	..Burner, liner or element thereof
408	...Grid or grate
409	..Grid, grille, holder or insert
410	...Waffle
411	...Toast
412	.Processing, preparing or handling
413	..Blender container
414	..Grinder or crusher
415	..Liquid
416	FIRE STARTER OR IGNITER
417	.Container type, e.g., charcoal bucket, etc.
213	MISCELLANEOUS

SEARCH NOTES FOR CLASS D7

(1) Classified by both full and broken lines;
  Includes pieces which are useable as either serving or cooking vessels, e.g., microwave safe ceramic, glass, plastic or other nonmetallic plates, casseroles, etc.;
  For bowl specifically designed for mixer or blender, see subclasses 412+;
  For cake or pie storage container, see subclass 610;
  For cocktail shaker, see subclass 300.1;
  For condiment dispenser or carrier therefor, see subclass 590;
  For cooking vessel, subclass 354;
  For ice serving or wine chilling bucket, see subclasses 603+;
  For pouring vessel, see subclass 312;
  For relish dish, see subclasses 590+;
  For sequential or measured food dispenser, see subclass 589;
  For storage or handling container, see subclass 601;
(2) For butter applicator, see subclass 670;
  For sequential butter dispenser see subclass 589.
(3) For egg storage article, see subclass 611.
(4) For cream and sugar container with caddy, see subclass 598.
(5) For drinking cup combined with vacuum bottle, see subclass 608.
(6) For nutcracker per se, see subclass 680.
(7) Exclusive of leaf, plume or scroll.
(8) Each wall of "V" must repeat (be a mirror image of) the opposite wall.
(9) For element or attachment, see subclasses 387+;
  For vessel with pouring or portion control feature, see subclasses 312+.
(10) For handled sheath or cover for drinking vessel, see subclass 622;
  For compartmented beverage carrier, see subclasses 616+.
(11) For element or attachment, see see subclasses 387+;
  For compartmented beverage carrier, see subclasses 616+;
  For tray combined with additonal serving vessel, see subclasses 505+;
  For condiment caster or caddy, see subclasses 590+;
  For carrier for cup, glass, etc., see subclasses 590+;
(12) For holder designed exclusively for plural drinking vessels, see subclasses 616+;
(13) For element or attachment, see subclasses 387+;
  For compartmented beverage carrier, see subclasses 616+.
(21) Classified by full-line disclosure; includes casing; element excluded; see subclasses 387+.
(22) Includes barrel simulation.
(23) For cooking vessel; see subclasses 354+.
(24) Classified by full-line disclosure.
  Element excluded; see subclasses 402+.
(25) For coating machine; see subclass 376.
(26) For toaster-oven combination; see subclass 350.
(27) Includes range top surface.
  For hot plate, see subclasses 362+
  For burner or element thereof, see subclasses 407+.
(28) For waffle grid, per se, see subclass 410.
(29) Includes deep fat fryer.
  For heat source, per se, or griddle, see subclasses 362+.
(30) For heat source or warmer base, per se, see subclass 366,
(31) For double boiler insert, see subclass 409.
(32) For waffle iron, see subclasses 352+.
(33) For food support, per see, such as broiler pan insert, grid type holder, etc., see subclasses 409+.
  For waffle iron, see subclasses 352+.
(34) For built-in range top, see subclass 346.
  For pot, pan or dish support without provision for heat source, see subclass 403.
(35) For similar articles having a cover, see subclass 539.
(36) For juicer, see subclasses 48+.
(37) For cracking hammer, see subclass 101.
(38) For power base unit, see subclass

386.

(39) For abrasive type vegetable peeling machine, see subclass 372.

(40) Includes bread slicing machine.

(41) For article casing, see subclasses 300+, 323+, 368+, 589, 590+ and 601+.

(42) For decanter, see subclasses 312+.

(43) For broiler pan insert or food holder, per se, see subclass 409.

(44) Exdlusive or regular geometric shape such as triangular, polygonal, etc.

(45) For border pattern decal, see Subclass 396.5.

(46) For napkin dispenser, see subclasses 631+;
For straw or toothpick dispenser, see subclasses 635+.

(47) Classified by full line disclosure
Includes casing or body;
Includes relish dish;
For bottle holder, see subclass 616;
For butter applicator, see subclass 670;
For hand operated grinder or mill, see subclass 679;
For spice rack, see subclass 616.
For static sugar bowl, see subclasses 500+.

(48) Includes combination of sugar container and creamer with stand.

(49) For cocktail pick, see subclass 683.

(50) Classified by both full and broken lines;
For element or attachment, see subclass 387.

(51) For condiment caster, see subclass 590;
For support for china or serving vessel, see subclasses 396.1+;
For sequential or measured food dispenser, see subclass 589.

(52) For similar container with beverage dispensing valve or with flow directing spout, see subclasses 312+.

(53) If breadbox is combined with additional, diverse type of storage compartment, see subclasses 616+.

(54) Includes draining stand for plural food containers;
For coasters disclosed as a set, see subclasses 619+.

(55) Includes draining stand for food container;
For pouring vessel or serving pitcher, see subclasses 312+.

(56) Includes handle per se, which is directly attachable to a container.

(57) For combination with condiment dispenser or holder, see subclasses 590+;
For facial tissue dispenser, see D6-518+.

(58) For sequential dispenser, see sublcass 589.

(59) Includes holder for cutlery.

(60) Classified by both full line and broken lines;
Includes in this subclass, chopsticks;
Element included.
For food preparation tool, see sublcasses 368+.

(61) Exclusive of combination disclosure, in an integral form, of fork and spoon, etc.; see subclasses 643+.

(62) Includes power handle per se.

(63) For ladle, see subclass 691.

(64) For scraping or spreading spatula, see subclass 688;
For special purpose cutting tool, e.g., vegetable peeler, shelling knife, etc., see subclasses 693+.

(65) Classified by both full and broken lines;
For holder or storage receptacle, see subclasses 601+;
For place setting or table service utensil, see subclasses 642+.

(66) Includes squeezer or extractor attachment for kitchen machine;
For baster or injector, see subclass 669;
For nutcracker, see subclass 680.

(67) Includes baster;
For hand operated mixer, see subclass 380;
For powered appliance, see subclasses 369+.

(68) For serving container, e.g., dish, etc., see subclass 502.

(69) For machine, see subclasses 381+.
For baking pan, see subclass 354;
For vegetable cutter which does not provide for specific shape or thickness, see subclass 693;
For waffle iron mold, see subclass 410.

(70) For vegetable corer, see subclass 693.

(71) For powered mill or grinder, see subclasses 372+.

(72) For serving vessel, or for combination with same, see, respectively, subclasses 500+ and 508.

(73) For squeezer, e.g., garlic press, etc., see subclass 665.

(74) Includes cocktail pick;
For squeezer or extractor, e.g., tea bag squeezer, etc., see subclass 665;
For substance injector, see subclass 669.

(75) Includes plate or pan lifter;
Includes squeegee or spatula type scraper;
For abrasive or cutting type scraper, see subclass 693.

(76) For slotted spoon, see subclass 647.

(77) For general purpose flat bladed knife, see subclasses 649+.

(78) For general purpose decal, see D20-11;
If edge of serving vessel, plate, etc. is shown either in

full or in broken lines, patent is classified with item per se above.

(79) For beverage container sleeve or carrier, see subclasses 619+; For serving dish or plate holder, see subclasses 602+.

(80) For caster, carrier, etc., see subclass 590.

(81) For carving fork, see subclass 683.

(82) For cutlery support, see subclass 637.

CLASS D8 TOOLS AND HARDWARE

Excluded from this class are:
Abrading machines and attachments; see D15-124+.
Agricultural machines which are not hand-held; see D15-10+.
Apparel fastener; see D11-200.
Apparel hook mounted to vertical surface; see D6-553+.
Apparel type fastener, e.g., snap, zipper, etc.; see D11-200+.
Architectural post or column; see D25-126+.
Battery terminal clamp; see D13-120.
Bed frame component; see D6-503+.
Capstan; see D34-33.
Can or bottle opener in combination with punching and pouring attachment for can, etc.; see D9-437.
Chain, jewelry; see D11-13.
  Tire; see D12-154.
Chopping, mincing, cutting, grinding, or mixing implement for food; see D7-669+.
Cigar cutter or smoker's tool; see D27-195 or 196
Clasp, clamp, clip, etc., for jewelry; see D11-86+.
Cleat or spike for shoe; see D2-317.
Clip, for holding blanket or sheet; see D6-607.
  For pen or pencil, see D19-56.
Coffin handle; see D99-15+.
Coffin screw; see D99-14.
Control panel, for air conditioner; see D23.
  For automobile, ship, aircraft, etc., see D12-192.
  For data processing machine or telephone switchboard, see D14.
  For measuring or testing machine; see D10.
Cornice, fabric; see D6-579.
  Rigid; see D25-55.
Door chime or bell; see D10-116+.
Drapery tieback, fabric; see D6-578.
Electrical connector; see D13-133+.
  Insulator; see D13-129+.
  Junction box; see D13-152.
  Wall outlet per se or in combination with escutcheon; see D13-137+.
Escutcheon plate for radio; see D14-76.
  For television, see D14-84.
Faucet or valve handle; see D23-250+.
Fence post or cap; see D25-126+ or 135.
Fireplace Equipment set; see D23-403+.
Fishing reel; see D22-137.
Fitting or conduit, for fluid handling; see D23-259+.
  For electrical conductor, see D13-155.
Flagpole holder; see D11-182+.
Garment hanger; see D6-315+.
Handbag frame per se or in combination with latch; see D3-54.
Handle attachment for drinking cup, pitcher, etc.; see D7-393+.
Handle, for brushware; see D4.
  For cleaning equipment, see D32-35+.
  For cooker, e.g., toaster, waffle iron, etc., see D7.
  For firearm, fishing rod or fly swatter, see D22-108.
  For knife, fork, spoon, pot, pan, etc., see D7.
  For luggage or handbag in combination with article per se, see D3-30.1+.
  For miscellaneous sporting goods, see D21-191+.
Hinge or lens fastener for eyeglasses; see D16-123+.
Horseshoe calk; see D30-99.
Hose reel combined with cart; see D34-14.

Internal washer, gasket, or packing for faucet or valve; see D23-269.
Knife, combined with money clip; see D11-78.1.
  Combined with key holder, ring, case, etc.; see D3-62+.
Lamp mantle support; see D26-144
Machinery parts, e.g., drill bit, die, reamer, etc.; see D15-135+.
Money, tie or scarf clip; see D11-78.1 or 200+.
Multiple-pronged fastener for necktie, etc.; see D11-202+.
Name or drawer plate; see D20-15
Paper clip or fastener; see D19-86.
Paper punch, desk type; see D19-72.
Pencil sharpener; see D19-73+.
Power source for soldering or welding equipment; see D15-144.
Protective slug for shoes; see D2-317.
Railway tie clamp; see D12-51.
Reinforcing bar for concrete form; see D25-164.
Roof rack for vehicle; see D12-157.
Sawhorse; see D25-67.
Scaffold element or coupling; see D25-68+.
Shade pull of fabric or cord; see D6-581.
Shelf; see D6-567+.
Shoe calk or spike; see D2-317.
Stand-supported holder for flashlight; see D26-142+.
  For baby bottle, see D24-48.
Support for bathtub, sink, etc.; see D23-303.
Switch control per se or in combination with escutcheon; see D13-158+.
Tent peg; see D21-255.
Toy hand tools; see D21-120.
Venetian blind; see D6-577.
Wall-mounted support structure; see D6-553+.
Window shade; see D6-575+.
Work or tool holder, machine-attached; see D15-140.

1 TOOLS AND IMPLEMENTS FOR AGRICULTURE, FORESTRY AND HORTICULTURE (51)
2 .With discharge spout or nozzle, e.g., hand-held insecticide dusters, seed planters, etc.
3 .Finger-attached
4 .Jaws activated by relatively movable plural handles, e.g., tongs, plier type, etc.
5 ..Cutting blade
6 .Provided with cutting blade and tines
7 .Provided with cutting blade
8 ..Rotary or reciprocating
9 ..Notched or serrated
10 ..Shovel or trowel
11 ..Hoe or mattock
12 ..Scythe or harvesting knife
13 .Provided with tines
14 OTHER TOOLS AND IMPLEMENTS
14.1 .Lubricating or caulking gun
15 .Carpet
16 .Entire article formed substantially from a single piece of sheet material (1)
17 ..Wrench (2)

OTHER TOOLS AND IMPLEMENTS
.Entire article formed substantially from a single piece of sheet material (1)
18 ..Can or bottle opener
19 ..Substantially flat
20 ...Cutting blade, e.g., saw, etc.
21 .Wrench (3)
22 ..Adjustable
23 ...Swinging jaw
24 ...Torque
25 ...Ratchet
26 ..Combined with disparate article
27 ..Spanner
28 ..Open end or box
29 ..Socket
29.1 .Heat gun, e.g., paint stripper, etc.
29.2 .Defrosting implement
30 .Fusing, e.g., soldering, etc.
31 .Tire, e.g., repair, etc.
32 .Rail or pipe bender
33 .Can or bottle opener
34 ..Combined with disparate article (4)
35 ...Sharpener
36 ..Powered
37 ..Wall-mounted
38 ..Simulative in form or motif
39 ..Relatively movable plural handles
40 ..Hand-held and manipulated
41 ...With material-cutting element
42 ....Cork remover
43 ....Combined with cap-removing feature
44 .Strap or wire tensioning
45 .Plaster or masonry finishing (52)
46 .Anvil
47 .Chisel, nail set, awl, or wedge
48 .Staple remover
49 .Stapler
50 ..Anvil provides staple deformation
51 .With relative movement of parts while performing function
52 ..Jaws activated by relatively movable plural handles, e.g., pliers, etc.
53 ...With simulative motif
54 ...Jaws diverge as handles converge
55 ...Combination tool (5)
56 ...Work held between pivot and handles (6)
57 ...Loop-type handle, e.g., scissors, etc.
58 ...Opposed jaws and handles substantially similar
59 ..Transmitted by rotating crank-type handle
60 ..Pipe or tube cutter
61 ..Power tool
62 ...Sander or grinder
63 ....Knife or scissors sharpener (7)
64 ...Saw (8)
65 ....Chain
66 ....Circular
67 ...Plural handles
68 ...Pistol grip (9)
69 ...With loop-type handle
70 ...Attachments
70.1 .Film splicer or cutter
71 .Work or tool holder (10)
72 ..Clamp
73 ...C-clamp type
74 ...Vise
75 .Hammer type
76 ..Ax, hatchet, or adz
77 ..Mallet, e.g., opposed duplicate faces, etc.
78 ..Head
79 ...Claw
80 ..Handle or handle attachments
81 ..Combined with distinct tool element (11)
82 .Screwdriver type
83 ..Handle
84 ...Plural
85 ..Plural bit or socket
86 ..Bit or shaft
87 ..Plural function, e.g., combined with light, etc.
88 .Lever
89 ..Nail or pry bar
90 .Abrading
91 ..Sharpener
92 ...Razor or razor blade
93 ...Knife or scissors
94 ..Handle
95 .Handsaw
96 ..Blade supported at both ends
97 ..Handle
98 .Cutting
99 ..Folding or sliding blade
100 ...With simulative motif
101 ..Wood plane or drawknife
102 ..Letter opener
103 ...With simulative motif
104 ...Combined with disparate article or plural function
105 .Combination tool
106 .Adjustable
107 .Handle
300 HANDLE, KNOB OR PULL (12)
301 .Combined (13)
302 ..With latch actuator (14)
303 .Handlebar grip or hand grip
305 .Simulative
306 .Pivoted or hinged to use position
307 .Singular point of attachment
308 ..Lever
309 ...Crank (15)
310 ..Substantially circular or oval
311 ...With grip bar or pointer
312 ...With peripheral striations or depressions
313 .Recessed finger grip
314 ..With open ends
315 .Bar type, i.e., having gripping surface spaced from mounting surface (16)
316 ..Symmetrical in front elevation on transverse and longitudinal axes
317 ...Arcuate pattern or outline
318 ....Sinuous
319 ..Symmetrical in front elevation on transverse axis
320 ..Symmetrical in front elevation on longitudinal axis
321 .Element or attachment (17)
322 ..Cover
323 HINGE (18)
324 .Simulative
325 .Flexible singular element, i.e., self-hinge type
326 .For toilet seat
327 .Leaf type
328 ..Symmetrical leaves
329 ..Offset
330 LOCKING OR CLOSING DEVICE (19)
331 .Lock, latch or bolt (20)
332 ..With alarm
333 ..Closed loop
334 ...Padlock (21)
335 ....Simulative
336 ..Swinging into engagement
337 ...Rotary motion window lock (22)
338 ...With distinct lever, knob or key release, or with provision therefor
339 ..Sliding into engagement
340 ...Chained bolt

LOCKING OR CLOSING DEVICE (19)
.Lock, latch or bolt (20)
..Sliding into engagement
341 ...With distinct lever, knob or key release, or with provision therefor (23)
342 ...Resilient engagement
343 ..Element or attachment (24)
344 ...Keeper or receiver (25)
345 ....Hasp staple
346 ...Protective cover (26)
347 ...Key
348 ....Simulative
349 FASTENER, SUPPORT OR MOUNT NOT ELSEWHERE SPECIFIED (27)
350 .Escutcheon (28)
351 ..Simulative
352 ..Substantially circular or oval
353 ..Substantially rectangular or square
354 .Support, guide or spacer (29)
355 ..Adjustable (30)
356 ..For flexible continuous material, i.e., rope, hose, belting, etc. (31)
357 ...Ignition wire manifold
358 ...Reel (32)
359 ....With crank or handle
360 ...Pulley
360.1 ...Twine holder
363 ..Standoff or crane type, e.g., handrail support, curtain rod support, etc. (34)
364 ...Electrical insulator bracket (35)
365 ...Simulative
366 ...Formed entirely of sheet material
367 ..Hook or eye (36)
368 ...Rigid loop or tieback for drapery (37)
369 ...With drapery pleating feature (38)
370 ...Formed entirely of wire
371 ...Formed entirely of sheet material
372 ...Plural (39)
373 ..Article supported vertically or suspended (50)
374 ...Furniture bearing (40)
375 ....Caster
376 ...Elongated, e.g., curtain rod, pole, etc.(41)
377 ....Track type, i.e., traverse rod, door track, etc.
378 ....Finial
379 ....Center ornament
380 ..Article supported horizontally
381 ...Shelf bracket (42)
382 .Fastener or coupling (43)
383 ..Locking slip or clutch for flexible material
384 ..Wall tie
385 ..Expanding, e.g., wall anchor
386 ...Rivet
387 ..Externally threaded, i.e., screw or bolt
388 ..Piercing
389 ...Plural piercing elements
390 ....Staple type, i.e., having two spaced points
391 ...Nail or spike (44)
392 ....Offset head
393 ....With rib or groove on shank
394 ..Clamping or gripping (45)
395 ...Resilient or spring biased
396 ...For cylindrical material
397 ...Nut or head
398 ...Wing type
399 ..Washer or nut lock
400 FITTING FOR DOOR, WINDOW OR FURNITURE NOT ELSEWHERE SPECIFIED (46)
401 .Knocker
402 .Stop or bumper (47)
403 ..Corner protector
404 .Push plate (48)
499 MISCELLANEOUS (49)

SEARCH NOTES FOR CLASS D8

(1) Letter openers are excluded; search subclasses 102+.
(2) Includes wrenches in combination.
(3) Power wrenches are excluded; search subclasses 61+.
(4) Combination with pocketknives are excluded; search subclasses 99+.
(5) For additional plier type combined with wrenches, search subclass 25.
(6) For can openers with similar arrangement of elements, search subclass 39.
(7) For sharpeners combined with can openers, search subclass 35.
(8) For handsaw, search subclasses 95+.
For saw attachments for other tools, search subclass 70.
(9) For additional tools with pistol grip, e.g., soldering gun, etc., search subclass 30.
(10) For other devices for holding flexible or rigid cylindrical material, search subclasses 356+ and 396.
Includes bagging tool.
(11) For hammer type combined with wrenches, search subclass 26.
(12) This and indented subclasses restricted to handle, knob, etc., which provide a grip (a) for lifting or grasping or (b) closing a door, panel, etc.
For lock, latch or actuator per se, see subclasses 331+.
(13) For knob combined with escutcheon or dial, see subclasses 307+.
(14) Includes only combination of handle, knob, etc., with latch-actuator button, thumb lever, etc.
If latch is disclosed, see subclasses 331+ below, particularly 338 and 341.
(15) For casement window operator, see subclass 400.
(16) For elongated handle not having grip opening, see subclasses 300 and 313+.
(17) For escutcheon, see subclasses 350+.
(18) Element included in this and in indented subclasses.
(19) Includes door closer.
(20) Includes casing.
Includes bar for jamming door in closed position.
For fastener which does not cooperate with keeper or receiver, e.g., fastener which acts directly upon door, window, shutter, etc., see subclasses 402+.
(21) Restricted to lock having hinged or pivoted link.
(22) For fastener to hold door or window in various positions, see subclass 402 below.
(23) Includes drawbolt-type latch catch.
(24) For handle or knob, see subclasses 300+.
For escutcheon, see subclasses 350+.

(25) For tongue or latch element, see subclasses 336+ and 339+.

(26) For keyhole escutcheon, see subclasses 350+.

(27) Element included in this and in indented subclasses.
Includes end or swivel for rope, cable, etc.

(28) Includes combination with electric switch button or actuator, or with electric receptacle face.
For combination with complete switch, see D13.

(29) Includes article-holding dam for vehicle use.

(30) For swinging crane-type support, see subclasses 363+.
Includes turnbuckle.

(31) Includes grommet.
Includes boat chock.
For boat cleat, see subclasses 382+.
For hook or eye, see subclasses 367+.
For fastener, e.g., rope clamp, see subclasses 383+.
For electric wire standoff, see subclasses 363 or 364.

(32) Includes Venetian blind tilter reel.

(34) For hook, see subclasses 367+.

(35) For insulator per se, see D13-129+

(36) For crane-type hook, see subclass 363.

(37) For fabric tieback, see D6-578.

(38) For pleater device per se, see subclasses 394+.

(39) Includes only plural-supporting hooks or eyes.

(40) Includes glide.

(41) For mounting bracket, see subclasses 363+ or 380+.

(42) For shelf, see D6-567+.

(43) Includes snap hook fastener.
For door or sash holder, see subclass 402.

(44) Includes flange or button for nail, tack, etc.
Includes thumbtack.

(45) Includes only fastener having provision for tightening or gripping.
Includes cord lock for Venetian blind.
For work holder-type clamp, see subclasses 72+.
Includes securing strap type.

(46) Includes sash weight.
Includes trunk fitting not provided for above.
Includes casement window operating mechanism.
For door opener or closer, see subclass 330.
For window pulley, see subclass 360.

(47) Includes holder for sash or door maintaining same in fixed position.
For lock, see subclasses 331+.

(48) For panic bar or static bar-type handle, see, respectively, subclasses 302 and 315+.

(49) Includes chain.
Includes roller shade locking or ratcheting mechanism.
Includes snow guard for roof.
Includes cleat for conveyor belt.

(50) Includes mop or broom holder.

(51) Includes plant stake.

(52) Includes plasterboard tape applying tool.

DIGESTS

DIG 1	Handles, pull-type
DIG 2	Handles, knob-type, circular, square and rectangular
DIG 3	Handles, knob-type, faucet and valve wheels
DIG 4	Handles, elongated-type, knife and fork
DIG 5	Handles, elongated-type, sword handles
DIG 6	Handles, elongated-type, golf and ski grips
DIG 7	Handles, elongated-type, tool handles
DIG 8	Handles, elongated-type, bicycle grips
DIG 9	Handles, asymmetrical-type, coffee, teapot and pitcher
DIG 10	Handles, asymmetrical-type, lever-type

CLASS D9 PACKAGES AND CONTAINERS FOR GOODS (1)

Excluded from this class are:
Atomizer; see D28-91.1.
Bagging tool; see D8-71.
Bail or handle per se; see D8-300+.
Bar soap container; see D28-76.
Bin, tray or similar permanent carrier; see D34-40+.
Brush combined with nail enamel; Container; see D4-116.
Bundle tie or strap; see D8-394+.
Calling card receiver; see D6-449.
Christmas stocking; see D11-126.
Clamp or locking device per se; see D8-382+.
Compact-type face powder container; see D28-91.
Compartmented permanent case or rack; see D34-40+.
Condiment cruet; see D7-598.
Cosmetic container for rouge, lipstick, powder compact, etc.; see D28-76+.
Dispensing container for photographic reproduction equipment; see D18-43.
Display card, sign, label, show card, etc.; see D20-10+.
Drinking cup; see D7-509+.
Fastener; see D8-349+.
Flower container or basket; see D11-143+.
Fluid storage tank; see D23-202+.
Food storage container such as lunch box, vacuum bottle, condiment server, etc.; see D7-590+ and 601+.
Fountain brush; see D4-114.
Glue applicator; see D19-70+.
Holy water bottle; see D99-25.
Kit or container for permanent storage of special article, e.g., chest for storing silver, jewelry, tool kit, etc.; see D3.
Label or tag; see D20-22+.
Liquid canteen; see D3-30.1.
Lubricating can; D23-211.
Medicine applicator; see D24-63.
Nursing bottle; see D24-47.
Office holder, tray or basket; see D19-86+.
Package ornament or bow; see D11-184.
Pail or can attachment, e.g., paint brush support, etc.; see D32-53+.
Paint can rim combined with brush rest; see D32-54.
Pencil box; see D19-85.
Permanent type shipping container; see D34-40+.
Reel; see D8-358+.
Sheet wrapping paper; see D5.
Shoeshine equipment container; see D3-30.5.
Spray gun; see D23-223+.
Spray nozzle; see D23-213+.
Stationery envelope; see D19-3+.
Storage, as opposed to packaging, container; see D3.
Tobacco product container and reuseable match container; see D27.
Washer for canning jar; see D8-399.
Watering can; see D23-212.

300 WITH GAS PROPELLANT MEANS OR PUMP
301 .Bellows type
302 COLLAPSIBLE TUBE
303 SEWING KIT, NEEDLE OR BUTTON (2)
304 MATCHBOOK TYPE
305 BAG OR WRAPPER TYPE (3)
306 .Tube or sleeve
307 SIMULATIVE IN FORM OR MOTIF
308 .Vehicle or component thereof
309 ..Ship or boat
310 .Animate
311 ..Humanoid
312 ...Christmas motif, e.g., Santa Claus, etc.
313 ...Plural figures
314 ...Organ, appendage, or element (4)
315 ....Heart
316 ...Freestanding figure
317 ..Bird
318 ..Quadruped
319 .Apparel
320 ..Hat or crown
321 .Horseshoe
322 .Building or component thereof
323 ..Furniture
324 .Timepiece
325 .Barrel
326 .Book
327 .Luggage
328 .Musical
329 .Edible article or tobacco product
330 .Light source
331 .Star
332 .Lettering
333 ..Single letter or numeral
334 .Bow
335 .Plant life
336 ..Flower
337 COMBINED WITH DIVERSE ARTICLE
338 .Applicator for contents (5)
339 SEQUENTIAL DISCHARGE OF CONTENTS
340 .Razor blade
341 COMPARTMENTED OR HAVING DISTINCT SUPPORT AREA FOR PLURAL ARTICLES (6)
342 .Razor and accessories
343 .Light string
344 .Engaging rim, top or neck only of contained article (7)
345 .Sheet or molded material conforming to shape of contained article, e.g., shrunk film, etc.
346 .Folded sheet material
347 .Of varying size or shape
348 .Staggered rows
349 UNIFORM CROSS SECTION AROUND POINT OR AXIS (8)
350 .Repeating adjacent ribs, grooves, or steps
351 ..With cylindrical body portion
352 .With closure
353 ..Closure conforms to and continues container configuration
354 ..Decanter type or with stopper
355 .Cylindrical body portion
356 OPPOSED PERIMETRICAL BEADS
357 .Front to rear opposition
358 ..Horizontally elongated container portion
359 .Shaker type dispensing container for powdered or granular material
360 ..Base merges vertically into different cross-sectional shape
361 ...Circular or oval base
362 ...Square or rectangular
363 ...Polygonal
364 ..Polygonal in plan
365 ..Circular or oval in plan
366 SHAKER TYPE DISPENSING CONTAINER FOR POWDERED OR GRANULAR MATERIAL
367 BOTTLE, JUG, JAR, OR CAN (9)
368 .Pull tab or tear strip opening
369 .Combined with holder, box, or package
370 .With bottom surface detail
371 ..Pointed or downwardly rounded, i.e., nonstandable

BOTTLE, JUG, JAR, OR CAN (9)
372 .Planar or concave side opposes convex side
373 .Mouth or spout not parallel to base
374 ..With handle or finger opening
375 .Mouth or spout offset from center line
376 ..With handle or finger opening
377 .Closure conforms to and continues container configuration
378 .With handle or finger opening
379 ..Bail type handle or ear
380 ..Plural
381 ..Attached at one end only
382 ..Centrally disposed finger opening
383 ..Applied to symmetrical container portion
384 .Decanter type or with stopper (10)
385 ..Substantially circular or oval body portion
386 ..Three or more repeats around body axis
387 .Quantitative measurement indicator
388 .Pedestal type
389 .Substantially diminishing size from base to top
390 .Substantially circular body portion
391 ..Specific area for product identification or label
392 ..Circular or oval surface detail
393 ..Coil or helical effect surface detail
394 ..Diamond, square, or triangular surface detail
395 ..Asymmetrical surface detail
396 ..Repeating adjacent ribs or grooves
397 ...Vertically and laterally oriented
398 ...Vertically oriented
399 ..Cylindrical
400 .Three or more repeats around body axis
401 ..Four repeats or square in plan
402 ..Three repeats or triangular in plan
403 .Bilateral symmetry
404 ..Body portion provided with grip retention overhang
405 ..Stepped down body portion
406 ..Circular or oval surface detail
407 ..Diamond, square, or triangular surface detail
408 ..Raised or depressed area for product identification or label
409 ..Asymmetrical surface detail
410 ..Repeating adjacent ribs or grooves
411 ...Laterally oriented
412 ..Arched surface detail
413 ..Planar wall
414 BOX OR PACKAGING CONTAINER
415 .With display or hanger panel (11)
416 .Pull tab or tear strip opening
417 .Specific flow director or spout
418 .External display aperture, window, or magnifier
419 .Ribbon, strip, or filament (12)
420 .Swinging closure (13)
421 ..Plural (14)
422 ..Rotating into enclosure
423 ..Planar top parallel to base
424 .Molded or stamped type, i.e., cast, vacuum formed, etc.
425 ..Flanged
426 ...Joined similar halves
427 ...Perforated bottom
428 ...Circular or oval
429 ....Plural ribs or grooves
430 .Polygonal in plan
431 ..Upwardly diverging or converging walls
432 ..Rectangular or square
433 .Folded or sheet material (15)
434 ELEMENT OR ATTACHMENT
435 .Closure, cover, or pouring attachment
436 ..Combined with diverse article or having additional use (16)
437 ...Cutter or punch
438 ..With tear strip or pop top (17)
439 ..Male type, i.e., stopper
440 ...With pouring or dispensing feature (18)
441 ...Simulative
442 ..Collapsible tube type
443 ..With distinct grip, handle, or clamping feature
444 ..Sheath type
445 ...Protector for closure, e.g., overcap type
446 ..Tethered type
447 ..With pouring or dispensing feature
448 ...Aerosol or pump type (19)
449 ...With moveable or separable closure element
450 ....Rotated to use position
451 ..Simulative (20)
452 ..Repeating or uniform pattern around body axis
453 ...Vertical straight ribs or grooves
454 ..Substantially circular (21)
455 .Stand or holder (22)
456 .Packing tray, separator, or insert
457 .Display or backing card (23)
499 MISCELLANEOUS

SEARCH NOTES FOR CLASS D9

(1) This class includes product containers whose acquisition is incidental to the purchase of the contents. Boxes, bottles, jars, etc., in this class, are of a disposable or destructible nature. However, returnable bottles, canning jars, or similar containers are included.
Containers purchased exclusively for storing or carrying purposes such as jewelry boxes, china, canister sets, etc., are excluded.
Secondary uses of the container are not specifically entertained for purposes of exclusion, e.g., bottle used as a bank, etc.
CLASSIFIED BY FULL-LINE DISCLOSURE.
Products which are contained in claimed packages not considered.

(2) For thread, tape, or ribbon containers, see subclass 419.

(3) Excludes articles which are protective only such as shroud, cover, etc.; see subclass 444.

(4) Nonskeletal head excluded; see subclasses 311+.

(5) For closure combined with applicator, see subclass 436.
For fountain brush, see D4-114.

(6) For reuseable tray, case, etc., see D3-67+.
For container holding plural articles loosely, i.e., tray or bin type, see subclasses 414+.
For package having plural closure, see subclass 421.
For egg type packing tray, see subclass 456.

(7) Includes top member for bottle or can 6-pack.

(8) Threaded opening or closure not

considered.
Must have constant profile. Vertical or diagonal surface ribs, grooves, etc., eliminate design from this subclass; see subclass 367.

(9) This subclass includes neck portion when balance is shown in broken lines.

(10) Must disclose stopper or be claimed as decanter.

(11) For card per se, see subclass 457.

(12) For adhesive or gummed tape dispenser, see D19-67+.

(13) Blank excluded; see subclass 433.

(14) For package having distinct provision for plural article, see subclass 341.

(15) Includes blank.

(16) Includes combination with measuring device.
For fountain brush, see D4-114.

(17) Includes tab per se.
For can end disclosing provision for pouring only, see subclass 447.

(18) For combination with measuring feature, see subclass 436.

(19) See subclass 300.

(20) Exclusive of pointer or arrow.

(21) For circular closure having repeat or uniform pattern around axis, see subclass 452.

(22) For combination of holder and container, see subclass 369.

(23) For advertising card, see D20-40.

CLASS D10 MEASURING, TESTING OR SIGNALLING INSTRUMENTS (1) (2)

Excluded from this class are:
Abacus; see D18-6+.
Clock combined with radio or television; see D14-131 and 170+.
Clock combined with sign or display equipment; see D20-20.
Control unit for recording, reproduction or communications equipment; see D14.
Drawing, drafting or writing implement; see D19-35+.
Flashlight or lantern; see D26.
Grounding bar; see D13-133.
Household measuring implement; see D7-50.
Laboratory measuring device; see D24-8+.
Lettering stencil; see D18-24+.
Medical measuring instrument, e.g., audiometer, blood pressure measuring instrument, etc.; see D24-17+.
Megaphone; see D14-204.
Musical chime, bell, horn, etc.; see D17-22.
Photographic light meter; see D16-238. Photographic rangefinder; see D16-220.
Photometer, light meter or photographic exposure meter; see D16-238.
Potentiometer for controlling electromotive force; see D13-21.
Pressure regulating valve or pressure valve combined with gauge; D23-235.
Pyrotechnic flare; see D22-112.
Reminder or program indicator; see D20-18.
Road or highway signs; see D20-17.
Signalling lamp for vehicle; see D26-29+.
Slide rule; see D18-9+.
Vehicle instrument panel; see D12-192.
Watchband bracelet, strap per se; see D11-3+.
Watch or clock combined with lighter; see D27-145.
Winding key for clock; see D8-347+.

1 CLOCK OR CLOCK CASE (3) (4)
2 .Combined (5)
3 ..With calendar
4 ..With weather instrument
5 ..With lamp or with provision therefor
6 .Simulative
7 ..Animate
8 ...Humanoid
9 ..Plant life
10 ..Map or globe
11 ..Building
12 ..Vehicle
13 ..Ship's wheel
14 .Plural face
15 .Changeable exhibitor, e.g., digital type
16 .Floor type, e.g., grandfather clock, etc.
17 .Case front having openwork filigree or surrounding radiating elements
18 .With closure panel
19 .With handle or bail
20 .Laterally asymmetrical in front elevation
21 .Case having geometric configuration in front elevation
22 ..Substantially circular or oval
23 ...With feet, distinct base or stand
24 ..Substantially rectangular or square
25 ...All sides flat and plain
26 ...With feet, distinct base or stand
27 ..Having flat and parallel sides
28 ...With curved top
29 ...With peaked or faceted top
30 WATCH, WRISTWATCH OR CASE (6)
31 .Combined
32 ..With wristband or strap
33 .Simulative
34 ..Animate
35 ...Humanoid
36 ..Plant life
37 .Pocket type
38 .Wrist type
39 ..With dial and/or hand
40 TIME-MEASURING INSTRUMENT OR CASING (7)
41 .Recording, e.g., time clock, etc.
42 .Parking meter
43 .Metronome
44 .Sandglass
45 .Sundial
46 MEASURING, REGULATING OR INDICATING INSTRUMENT, OR CASING (8) (9) (27)
46.1 .Scorer or indicator for game or sport
46.2 .Food preparation type (e.g., measuring cup, spoon, etc.)
46.3 ..Plural compartment or cell
47 .Radiation, e.g., Geiger counter
48 .Egg testing, e.g., candling instrument
49 .Regulator or control
50 ..Temperature regulator or thermostat
51 ...Combined with thermometer (10)
52 .Temperature, humidity, atmospheric condition (11)
53 ..Plural or combined
54 ..Simulative
55 ..Barometer
56 ..Moisture
57 ..Thermometer
58 ...Expanding fluid type
59 ...Weather vane
60 ..Element or attachment (12)
61 .Geometric (13)
62 ..Combined
63 ...Drafting machine
64 ..Template or comparator gauge (14)
65 ..Angle or direction (15)
66 ...Transit or theodolite
67 ...Aircraft instrument
68 ...Compass (16)
69 ...Spirit level
70 ..Linear or distance (17)
71 ...Rule, tape or scale (18)
72 ....With casing, i.e., retractable type
73 ...Micrometer, caliper or divider type
74 ..Element or attachment (12)
75 .Electrical property
76 ..Oscilloscope or oscillograph
77 ..Battery, vacuum tube, transistor or spark plug tester (19)
78 ..Provided with handle, or hand-held
79 ...Clamp-around type
80 ..Element or attachment (12)
81 .Chemical
82 .Balancer
83 .Weight, force or density
84 ..Specific gravity (20)
85 ..Pressure gauge
86 ...Tire inflation type
87 ..Scale
88 ...Combined
89 ...Vertical spring type
90 ...Beam or balance type
91 ...Provided with load platform
92 ....Standing user type
93 .....Readout at eye or waist level
94 ..Element or attachment (12)
95 ...Beam or balance
96 .Volume, flow or rate
97 ..Counter
98 ...Speedometer or tachometer

CLASS D10 MEASURING, TESTING OR SIGNALLING INSTRUMENTS (1) (2)

	MEASURING, REGULATING OR INDICATING INSTRUMENT, OR CASING (8) (9) (27)
	.Volume, flow or rate
99	..Public utility meter, i.e., gas, water, etc.
100	...Electric
101	..Liquid quantity level
102	.Dial gauge or meter
103	.Element or attachment (12)
104	SECURITY OR SIGNAL INSTRUMENT, OR CASING (21)
105	.Lightning conductor or arrestor
106	.Alarm or control therefor (22)
107	.Buoy
108	.Elevator signal or call unit
109	.Visual (23)
110	..Fender guide for vehicle
111	..Lamp or Reflector (28)
112	...Ignition timing light
113	...Road surface marker
114	...Flashing, warning or directing type
115	....Multiple sequential lamps, e.g., "traffic light"
116	.Aural (24)
117	..Curb feeler for vehicle
118	..Annunciator or door chime
119	..Air-operated (25)
120	...Siren or horn
121	.Element or attachment (12)
122	DIAL, INDICATOR HAND, OR OTHER ELEMENT OR ATTACHMENT
123	.Dial or face plate
124	..Combined (29)
125	..Substantially rectangular or square
126	..Substantially circular or oval
127	.Indicator hand
128	.Watch or clock element, or attachment (26)
129	..Movement or movement frame
130	...Pendulum
131	..Bow, pendant, crown or stem
132	..Crystal, cover or protector

SEARCH NOTES FOR CLASS D10

(1) Includes, in indented subclasses, elements or attachments which are used only with particular instruments and which cannot be placed in another class. When elements are common to several instruments in different subclasses, they are in subclasses 122+.

(2) All patents are classified by full-line disclosure.

(3) Includes front panel.

(4) Excludes timer, sandglass and sundial. See, respectively, subclasses 40, 44 and 45.

(5) Excludes "time clock". See subclass 41.

(6) Includes stopwatch.

(7) Includes timer.

(8) Includes depth-measuring instrument, e.g., sonar.

(9) Includes chart recorder.

(10) Excludes thermometer per se. See subclasses 57 and 58.

(11) Excludes rain gauge. See subclass 101.

(12) Excludes dial or indicator hand. See, respectively, subclasses 122+ and 127.

Includes Pitot tube.

(13) Includes plumb bob.

(14) Excludes eraser shield and lettering stencil. See Class D19, subclasses 37 and 40, respectively.

(15) Includes T-square.

(16) Includes element.

(17) Includes altimeter and odometer.

(18) Includes surveying rod or target.

(19) Excludes hydrometer. See subclass 84.

(20) Includes element.

(21) For radar, see subclass 46.

(22) Excludes bell, siren, etc. See subclasses 116+.

(23) Excludes pyrotechnic flare. See D22-112.

(24) Includes bell.

(25) Includes whistle.

(26) Includes holder or stand.

(27) Includes radar.

(28) Subject matter in this and indented subclasses is distinguished frm the subject matter in Class D26 in being exclusively for signalling purposes.

For illumination lamps, or those combining both illumination and signalling functions, see Class D26.

For lantern or flashlight, see D26.

(29) Includes combination with hands.

CLASS D11 JEWELRY, SYMBOLIC INSIGNIA AND ORNAMENTS

Excluded from this class are:
Candle holder; see D26-9+.
Chain, general purpose; see D8-499.
China, glassware, serving dish, etc.; see D7.
Christmas card holder, rack, etc.; see D6-449+.
Lamp; see D26-2+.
Light reflector; see D26-128+.
Light string; see D26-25.
Clasp, clamp or clip, general purpose; see D8-382+.
Crucifix or cross; see D99-27.
Decal or transfer; see D20-11.
Edging or curbing for flower bed, etc; see D25-38+ and 73+.
Electric Christmas candle; see D26-96.
Espalier or trellis; see D25-71.
Frame for wall decoration; D6-300+.
Grave monument; see D99-17+.
Incense burner; see D23-78.
Key ring, fob, etc.; see D3-61+.
Name tag or identification badge; see D19-13+.
Religious appliance, i.e., article employed in the celebration of religious ceremony such as baptismal font, tabernacle, monstrance, etc.; see D99-25+.
Rosary; see D99-26.
Shoulder patch, insignia, etc.; see D5-63+.
Stage set; see D25-58.
Support for flower pot or combination thereof; see D6-403+.
Toilet articles; see D28.
Tree brace or snake-type support; see D8-1.
Urn for ashes; see D99-5.
Wall mounted flower support; see D6-556+

200 FASTENER, BUCKLE OR RESTRAINT FOR APPAREL OR PERSONAL BELONGINGS NOT ELSEWHERE SPECIFIED (25)
201 .Combined with diverse article
202 .Necktie or scarf restraint (26)
203 ..With monogram or provision therefor
204 ..Simulative
205 ...Animate
206 .Safety pin or clasp (i.e., with detent for securing resilient end)
207 .Hatpin type (27)
208 .Hook and eye type
209 ..Wire
210 ..Formed substantially from sheet material having uniform thickness
211 ..Simulative
212 .Slot and sliding stud type (e.g., garter belt fastener, etc.) (28)
213 .Opposed mirror image restraint (e.g., collar pin, opposed mirror image cuff button, etc.)
214 ..Resilient engagement
215 .Resilient or spring clamp
216 .Pivoted or pushbutton release
217 ..Simulative
218 .Slip clutch or slide type buckle (29)
219 ..Simulative
220 .Snap engagement
221 .Zipper type
222 .Button or head type (e.g., cuff link, tie tack, etc.)
223 ..Simulative (30)
224 ...Animate
225 ...Plant life
226 ..Opposed cooperating components (i.e., fastened material is sandwiched by opposed fastener components; e.g., cuff link, etc.) (31)
227 ..Three or more repeats, or uniform configuration about axis (32)
228 ..Element or attachment
229 .With monogram or provision therefor
230 ..Prong engagement
231 .Penetrating prong (e.g., belt buckle type, etc.)
232 ..Simulative
233 ...Animate (33)
234 ..Provision for moveable prong
235 ...Plural
236 ...Frame perimeter having top to bottom and side to side symmetry
237 ...Frame perimeter having bilateral symmetry
238 .Simulative (34)
239 ..Animate
240 ...Humanoid
241 ..Plant life
1 JEWELRY (1)
2 .Combined
3 .Encircling, i.e., necklace, bracelet, etc. (2)
4 ..Bangle or armlet type
5 ...Overlapping ends
6 ..Major design element disposed on continuous strand
7 ...Pendant having singular suspension point (3)
8 ....Plural pendant
9 ...Asymmetrical along longitudinal axis
10 ....And laterally
11 ..Strung
12 ..Interlocked (4)
13 ...Wire type, i.e., chain (5)
14 ...Simulative
15 ...Arcuate surface pattern in plan (6)
16 ....With gem or stone
17 ....Circular or oval
18 ....Sinuous
19 ..Longitudinally expanding type (7)
20 ...Continuous filament or coil
21 ...Arcuate pattern in plan
22 ....Circular or oval
23 ....Sinuous
24 ...Triangular pattern in plan
25 ...Quadrilateral pattern in plan
26 ..Finger ring or mounting (8)
27 ...Open or having disconnected ends
28 ...Having axial shift
29 ...Axially asymmetrical
30 ....Simulative
31 .....Animate
32 ......Humanoid
33 .....Plant life
34 ...Plural gem mount
35 ...Solitaire (9)
36 ....Crown type, i.e., pronged
37 ...Circumferential pattern
38 ....Repeating
39 ....Rib or groove
40 .Brooch or earring (10)
41 ..Separable elements
42 ..Resilient, i.e., earring per se forms clamp
43 ..Pendant type
44 ...Simulative
45 ...Asymmetrical
46 ...Monogram holder (11)
47 ..Stickpin (35)
48 ..Simulative
49 ...Animate
50 ....Aquatic
51 ....Canine

JEWELRY (1)
.Brooch or earring (10)
..Simulative
...Animate
52 ....Feline
53 ....Humanoid
54 .....Organ or appendage
55 ......Head
56 ......Heart
57 ....Winged
58 .....Bird
59 ...Crown
60 ...Key
61 ...Letter or numeral
62 ...Map or globe
63 ...Plant life (12)
64 ....Tree
65 ....With container
66 ....With ribbon, tie or bow
67 ....Singular flower, bud or fruit
68 ....Singular leaf
69 ....Asymmetrical
70 ...Star
71 ...Torch or lamp
72 ...Vehicle or component thereof
73 ...Weapon, e.g., sword, arrow, firearm, etc.
74 ...Bow
75 ..Symmetrical
76 ...Circumferentially or radially arranged identical elements
77 ..Knotted, intertwined or tied (13)
78 ..Sinuous
78.1 .Money clip
79 .Pendant, fob or charm (14)
80 ..Locket
81 ..Simulative
82 ...Animate
83 ....Humanoid
84 ...Plant life
85 ..Laterally asymmetrical
86 .Element or attachment
87 ..Fastener
88 ...Clamp or nut for earring
89 ..Jewel, gem or signet
90 ...Faceted
91 ..Setting
92 ...Crown, i.e., pronged
93 ..Link
94 ...End type, i.e., for watch bracelet
95 SYMBOLIC MEDAL, BADGE OR INSIGNIA (15)
96 .Cross, or having radiating elements
97 .Suspended
98 ..By ribbon
99 .Simulative
100 ..Animate
101 ...Humanoid
102 ....Organ or appendage
103 .....Heart
104 .....Hand
105 ....Combined
106 .....With plant life
107 ...Bird
108 ..Star and/or stripe
109 ...U. S. flag
110 ..Map or globe
111 ..Building
112 ..Vehicle
113 ...Aircraft
114 ..Torch or flame
115 ..Plant life
116 ..Letter or numeral
117 ARTIFICIAL PLANT LIFE AND HOLIDAY SEASON DECORATIONS
118 .Tree
119 .Garland
120 ..Wreath
121 .Seasonal, or religious ornament (16)
122 ..Table shrine or altar
123 ...Creche
124 ..Treetop type
125 ..Simulative (17)
126 ...Stocking
127 ...Animate
128 ....Humanoid
129 .....Saint Nicholas
130 .Element or attachment (18)
130.1 ..Christmas tree stand
131 SCULPTURE, TABLE OR WALL ORNAMENT (19)
131.1 .Incense burner
132 .Plaque, picture or wall hanging (20)
133 ..Simulative
134 ...Animate
135 ....Combined, i.e., animal and human, etc.
136 ....Humanoid
137 ....Winged
138 ...Vehicle
139 ...Plant life
140 ..Symmetrical
141 .Mobile
142 .Folded paper or cardboard
143 .Flower or plant holder (21)
144 ..Combined with diverse article
145 ..Terrarium (22)
146 ..Stem receiver or having elongated neck
147 ...Plural, e.g., frog, etc.
148 ..With bail, handle or suspension means
149 ..Simulative
150 ...Humanoid
151 ...Plant life
152 ..Substantially circular or oval in plan
153 ...Vertically curvilinear wall
154 ....Concave or sinuous
155 ..Substantially rectangular or square in plan
156 ...And horizontally elongated in front elevation, e.g., window box, etc.
157 .Simulative
158 ..Animate
159 ...Equestrian
160 ...Humanoid
161 ....Plural
162 ...Winged
163 ..Vehicle
164 .Element or attachment
165 FLAG OR PENNANT
166 .Combined with support
167 .Combined national, state or municipal colors
168 .Characterized by peripheral shape or ornamentation, e.g., burgee, etc.
169 ..Fringed
170 ..Peripheral pattern or band
171 .Identical segments or quadrants
172 .Simulative
173 ..Animate
174 ...Humanoid
175 ..Cross
176 ..Map or globe
177 ..Wreath
178 ..Star
179 ...Plural
180 ....And stripes
181 .Element or attachment (23)
182 ..Flagpole holder
183 ...Plural
184 MISCELLANEOUS (24)

SEARCH NOTES FOR CLASS D11

(1) Include vinaigrette, or apparel-attached holder for flower, fragrance, etc.

(2) Includes watch strap.
For strap in combination with watch, see D10-32.

(3) For charm or pendant per se, see subclasses 79+.

(4) For individual link, fastener, etc., see subclasses 86+.

(5) For watch fob or chain, see subclasses 79+.

(6) Classified by major design elements; small connector elements are disregarded.

(7) For individual link, see subclasses 86+.

(8) For setting, see subclasses 91+.

(9) For stone or gem, see subclasses 89+.

(10) For badge or medal, see subclasses 95+.

(11) For brooch containing claimed letter or numeral, see subclass 61.

(12) Patents are placed in this subclass and indented subclasses only if they disclose realistic representations of, and are positively identifiable as, plant life forms.
For boutonniere, corsage, etc., see subclasses 117+.

(13) Patent is placed in this subclass only if an element is shown to be passing entirely under, or weaving through, itself or another element.

(14) For crucifix, see D99-27.
For medal, see subclasses 95+.

(15) Includes automobile badge, insignia, etc; includes coin or token; includes military or fraternal order insignia.
For emblem per se, see subclass 99.

(16) For light string, light reflector or candle holder, see D26, subclasses 25, 128+, and 9+, respectively.
For religious appliance, see D99-25.
Includes tinsel.

(17) For statue, see subclasses 143+.

(18) Includes skirt for Christmas tree base.

(19) For vase or flower holder, see subclasses 143+; includes party favor; includes trophy.

(20) For picture frame, see D6-300+.

(21) For wall-mounted plant support, see D6-553+; includes vase; includes combination with drain saucer.

(22) For aquarium, see D30-6+.

(23) Includes flagpole or banner rod.

(24) Includes inedible cake or pastry decoration;
Includes emblem;
Includes package ornament or bow.

(25) Subject matter in this subclass is distinguished from subject matter in D2-624+ in being fasteners for apparel whereas the latter includes only articles which attach apparel to the body. For example, belts, suspenders and garters are classified in D2.
Classified by full line diclosure

(26) Includes hankerchief ring.
For tie pin, see subclass 222.

(27) For pin which is intended for adornment only, and not for fastening, i.e., stickpin, see subclass 47.

(28) For stud per se, see subclass 222

(29) For buckle with prong engagement, see subclass 231.

(30) Includes letter or numeral.

(31) For sets having mirror image symmetry, see subclass 213.

(32) Exclusive of mounting hole.

(33) Includes humanoid.

(34) Includes letter numeral.

(35) For fastening pin, e.g., hatpin type, see subclass 207.

Excluded from this class are:
Boat hardware, e.g., cleat, chock, etc.; see, respectively, D8-382 and D8-356.
Buoy; see D10-107.
Engines; see D15-1+.
Flight trainer or simulator; see D19-63.
Handgrip for handlebar; see D8-303.
Ignition component; see D13-126+.
Lift or ramp for vehicle; see D34-28+.
Material handling article; see D34.
Parts, components, or accessories of vehicles which are provided for elsewhere, e.g., automobile headlights; see D26-28+.
For electric motors for vehicles; see D13-112+.
Portable or seat-mounted storage compartment for records, tapes, etc.; see D3-35.
Pulley or pulley block; see D8-360.
Registration plate; see D20-13.
Ski, or non-motorized water sports accessory such as surfboard, aquaplane, etc.; see D21-224+ and 236+.
Toy or scale models of vehicles; see D21.
Tractor, bulldozer, or earthworking machinery; see D15-10+.
Traffic light viewing prism; see D16-137.
Trash compactor container; see D34-3
Vehicle horn; see D10-120.
Vehicle seats; see D6-356.

1 SPECIAL PURPOSE VEHICLE
2 .Combined, e.g., land-sea-air-type vehicle
3 ..Amphibious
4 ..Land and air
5 .Air cushion
6 .Sleigh or sled
7 ..Self-propelled
8 ..Standing occupant only
9 ..With occupant support elevated from runner
10 ...Straddle or flat riding surface type
11 ...Toboggan or skimming type
12 .Armored
13 .Firefighting
14 .Service vehicle (2)
15 ..Dumping or trash handling
16 .Golf car (3)
16.1 .Drone, guided missile, or rocket
17 VEHICLE DRAWN BY ANIMAL (4)
18 .Body with cover
19 .Cart or sulky
20 .Element or attachment
36 RAIL VEHICLE (INCLUDES TRAIN)
37 .Monorail
38 .Locomotive (includes combination with tender)
39 .Car
40 ..Passenger (includes self-propelled)
41 ..Freight
42 .Element or attachment
43 ..Body element
44 ...Baggage support
45 ..Undercarriage
46 ...Truck
47 ...Bolster or bearing
48 ...Draft, coupler, or uncoupler element
49 ..Railway (includes tie)
50 ...Track
51 ...Tie plate or clamp
52 TELPHER CARRIER OR CHAIR LIFT
300 WATERCRAFT OR HULL (8)
301 .Simulative
302 .Canoe or kayak
303 .Sailboat (36)
304 ..Plural hulls or outrigger, e.g., catamaran
305 .Air propeller driven
306 .Paddle wheel or crank driven
307 .Straddle or motorized surfboard type
308 .Submersible
309 .Hydrofoil
310 .Opposed hull skids forming longitudinal channel
311 ..Laterally stepped
312 ..Channel divided by keel or keel rib
313 .Laterally stepped bottom
314 .Longitudinal planing steps or strakes on bottom
315 .With cabin (37)
316 .Raft, float, or platform
317 .Element or attachment
318 ..Deck or cabin unit
319 AIRCRAFT, SPACECRAFT, OR FUSELAGE (38)
320 .Space satellite or habitat (39)
321 .Flexible or uniform-thickness material forming lift surface, e.g., parachute, paraglider, kite type, etc.
322 .Body supported
323 .Lighter-than-air, i.e., lift provided by hot air or gas
324 .Amphibious
325 .Disc or saucer shaped
326 .Vertical takeoff type
327 ..Rotary wing, i.e., lift during horizontal flight maintained by moving airfoil
328 ...Plural horizontal rotors
329 ....Tandem
330 ..Ducted or shrouded fan
331 .Canard configuration or with plural distinct wings
332 ..Horizontal stabilizer ahead of wing
333 .Horizontal stabilizer conforms to and continues wing or fuselage configuration, e.g., lifting body type
334 ..Plural
335 .Plural fuselages or tail booms
336 .Plural distinct crew or armament nacelles
337 .T-tail empenhage, i.e., stabilizer mounted at top of rudder or vertical fin
338 .Plural distinct rudders (40)
339 .Pusher propeller
340 .Pylon-mounted engine
341 .Wing-mounted engine
342 .Plural distinct engine air intakes on fuselage flanks or wing roots
343 .Jet propelled
344 .Propeller driven
345 .Element or attachment
82 MOTORCAR, BUS OR TRUCK (9)
83 .Simulative
84 .Bus
85 .Three-wheeled
86 .Motorcar or body
87 ..Dune buggy type
88 ..Two or more fully exposed wheels or detached fenders, e.g., racing-type vehicle
89 ..Stepped top
90 ..Contiguous hood and roof
91 ..Distinct hood or cowl
92 ...With distinct trunk or notched back
93 .Motor truck or body (10)
94 ..Vehicle carrier

MOTORCAR, BUS OR TRUCK (9)
.Motor truck or body (10)
95 ..Tank-type carrier, e.g., oil, gasoline truck, etc.
96 ..Distinct operator or cargo compartment
97 ...Articulated
98 ...Cargo compartment open at top
99 ..Integral cab and cargo compartment
100 ...Camping, e.g., motor home, etc. (11)
101 TRAILER OR TRAILER BODY (12)
102 .Fully enclosed
103 ..House or camping type (13)
104 ...With expansible portion
105 .Partially enclosed
106 .Element or attachment (14)
107 CYCLE OR MOTORCYCLE (15)
108 .Simulative
109 .Tandem
110 .Motorcycle or frame
111 .Bicycle or frame
112 .Tricycle or frame
113 ..With distinct step plate or depression
114 .Element or attachment (16)
115 ..Cycle holder or rack (17)
116 ..Sidecar
117 ..Frame part
118 ...Fork or stem (18)
119 ...Saddle post or support (19)
120 ...Stand (20)
121 ...Step plate for tricycle
122 ..Running gear (21)
123 ...Crank or sprocket
124 ...Derailleur or gear unit (22)
125 ...Pedal or toe clip
126 ..Enclosure or guard (23)
127 ...For chain, sprocket or derailleur, etc.
128 PERAMBULATOR, INVALID CHAIR, OR STRETCHER
129 .Stroller type
130 .Walker
131 .Wheelchair
132 .Wheeled stretcher
133 .Element or attachment
134 TIRE
135 .Combined with wheel or wheel trim
136 .With tread pattern (24)
137 ..Characterized by symbol, simulation, letter or numeral (25)
138 ..Distinct triangular element (26)
139 ..Distinct circular or oval element
140 ..Distinct square or rectangular element
141 ..Uninterrupted circumferential discrete groove and rib (34)
142 ...Zigzag type
143 ....Opposite walls of groove laterally out of alignment or dissimilar
144 ....Sinuous curve type
145 ....Undirectional and having parallel sides
146 ..Circumferential, diagonal and lateral straight groove or rib sides
147 ..Circumferential and diagonal straight groove or rib sides
148 ..Circumferential and lateral straight groove or rib sides
149 ..Diagonal and lateral straight groove or rib sides
150 ..Lateral straight groove or rib sides
151 ..Diagonal straight groove or rib sides
152 .With sidewall or shoulder feature
153 .Element or attachment
154 ..Anti-skid
155 OTHER PARTS, EQUIPMENT AND ACCESSORIES FOR VEHICLES NOT ELSEWHERE SPECIFIED (35)
156 .Top, auxiliary compartment, carrier, or load cover (27)
157 ..Article carrier
158 ...Cycle type
159 .Chassis element (28)
160 ..Axle element
161 ..Bearing or fifth wheel
162 ..Draw element, e.g., trailer hitch
163 .Radiator, grille, or bumper (29)
164 ..Combined with hood or fender
165 ..Vertically elongated axis
166 ...Radiator or casing therefor
167 ..Bumper or guard
168 ...Boat fender
169 ...Vehicle-attached front or rear type
170 ....Combined with grille
171 ....Grille or radiator guard
172 ....Element or attachment
173 .Hood for motor vehicle
174 .Control element
175 ..Steering wheel
176 ...Circular
177 ...Element or attachment
178 ..Handlebar
179 ..Brake or gear shift lever or unit
180 ..Brake element
181 .Deflector or fender
182 ..Windshield
183 ..Window or curtain
184 ..Mudguard
185 ...Splash shield or flap
186 ...Cycle type
187 .Rear view mirror (30)
188 ..Combined with disparate article
189 ..Circular head
190 .Exterior or interior trim
191 ..Visor or attachment therefor
192 ..Instrument panel or element thereof
193 ..License plate holder, frame, or support
194 ..Tail pipe extension or muffler
195 ..Vehicle interior or interior panel
196 ..Exterior panel or door
197 ..Radiator cap, gas cap and/or hood ornament
198 ...With temperature or water indicator
199 ...Simulative
200 ....Humanoid
201 ...Opposed radial arms
202 .Tire cover or support
203 .Mat, step, or step plate (31)
204 .Wheel or wheel cover (includes hub or rim)
205 ..Wire-type spoke
206 ..With air diverter, e.g., vane or scoop, etc.
207 ..Hub
208 ..Rim
209 ..Aperture or simulated aperture (32)
210 ...Characterized by circular motif
211 ...Aperture has two straight sides
212 ..Concentric circles
213 ..Element or attachment
214 .Propeller
215 .Oar, paddle or anchor (33)
216 .Grille or radiator cover
217 .Wheel chock or stop

SEARCH NOTES FOR CLASS D12

(1) Includes parts, components, and accessories which exist only in connection with a vehicle and cannot be placed in another class; these parts, components, etc., are to be placed as an indented subclass or in the subclass of the vehicle on which they are used, or

in subclasses 155+ if they are common to several vehicles in different subclasses.

(2) Includes aircraft maintenance vehicle, tow truck, mobile service station, etc.

(3) For golf bag cart, see D34-15.

(4) Sleigh excluded; see subclasses 6+.

(5) For powered passenger carrying golf car, see subclass 16.

(6) For tilting carts, see subclasses 32+.

(7) Includes ramp for elevating vehicles, pallets, stairs for boarding aircraft and forklift trucks.

(8) Classified by full line disclosure.

(9) For special purpose type, see this class, subclasses 1+.

(10) Elements included with indented subclasses 94-100 below.

(11) For camping trailer per se, see subclasses 103+.
For pickup truck-mounted camper, see subclass 156.

(12) For truck semitrailer, see subclass 97.
For snow vehicle trailer, see subclasses 6+.

(13) For truck-mounted camper, search subclass 156.
For motor home, see subclass 100.

(14) For trailer hitch, see subclass 162.

(15) Includes only pedal, lever, or engine-driven vehicle.

(16) Includes trim.
Excluded are wheels, tires and combinations thereof; see, respectively, subclasses 204+, 134+, and 135.
For basket or saddle bag, see subclass 158.

(17) For cycle-mounted stand, see subclass 120.

(18) Includes element.
For handlebar, see subclass 178.

(19) For saddle, see Class D6-354.

(20) Includes cycle-mounted kickstand.

(21) Includes training or auxiliary wheel.

(22) For control lever, see subclass 179.

(23) Includes bicycle frame tank.
For fender, see subclass 186.

(24) Tread includes surface contacting only. Shoulder or sidewall surfaces not considered. Classified by major design element(s) in tread. Minor elements such as slits or sipes are disregarded.

(25) Excluding diamond shape.

(26) Includes only isolated form, i.e., form not connected to others in tread pattern.

(27) Includes truck-mounted camper unit.
For motor home, see subclass 100.
For camping, see subclasses 103+.

(28) Includes shock absorber or spring.

(29) Includes radiator casings and assembly combinations.

(30) Includes mirror head or support bracket per se.

(31) Includes running board.

(32) Excluding bolt, valve, or hub per se.

(33) For boat hardware, see D8-356 and 382.

(34) Only tires with tread patterns having both a discrete groove and a discrete rib are included in this subclass and indented subclasses.

(35) Includes vehicle-attached fuel or oil tank.

(36) Includes ice boat type.

(37) For cabin per se, see subclass 318.

(38) Classified by full line disclosure. Includes glider.

(39) Includes craft intended exclusively for use in space. For craft with aerial flight capability, see following subclasses.

(40) Includes V-Tail type.

CLASS D13 EQUIPMENT FOR PRODUCTION, DISTRIBUTION OR TRANSFORMATION OF ENERGY (1)

Excluded from this class are:
Battery tester; see D10-77.
Blasting equipment; see D22-112.
Cable support; see D8-354+.
Control panel for toy vehicle; see D21-142.
Cover plate for receptacle or junction box; see D8-350+.
Electric heating element; see D23-417.
Electric welding apparatus; see D15-144.
Electrically driven apparatus, such as electric watches; see D10-30+.
Apparatus for the measurement of electric current; see D10-75+.
Electrician's tool; see D8.
Escutcheon plate, rose, outlet cover for wall switch or outlet; see D8-350+.
Heating or cooking equipment; see D23 and D7.
Housing for measuring or testing instruments; see D10-46+.
Impedance matching transformer; see D14-230.
Internal combustion engine or steam engine; see D15-1+.
Joystick or control for video game; see D21-48.
Lamp guard or protector; see D26-119.
Light emitting gas discharge matrix display unit; see D18-26.
Lightning arrestor; see D10-105.
Machines and appliances; see D15, D7, D8.
Measuring or testing instrument; see D10.
Motor unit for garage door opener; see D15-199.
Post combined with lamp or light; see D26-68+.
Post or transmission tower; see D25-77+.
Radar; see D10-70.
Remote control unit for audio or video component; see D14-218.
Spreader for ignition wire manifold; see D8-231.
Standoff support for line insulator; see D8-364.
Streetcar or electric railway vehicle; see D12-36+.
Supporting or mounting bracket for conduit; see D8-354+.
Switch knob; see D8-307+.
Telephone connector; see D14-256.
Telephone switching component; see D14-241.
Timer; see D10-40.
Toy control transformer; see D21-141.1.
Video game console; see D21-13.

100 SOLID FUEL (2)
101 ENERGY CONVERSION OR TRANSFORMATION (3)
102 .Solar unit or component thereof
103 .Battery or casing therefor (4)
104 ..Plural cell automotive type
105 ...Simulative (5)
106 ...Pass-through hand or finger grip
107 .Battery charger
108 ..Cordless appliance type
109 ..With provision for mobility (e.g., wheeled, etc.)
110 .Transformer, rectifier or casing therefor (6)
111 ..Electric fence energizer
112 .Generator, motor or casing therefor
113 ..Engine starter type
114 ..Dynamoelectric machine (e.g., generator, etc.)
115 ...Wind or hand powered
116 ...With handle, bar or loop for lifting
117 .Inductor (e.g., coil, etc.)
118 .Element or attachment
119 ..Battery
120 ...Connector (e.g., terminal, clamp, etc.) (7)
121 ...Electrode (i.e., grid or plate type)
122 ..Generator, motor or casing therefor
123 DISTRIBUTION, MODIFICATION OR CONTROL (8)
124 .Voltage regulator
125 .Condenser, resistor or potentiometer (9)
126 .Vehicle ignition component (10)
127 ..Spark or glow plug
128 .Railway component
129 .Insulator (11)
130 ..Three or more repeats, or uniform configuration, about axis (12)
131 ..Symmetrical on two axes (13)
132 ..Bilaterally symmetrical (13)
133 .Connector, conductor or housing therefor (14)
134 ..Lamp socket
135 ...Converter (e.g., incandescent to fluorescent, etc.)
136 ...Provision for plural bulb
137 ..Domestic electric service plug or receptacle (i.e., 120-v or 220-v type)
138 ...Plug
139 ....Combined with receptacle
140 .....Extension type (e.g., cord, cord with reel, etc.)
141 ....Grounded or three prong type
142 ...Combined with circuit breaker or switch
143 ...Grounded or three prong type
144 ..12-volt cigarette lighter type
145 ..Heater or small appliance type
146 ..Three or more contacts (e.g., ports, terminals, etc.)
147 ...Linear array of identical repeating ports or contacts (i.e., in-line array)
148 ..Ring or spade lug
149 ..Compressive engagement (e.g., clamped, crimped, etc.) (15)
150 ...Wire nut type
151 ..Threaded engagement
152 ..Junction or outlet box (16)
153 ..Cable, wire or cladding therefor (17)
154 ..Element or attachment
155 ...Conduit, duct or channel
156 ...Cap, cover or boot
157 ...Cable marker
158 .Switch or casing therefor (18)
159 ..Relay
160 ..Circuit breaker, current suppressor or fuse, or casing therefor (19)
161 ...Fuse (20)
162 ..Control panel, console or module
163 ...Console or floor type
164 ...Linear array of three or more identical control or display elements
165 ..Photocell operated (21)
166 ..Solenoid operated
167 ..Foot operated
168 ..Hand held or remote type
169 ..Toggle, lever or rocker operated
170 ..Slide operated
171 ..Button operated
172 ..Reed type

DISTRIBUTION, MODIFICATION OR CONTROL (8)
.Switch or casing therefor (18)
173 ..Element or attachment
174 ...Actuator (e.g., button, slide, etc.)
175 ....Blade or pivoting contact
176 ...Reed switch
177 ...Face panel or cover (22)
178 ...Circuit breaker, current suppressor or fuse
179 .Heat sink
180 .Electron or vacuum tube (23)
181 ..Cathode ray
182 .Semiconductor, transistor or integrated circuit (24)
183 MAGNET (25)
184 CASING OR ENCLOSURE NOT ELSEWHERE SPECIFIED
199 MISCELLANEOUS (26)

SEARCH NOTES FOR CLASS D13
(1) Classified by both full lines and broken lines in claimed disclosure.
(2) Includes ceramic briquette substitu
(3) Includes maser or laser.
Includes transducer.
(4) Excludes holder such as box, mount, etc.; see subclass 119.
(5) Includes letter or numeral.
(6) Includes "power supply".
For diode or vacuum tube, see subclass 180.
(7) Includes jumper cable set.
(8) For control panel or console, i.e., with specific manual control element such as knob, etc., see subclass 162.
Includes programmable controller.
(9) Includes rheostat.
(10) For coil, see subclass 117.
For wire, see subclass 153.
(11) For insulated wire, or wire cladding, see subclass 153.
(12) Helical attachment provision not considered.
(13) Includes mirror image symmetry.
Helical attachment provision not considered.
(14) Includes grounding bar.
For battery connector, see subclass 120.
(15) For biased engagement, see earlier subclasses.
(16) For control panel or switch panel see, respectively, subclasses 162+ and 158+.
(17) For cable marker, see subclass 157;
For duct or channel, see subclass 155.
(18) For general purpose control panel or module, see subclass 162.
For rheostat, see subclass 125.
(19) If control element such as switch, knob or lever is not disclosed, article is considered to be an element and is therefore classified in subclasses 173+.
For combination with receptacle, see subclass 142.
(20) Includes Bolder or block.
(21) Includes photocell unit, per se.
(22) If control element such as switch, knob, lever, etc., is disclosed, article is considered to be a switch per se and is therefore classified above.
For escutcheon, see D8-350+.
(23) Includes diode.
Includes magnetron.
(24) Includes circuit board.
(25) Includes magnetizer or demagnetizer
(26) Includes electrode not elsewhere specified.

CLASS D14 RECORDING, COMMUNICATION OR INFORMATION RETRIEVAL EQUIPMENT

Excluded from this class are:
Adding machine; see D18-1+.
Bank Transaction terminal; see D99-28.
Calculator; see D18-6+.
Camera lens; see D16-134.
Cart for television; see D34-12+.
Cash register or point-of-sale computer with cash drawer; see D18-4.
Cinematic apparatus; see D16-205+.
Display character unit; see D18-24+.
Electrical connector; see D13-133+.
Electron tube; see D13-180.
Fan; see D23-370+.
Graphic recorder; see D10-61+.
Hearing aid; see D24-35.
Incandescent lamp; see D26-2+.
Knob per se, or combined with escutcheon for radio, television, etc.; see D8-307+.
Laser or maser; see D13-101.
Lightning arrester; see D10-105.
Measuring or testing instrument; see D10-46+.
Meter; see D10-46+.
Photographic or cinematic apparatus; see D16-200+.
Photographic reproduction equipment; see D16-36+.
Printing equipment; see D18-13+.
Sheet or copy sorter; see D18-42.
Soldering iron; see D10-46+.
Sonar; see D10-46+.
Television magnifier lens; see D16-135.
Timer; see D10-40+.
Toy communications equipment; see D21-111+.
Transistor; see D13-182.
Word processing unit; see D18-1.

100 DATA PROCESSOR OR TERMINAL (15)
101 .With handset or acoustic coupler (16)
102 .Console unit (17)
103 ..With work surface overhang or provision for seated operator
104 ...L-shaped or angularly offset top
105 .With reading or marking slot, channel or tray (18)
106 .With distinct vertically oriented display area or panel
107 .Peripheral unit (19)
108 ..Tape drive
109 ..Disc or drum drive
110 ..Data card sorter
111 ..Printer (20)
112 ..Punch
113 ..Display
114 .Element or attachment (25)
115 ..Front or keyboard panel (21)
116 ..Optical scanner
117 ..Record card
118 FACSIMILE EQUIPMENT (I.E., TRANSMITTED BY RADIO, WIRE OR TELEPHONE)
119 TELEGRAPH EQUIPMENT
120 RECORDING MEDIUM OR CARRIER THEREFOR (1)
121 .Cartridge, cassette or magazine
122 .Reel
123 .Transparency mount
124 VIDEO OR AUDIO RECORDING, TRANSMISSION OR PLAYBACK EQUIPMENT (2)
125 .Video
126 ..Receiver or monitor
127 ...Plural screens
128 ...Projection type
129 ...Combined
130 ....With telephone
131 ....With radio or phonograph
132 ...With swinging or sliding closure
133 ...Console type
134 ...With carrying handle
135 ..Tape or disc recorder or player (3)
136 ...Disc
137 .Radio transceiver (e.g., walkie-talkie, radio telephone, etc.)
138 ..Mobile telephone type (i.e., cellular, cordless, etc.)
139 ..Citizens band
140 .Telephone equipment
141 ..Answering machine
142 ..Telephone or base therefor
143 ...Simulative
144 ...Combined with diverse article (e.g., radio, etc.) (4)
145 ...With plural handsets
146 ...Coin or card operated
147 ...Unitary type (i.e., with integrated mouthpiece, earpiece and dialing means)
148 ...Dialing means on handset
149 ...Freestanding (5)
150 ....With provision for dialing or switching (i.e., keyset or dial)
151 .....Handset to side of dial
152 ......Rotary dial
153 .....Rotary dial
154 .Dictating or transcribing
155 .Radio transmitter (6)
156 .Compact disc player
157 .Vehicle radio, tape or disc player
158 .Voice synthesizer or translator
159 .Intercom (7)
160 .Magnetic recorder or player
161 ..Tape
162 ...Combined (e.g., with radio, turntable, etc.)
163 ....Portable
164 ...Cartridge or cassette type
165 ....Portable
166 ...Provision for juxtaposed reels
167 .Recorder
168 .Combined (8)
169 ..Radio or amplifier and phonograph
170 ..Radio and clock
171 ...Digital type
172 ..Speaker and diverse article
173 .Coin operated type phonograph or radio, (e.g., jukebox, etc.)
174 ..Remote selector unit
175 .Console type radio or phonograph
176 ..Simulative
177 ...Animate
178 ...Musical instrument or symbol (e.g., lyre, piano, etc.)
179 ..Wickerwork
180 ..Three or more repeats, or uniform configuration, about axis
181 ..Triangular in plan
182 ..Five or more sides
183 ..Curved front or side in plan
184 ..Bilaterally symmetrical (9)
185 .Public address system
186 ..Hand held
187 ...Megaphone or bullhorn type
188 .Radio receiver, tuner or amplifier, or housing therefor
189 ..Simulative
190 ...Humanoid
191 ..Paging device (e.g., beeper, etc.)
192 ..Body or clothing attached
193 ..With closure or swinging panel
194 ..Front mounted speaker or provision therefor
195 ...Circular
196 ...With handle or provision therefor
197 ..With visible control
198 ...Dial or readout panel

VIDEO OR AUDIO RECORDING, TRANSMISSION OR PLAYBACK EQUIPMENT (2)
199 .Phonograph or housing therefor
200 ..Simulative
201 ..With carrying handle or provision therefor
202 ..With swinging or removeable cover
203 ..Exposed turntable
204 .Speaker or housing therefor (10)
205 ..Headphone or headset
206 ...With microphone
207 ..Simulative
208 ..Radio or phonograph horn
209 ..Ceiling mount
210 ..With surround, grille or enclosure
211 ...And distinct pedestal or legs
212 ...Three or more repeats, or uniform configuration, about axis
213 ...Sound projection on vertical axis
214 ...Rectangular or square projection surface or outlet
215 ...Circular or oval outlet or grille
216 ..Circular or oval
217 .Element or attachment (11)
218 ..Remote control
219 ..Grille
220 ...Simulative
221 ..Speaker (12)
222 ...Transducer or diaphragm (e.g., driver, magnet, etc.)
223 ...Headphone
224 ...Support (e.g., mounting panel, basket, frame, etc.)
225 ..Microphone
226 ...Combined with diverse article
227 ...Freestanding or with pedestal
228 ...Circular or oval in cross-section
229 ...Holder or support
230 ..Antenna or component thereof
231 ...Bowl or dish type for satellite signal reception
232 ...Simulative
233 ...Three or more repeats, or uniform configuration, about axis
234 ...Formed of wire or uniform-section tubular material
235 ....Dipole type
236 ....Symmetrical on two axes
237 ...Rotator
238 ...Support (e.g., base, mount, etc.)
239 ..Video (13)
240 ..Telephone equipment
241 ...Switchboard or multiple line control (14)
242 ...Acoustic coupler or modem (22)
243 ...Telephone amplifier
244 ...Dial or dialing accessory
245 ....Automatic dialer
246 ....Dial
247 .....Keypad
248 ...Handset (23)
249 ....Mouthpiece or earpiece (24)
250 ...Cover for base or handset
251 ...Support or holder
252 ....Combined with diverse article (e.g., index, writing implement holder, etc.)
253 ....For handset
254 ....For writing materials
255 ...Light
256 ...Connector
257 ..Front panel or dial
258 ...Vehicle audio type
259 ..Dictating or transcribing
260 ..Magnetic recorder or player
261 ..Phonograph
262 ...Pickup arm
263 ...Cartridge or transducer
264 ...Stylus
265 ..Radio, tuner or amplifier
299 MISCELLANEOUS

SEARCH NOTES FOR CLASS D14

(1) For dedicated memory unit without universal application, e.g., memory module, etc., see subclass 114.
Excludes jacketed magnetic disc (i.e., floppy disc, etc.); see subclass 114.
(2) For film recording or viewing equipment, see Class D16.
(3) If recorder is integrated with video camera, see D16-202.
(4) For combination with television, see subclass 130.
(5) For instrument which is exclusivel wall mounted, see subclasses 142-146.
(6) For receiver, see subclasses 168+ or 188+.
(7) For combination with telephone or handset, see subclasses 142+.
(8) Excludes combination of radio, amplifier or phonograph with speaker per se; see subclasses 188+ or 199+.
(9) Exclusive of knob or crank.
(10) Includes megaphone;
For grille per se, see subclass 219.
(11) Includes, in this subclass, equalizer and sound channel mixer.
(12) Includes control, crossover network unit, etc.
(13) For cable television decorder/tuner or signal switcher, see subclass 125.
Includes prompting device.
(14) If switchboard is combined with a handset, it is considered to be a telephone and is therefor classified in subclasses 142-153.
(15) Includes casing for computer.
Includes control or keyboard unit housing.
For keyboard or front panel per se, see subclass 115.
(16) For coupler per se, see subclass 57.
For modem per se, see subclass 242.
(17) For memory storage unit per se, see subclasses 107+.
(18) For reader or marking unit per se, see subclasses 107+.
(19) For terminal, control, or keyboard unit, see subclasses 100+.
(20) For terminal, see subclasses 100+.
(21) If casing for keyboard or control unit is disclosed, patent is classified as a terminal in subclasses 100+.
(22) For modem combined with computer terminal, see subclass 101.
(23) If handset discloses dialing means, it is considered to be a telephone and is therefore classified in subclasses 147 or 148.
(24) For amplifying earpiece, see subclass 243.
(25) For memory storage device having

universal application, e.g., cassette, tape reel, etc., see subclasses 120+.

CLASS D15 MACHINES, NOT ELSEWHERE SPECIFIED

Excluded from this class are:
Abrading tools; see D8-61 and 90+.
Cutting tool; see D8-68 and 98+.
Flatiron; see D32-68+.
Food mixer, grinder, blender, etc.; see D7-368+.
General purpose sprayer; see D23-223+.
Hand held agricultural-type spreader; see D8-2.
Insulated portable food carrier; see D7-605+.
Lubricating can; see D23-211.
Manual pump; see D23-231+.
Material handling article; see D34.
Nonpowered floor cleaning implements; see D32-40+
Refrigerated display case; see D6-449+.
Spark plug; see D13-127.
Spray gun; see D23-223+.
Trash compactor container; see D34-3.
Truck-mounted concrete mixer; see D12-14.
Vending machine; see D20-1+.

1 ENGINE (1)
2 .Steam type (includes element)
3 .Vehicle
4 ..Boat type (includes element)
5 .Element or attachment
6 ..Carburetor
7 PUMP OR COMPRESSOR
8 .Aquarium type
9 .Compressor
9.1 .Gasoline or oil pump (see Note 11)
9.2 ..Plural
9.3 ..With superposed globe (see Note 12)
10 AGRICULTURAL OR CONSTRUCTION MACHINERY
11 .Plow, tiller or element thereof (includes snow plow, blower)
12 ..Powered
13 .Material spreader (includes sprayer)
14 .Lawnmower
15 ..Rider type (2)
16 ..Reel or sickle type
17 ..Element or attachment
18 ...Handle
19 .Concrete, asphalt, or soil mixer
20 .Compactor
21 .Drilling, mining, or soil treatment (includes element)
22 .Self-propelled
23 ..Tractor type (includes grader or bulldozer)
24 ...Endless track
25 ...With scoop or blade
26 ..Agricultural type
27 .Trailing implement (includes lawn sweeper)
28 .Element or attachment
29 ..Disc, rotary hoe, or tooth
30 ..Cab, e.g., enclosure for tractor, etc.
31 ..Hood or radiator grille
32 ..Scraper blade or loader element
33 ..Frame or body
66 TEXTILE, SEWING, KNITTING AND EMBROIDERING MACHINE
67 .With treadle
68 .Sleeve-type sewing surface
69 .Sewing machine
70 ..With carrying handle
71 ..Kneehole type
72 ..Element or attachment
73 ...Surface ornamentation
74 ...Leg or side frame
75 ...Cover
76 ...Frame, head, or arm
77 .Cutting
78 .Element or attachment
79 REFRIGERATION MACHINERY AND APPARATUS
80 .Ice maker
81 .Freezer or refrigerator
82 ..Ice cream type (includes element)
83 ..Top loading
84 ...Opposed doors
85 ..Plural doors and/or drawers
86 ...Three or more
87 ...Superposed
88 ..Vertical hinge alignment
89 .Element or attachment
90 ..Ice tray or mold
91 ..Door
122 MATERIAL WORKING, ABRADING, OR FOUNDING MACHINERY (6)
123 .Deforming or crushing (includes element) (7)
124 .Abrading
125 ..Bench or table mounted
126 ..Element or attachment
127 .Cutting (8)
128 ..Punching or stamping
129 ..Shearing
130 ..Turning, e.g., lathe, etc.
131 ..Milling
132 ..Drilling (9)
133 ..Sawing (includes element)
134 ...Band type
135 .Molding or casting
136 ..Mold or die
137 ...Shoe type, e.g., last, etc.
138 .Element or attachment
139 ..Cutting tool, e.g., drill bit, etc.
140 ..Tool or work holder
141 ..Machine support or frame
142 ..Lever or handle
143 ..Bearing, bushing, or pillow block
144 HEAT TREATMENT, WELDING OR BRAZING (INCLUDES INGOT)
144.1 .Scientific, laboratory, or industrial heating equipment
144.2 .Solid material melting, e.g., solder, etc.
145 PACKAGING OR WRAPPING
146 .Vacuum or heat seal
147 VIBRATOR OR SEPARATOR
148 DRIVE TRAIN (INCLUDES BELT AND PULLEY)
149 .Transmission or speed reducer
150 LUBRICATOR OR OIL COLLECTOR, E.G., DISPENSING, OIL CUP, RESERVOIR, ETC.
151 .Service station type (see Note 13)
152 ..With collecting means
199 MISCELLANEOUS (10)

SEARCH NOTES FOR CLASS D15
(1) For transmission, see subclass 149.
(2) For frame, see subclass 15.
(6) Excludes earth working. See subclasses 10+.
(7) Die excluded. See subclass 136 below.
(8) Specific element included with indented subclasses below.
(9) Includes support or stand, etc. Drill bit excluded. See subclass 139 below.
(10) Tire mounting, vulcanizing, etc. Includes laminating machine. Includes garage door opener unit.
(11) Includes element per se.
(12) Includes cylindrical element at top.
(13) Includes cabinet.

CLASS D16 PHOTOGRAPHY AND OPTICAL EQUIPMENT

Excluded from this class are:

Blinder type sun visor or shade; see D29-18.
Camera or photographic equipment case; see D3-33.
Cassette for film or magnetic tape; see D14-120+.
Computer or data processing equipment; see D14-100+.
Contact lens case; see D3-34.
Eyeglass case; see D3-34.
Eyeshade; see D29-18.
Eye shield for attachment to helmet; see D29-16.
Face mask; see D29-8.
Goggles, eye or face protector; see D2-234.
Grinder for lens; see D15-124+.
Intraocular lens; see D24-33.
Kaleidoscope; see D21-60.
Lamp, floodlight or spotlight for photography (non camera attached); see D26-24+.
Measuring or testing instrument embodying optical device (other than camera range finder); see D10-46+.
Microscope slide rack or support; see D6-85+.
Optical medical instrument; see D24-1.1+ and 8+.
Optician's equipment; see D24-1.1+ and 8+.
Photolithographic printing equipment; see D18-13+.
Reel for film or magnetic tape; see D14-122.
Sorter for data processing equipment; see D14-110.
Transit or optical surveyors's instrument; see D10-61+.

200 CAMERA OR BODY THEREFOR (1)
201 .Simulative
202 .Video type
203 .Security surveillance type
204 .Underwater
205 .Cinematographic (i.e., motion picture type, etc.)
206 ..With handgrip
207 ..With multiple lens
208 .Combined (e.g., with case, etc.)
209 ..With flash or floodlight
210 .Plural objective lens (e.g., stereoscopic, etc.) (2)
211 .Folding or extending case or lens
212 ..Laterally opening divided body
213 .Lens on narrow side of body
214 .Stand mounted (e.g., identification photo type, etc.)
215 .Cabinet or booth type
216 .Reflex viewing type
217 ..Single lens
218 .Separate lens and viewfinder (e.g., rangefinder type, etc.)
219 .Element (3)
220 ..Rangefinder or viewfinder
221 PROJECTOR OR VIEWER
222 .Stereoscopic
223 .Combined with printer
224 .Combined with splicer (i.e., film editing type, etc.)
225 .Integrated unit (i.e., with self-contained image viewing and reflection or projection)
226 ..Coin operated or arcade type
227 ..With eyepiece
228 ..Plural screen
229 ..Foldable, collapsible or articulated
230 .Motion picture type
231 ..With carrying handle or case
232 .Overhead or opague type
233 .With provision for transparency magazine (i.e., with provision for magazine, shuttle mechanism, etc.)
234 .With carrying handle or case
235 .Element or attachment
236 ..Transparency holder (e.g., magazine, cartridge, etc.) (4)
237 PHOTOGRAPHIC ACCESSORY
238 .Photometer, color, or exposure meter (5)
239 .Camera mounted movie light or flash unit
240 ..Provision for angle adjustment
241 .Screen or element thereof
242 .Support
243 ..Handgrip or shoulder support
244 ..Tripod or unipod
245 ...Element
246 .Film processing equipment (6)
247 ..For x-ray film
248 ..Enlarger, printer or head therefor (7)
249 ..Tray, tank or drum
250 ..Element or accessory
100 OPTHALMIC ARTICLE (14)
101 .Lens (15)
102 .Eyeglasses, protective eyewear or frame therefor (16)
103 ..Combined with diverse article
104 ..Simulative
105 ..Hand-held (e.g., lorgnette, etc.)
106 ..Singular arm for attachment to body
107 ..Provision for flexible attachment to body
108 ..Flexible, adjustable or folding bridge
109 ..Prismatic or cantilevered lens
110 ..With sun visor (17)
111 ..Outline of front extends onto and is contiguous with temple (18)
112 ..Contiguous lenses
113 ..Lens mounted below eye or bridge level
114 ..Temple mounted below centerline
115 ..Horizontal or upwardly curved surface spaning lens upper surfaces
116 ..Discontinuous or partial lens support or surround (e.g., "semi-rimless", etc.)
117 ..Distinct bridge or temple pieces (e.g., "rimless" or "wire frame" type, etc.)
118 ..With pierced temple or front
119 ..With distinct surface texture or applied ornamentation
120 ..Concavo-convex lens surround
121 ..Lens having straight side
122 ..Circular lens
123 ..Element or attachment
124 ...Contact lens handling implement
125 ...Applique
126 ...Bridge or nose pad component
127 ...Temple
128 ...Hinge component or lens fastener
129 ...Holder
130 OPTICAL ARTICLE NOT ELSEWHERE SPECIFIED (19)
131 .Microscope
132 .Telescope (20)
133 ..Binocular
134 .Lens or objective
135 ..Magnifying or reducing glass
136 ..Element or attachment
137 .Prism

SEARCH NOTES FOR CLASS D16

(1) For dedicated photocopy equipment camera, see D18-40.
(2) Exclusive or viewfinder objective.
(3) For attachment, e.g., tripod, handgrip, flash unit, etc., see subclasses 237+.
    For film or film strip, see subclasses 237+.
    For lens, see subclasses 134+.
    For reel, cassette, etc., see see D14-120.
(4) For transparency mount per se, see D14-123.
(5) For meter which is coupled to camera, see subclass 219.
(6) For photo processing or printing machine, see D18-36+.
(7) For lens, see subclass 134.
(14) Includes monocle.
    For magnifying glass, see subclas 135.
    CLASSIFIED BY FULL-LINE DISCLOSURE.
(15) For compound, multielement or adjustable lens, see subclass 134.
(16) If protection for other portion of the face is included, e.g., nose shield, covering, etc., article is classified in D29-17.
(17) Exclusive of lip or peripheral wall; to be classified in this subclass claimed disclosure must include a distinct forwardly extending sun shade.
(18) Exclusive of temple extension across front; to be classified in this subclass claimed disclosure must include top and bottom surfaces of a frame front which have continuity onto the temple piece.
(19) Element included in this and in indented subclasses.
    CLASSIFIED BY FULL-LINE DISCLOSURE.
(20) For combined firearm and telescope, see D22-1+ or 3+.

CLASS D17 MUSICAL INSTRUMENTS

Excluded from this Class are:
Musical instrument cases; see D3-30.1+.
Musical reproduction equipment; see D14.

1 KEYBOARD TYPE
2 .Combined with diverse article
3 .Accordion
4 ..Element or attachment
5 .Organ or cabinet therefor
6 ..Multiple keyboard
7 .Piano or cabinet therefor
8 ..Grand type
9 .Element or attachment
10 WIND INSTRUMENT
11 .Cornet or trumpet
12 .Harmonica
13 .Element or attachment
14 STRING INSTRUMENT
15 .Plural neck
16 .Harp (1)
17 .Violin (1)
18 .Simulative
19 .Symmetrical outline
20 .Element or attachment
21 ..Bridge, tailpiece, or vibrato unit
22 PERCUSSION INSTRUMENT (2)
23 .Xylophone or marimba
24 MECHANICAL INSTRUMENT (3)
99 MISCELLANEOUS

SEARCH NOTES FOR CLASS D17
(1) Includes body per se.
(2) Includes element.
(3) Includes music box.

CLASS D18 PRINTING AND OFFICE MACHINERY

Excluded from this class are:
Coin tray or holder; see D99-34+.
Computers and data processing equipment; see D14-100+.
Sales transaction terminal without cash drawer; see D14-100+.
Sorter for data processing equipment; see D14-110.
Teletype equipment; see D14-119.

1	TYPEWRITER OR CALCULATOR (1)
2	.Combined (2)
3	.Coin handling machine
4	..Cash register (3)
5	.Checkwriter (3)
6	.Calculator (12)
7	..With keyboard
8	...With carriage
9	..Slide rule type
10	...Rotary
11	..Housing or casing
12	.Element or attachment
36	COPY REPRODUCING EQUIPMENT
37	.Electrostatic type (i.e., specified as such)
38	..Console or floor type
39	.Console or floor type
40	.Element or attachment
41	..Control or panel
42	..Feeder or collator
43	..Toner or developer container, cassette, etc.
44	..Paper or film container, cassette, etc.
45	..Copy stand
13	PRINTING EQUIPMENT (4)
14	.Hand held or manipulated (5)
15	..Stamp, seal imprinter, or stamp pad
16	...Simulative (6)
17	...Stamp pad
18	...Element or attachment
19	..Label or tape embossing tool
20	..Stenograph
21	..Autographic register
22	.Element or attachment (13)
23	..Stand or frame
24	TYPE OR TYPE FACE
25	.Foreign alphabet
26	.Segmented display type (7)
27	.Simulative (8)
28	.Script type
29	.Individual panel mount type (9)
30	.Outlined or with shadow
31	.With detached interior embellishment (10)
32	.Border or ornament design
33	..Animate figure representation
34	BOOKBINDING MACHINES, PRINTERS' STAPLING MACHINES AND EQUIPMENT (11)
35	PNEUMATIC DISPATCH TUBE OR SYSTEM
99	MISCELLANEOUS

SEARCH NOTES FOR CLASS D18

(1) Includes casing or frame per se.
(2) Includes combination with case.
(3) Includes element.
(4) Includes engraving equipment.
(5) Excludes crank operated floor or console type; see subclass 13.
(6) Includes body per se.
(7) Electroluminescent, etc.
(8) Excludes border design; see subclass 32.
(9) Example, disclosed on oval, rectangular background, etc.
(10) Example, a dot in the middle of the letter "O".
(11) Includes machines for cutting paper analagous to guillotines, trimmers, shredders, etc.
(12) Includes voting machine.
(13) For ribbon or ribbon cartridge; see subclass 12.

CLASS D19 OFFICE SUPPLIES, ARTISTS' AND TEACHERS' MATERIALS

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Excluded from this class are:
Air brush; see D23-223+.
Bulletin board; see D20-10+.
Calling card receiver; see D6-449.
Data processing record card; see D14-117.
Decal or transfer; see D20-11.
Dividers; see D10-73.
Drafting table; see D6-420.
Easel; see D6-300+.
Educational device in the guise of a toy; see D21.
Educational material in the form of graphics, e.g., sign, chart, etc.; see D20-10+.
File cabinet; see D6-432+.
Finger cot, stall, or guard; see D29-20.
Furniture type book reading stand; see D6-419.
Geometric drafting template; see D10-64.
Imprinting or embossing stamp; see D18-15+.
Ink bottle; see D9.
Measuring instrument; see D10-61+.
Napkin; see D6-595.
Office machine; see D18.
Packaging bag, wrapper or envelope, etc.; see D9-305+.
Packaging bag, wrapper or envelope; see D9-305+.
Paintbrush; see D4.
Paper cutter; see D15-127.
Pencil box or case; see D3-30.1+.
Photograph or picture frame; see D6-300+.
Photographic or cinematographic viewer; see D16.
Place mat; see D6-613+.
Pliers-type punch; see D8-51+.
Printing machine or press; see D18-13+.
Protractor; see D10-65.
Rule; see D10-71+.
Scissors; see D8-98.
Sculpting tool, e.g., knife or spatula; see D8-98+.
  Chisel; see D8-47.
  Hammer; see D8-75+.
Sheet material; see D5.
Shelf paper; see D5-7+.
Stapler; see D8-49+.
Staple remover; see D8-48.
Triangle; see D10-65.
T-square; see D10-65.
Voice reflector for speech or hearing therapy; see D24-35.
Voice synthesizer unit; see D14-158.
Wrapping paper; see D5 and D9-305.
Writing instrument combined with lighter; see D27-146.

1 PAPER OR PASTEBOARD FOR WRITING OR PRINTING (1)
2 .Combined (2)
3 .Envelope
4 ..Simulative
5 .Continuous background pattern, e.g., safety paper
6 .Simulative
7 ..Animate
8 ...Humanoid
9 CREDIT CARD, CERTIFICATE, OR STAMP
10 .Identification or credit-type card
11 .Negotiable instrument or ticket, e.g., currency, check, etc. (3)
12 .Stamp or seal
20 CALENDAR OR CALENDAR HOLDER
21 .Combined
22 ..With writing paper receptacle (5)
23 ..With pen or pencil holder (6)
24 .Simulative
25 .Perpetual
26 BOOK, ALBUM OR COVER (7)
27 .Ring bound or looseleaf type
28 .Simulative
29 ..Animate
30 ...Humanoid
31 ..Plant life
32 .Element or attachment
33 ..Leaf (8)
34 ..Bookmark
34.1 BOOKEND
34.2 .Combined with disparate article
34.3 .Simulative
34.4 ..Animate
34.5 ...Humanoid
35 EQUIPMENT FOR WRITING, DRAWING, OR FOR FINE ARTS (9)
36 .Plural or combined
37 .Guide (10)
38 ..Compass
39 ..Curve template or French curve
40 ..Stencil
41 .Marking instrument
42 ..Simulative
43 ..Provision for cap over writing tip only
44 ..With suspension ring or loop
45 ..Elongated
46 ...Having flared or enlarged top
47 ...With surface texture or pattern
48 ....Lateral striation
49 ....Longitudinal striation
50 ....Diagonal striation
51 ...Substantially circular or oval in cross section
52 .Writing or drawing surface, e.g., blackboard, drawing board, etc. (11)
53 .Eraser (12)
54 .Element or attachment
55 ..Nib, stylus or grip
56 ..Clip
57 ..Top or cover for marking instrument
58 ...Pencil top or ferrule (13)
59 TEACHING MATERIAL (14)
60 .Sensory feedback, e.g., audio-visual teaching machine
61 .Terrestrial or extraterrestrial map or model
62 .Demonstrator or exhibitor (15)
63 ..Vehicle trainer
64 ..Movable indicator or changeable exhibitor
65 OFFICE EQUIPMENT NOT ELSEWHERE SPECIFIED (16)
66 .For gluing, sealing, etc.
67 ..Strip material dispenser (17)
68 ...Lever-operated or automatic
69 ...Manual cutting
70 ..Moistener (18)
71 ...Hand-held
72 .Perforating or cutting (19)
73 ..Pencil sharpener
74 ...Crank type
75 .Holder or file (20)
76 ..Rotary or flip-card file, list finder
77 ..For writing instrument and diverse article
78 ...With paper receptacle
79 ...With inkwell
80 ....Simulative
81 ..For writing instrument
82 ...Simulative
83 ...Instrument supported horizontally
84 ...Instrument supported vertically or angularly

OFFICE EQUIPMENT NOT ELSEWHERE SPECIFIED (16)
.Holder or file (20)
..For writing instrument
...Instrument supported vertically or angularly
85 ....Plural
86 ..For paper or document (21)
87 ...Combined with telephone holder
88 ...Clipboard (22)
89 ...Roll paper type
90 ...Substantially vertical
91 ....For display of note pad, document, book, etc.
92 ...Substantially horizontal, e.g., desk tray
93 ..Inkwell (23)
94 ...Simulative
95 .Desk furnishing (24)
96 ..Paperweight
97 ...Simulative
98 ..Blotter or pen wiper
99 .Element or attachment (25)
100 MISCELLANEOUS

SEARCH NOTES FOR CLASS D19
(1) Includes carbon paper, greeting card or place card.
  For paper combined into book, tablet, etc., see subclass 26. Includes business form.
(2) Includes aerogram.
(3) For checkbook cover, see subclass 26 below.
(5) For paper holder per se, or in other combinations, see subclasses 78 and 86+ below.
(6) For writing instrument holder per se, or in other combinations, see subclasses 77+ and 81+ below.
(7) Includes writing tablet.
(8) For paper other than book or album leaf, see subclasses 1+ above.
(9) Includes only articles for writing, drawing, sculpting, etc., not elsewhere specified, and elements thereof.
  For holder, stand, etc., see subclasses 75+ below. Includes artist's paint tray or palette.
(10) Includes laminating machine.
(11) Includes tracing board.
(12) Includes element.
  For pencil tip eraser holder, see subclass 58 below.
(13) Includes eraser holder.
(14) Includes element.
(15) Includes science demonstrator.
(16) Includes paper fastener or clip.
(17) Includes stamp roll dispenser.
(18) Includes sponge cup.
(19) Includes hole punch.
(20) Includes "desk set".
  For calendar holder, see subclasses 20+.
(21) Includes ring or wire type.
(22) For clip or clamp for clipboard, see Class D8-395.
(23) For ink bottle, see Class D9.
(24) Includes desk pad or typewriter pad.
(25) Includes index tab.

CLASS D20 SALES AND ADVERTISING EQUIPMENT

Excluded from this class are:
Article of furniture; see D6.
Machines for making pop corn; see D7-325.
Racks, holders, or dispensers for cigarettes without mechanical features; see D6-396+.

1 VENDING MACHINE (1)
2 .Stamp, ticket, or insurance type (2)
3 .Simulative
4 .Multiple diverse article or plural compartment, e.g., beverage, food, etc.
5 ..Bottle, can, or carton (3)
6 .Periodical, e.g., newspaper, etc.
7 .Gum ball type (4)
8 .Element or attachment
9 ..Coin control mechanism
10 SIGNS OR DISPLAY FORMS (11)
11 .Decalcomania
12 .Composite character (5)
13 .Vehicle license or emblem plate
14 ..Animate motif
15 .Desk-type name plate
16 .Barber pole or sign
17 .Street or highway address sign
18 .Program reminder or programmable indicator, e.g., T.V., radio, etc. (6)
19 .Combined with diverse article or function
20 ..With time indicator
21 .Rotatable display
22 .Label or tag (7)
23 ..Simulative
24 ...Animate
25 ....Humanoid
26 ...Plant life
27 ..Substantially rectangular or square
28 ..Substantially circular or oval
29 .Simulative
30 ..Animate
31 ...Humanoid (8)
32 ....Element, e.g., hand, head, etc.
33 .....Hand
34 ..Scenic or geographic representation
35 ..Vehicle or element thereof
36 ..Star
37 ..Representation of consumable product or container therefor, e.g., barrel, bottle, etc.
38 ..Building
39 .Billboard type
40 .Card type (9)
41 .Post supported (10)
42 .Attachable to vertical surface or hanging type
43 .Fastener or support for card, price tag, etc.
44 ..Molding strip type
99 MISCELLANEOUS

SEARCH NOTES FOR CLASS D20

(1) Must be coin operated; dispensing articles of other types classified with appropriate class.
(2) For household type stamp holder, search D19-67.
(3) Includes beverage vending per se.
(4) Includes element.
(5) For electroluminescent type, search D18-26.
(6) Includes holder therefor.
(7) Excludes clothing label on emblem; see D5-63+.
(8) Figures partially obstructed are included in this subclass. Mannequins in this subclass.
(9) That is, made from flat, thin sheet material.
(10) Includes post per se.
(11) Includes, in this subclass, vehicle-attached sign.

CLASS D21 GAMES, TOYS, AND SPORTS GOODS

Excluded from this class are:
Abacus; see D18-6+.
Animal toy; see D30-99.
Archery equipment; see D22-107.
Ball storage or carrying case or bag; see D3-36.
Bank; see D99-34+.
Baseball glove; see D29-21.
Belt-attached ball holder; see D3-104.
Canopy or awning; see D25-56+.
Children's furniture; see D6.
Coin box; see D99-34+.
Coin holder; see D99-34+.
Desk for scorekeeping; see D6-396+.
Drawing surface or device; see D19-35+.
Golf bag cart; see D12-23.
Golf bag per se; see D3-37.
Handlebar; see D12-178.
Horn; see D10-120.
Horseshoe; see D30-99.
Lap counter; see D10-46.1.
Mannequin; see D20-31.
Money purse; see D3-42+ and 56+.
Motorized swimboard or surfboard; see D12-307.
Music box; see D17-24.
Pedal-operated two- or three-wheeled vehicle; see D12-107+.
Pyrotechnic article; see D22-10+.
Rangefinder; see D10-70.
Scorer or indicator; see D10-46.1.
Self-propelled vehicle; see D12.
Sleigh or sled; see D12-6.
Slingshot; see D22-106.
Sports equipment storage or carrying case or bag; see D3-36+.
Statue; see D11-131+.
Steering wheel; see D12-175+.
Strength-measuring device; see D10-83.
Target for archery; see D22-113.
Tennis equipment case; see D3-36.
Terrestrial or extraterrestrial model; see D19-61.
Tire; see D12-134+.
Toy bank; see D99-34+.
Toy chest; see D6-432+.
Wearing apparel; see D2.
Wheel; see D12-204+.
Whistle; see D10-119.

1 GAME OR GAMBLING ARTICLE (1)
2 .Aerial projectile type (2)
3 ..Projectile launched by ramp
4 ..Quoit or horseshoe (3)
5 ..Target (4)
6 ...Dartboard type
7 .Surface projectile type (5)
8 ..Inclined surface type, or having ramp
9 ...With propulsion means, or with provision therefor
10 ....Bumper or flipper
11 ..Sports simulation (6)
12 .Vertical fall type
13 .With screen or cathode-ray tube (76)
14 .Board or surface (7)
15 ..Folding
16 ..Walls confining playing surface (8)
17 ...And pocket or opening for capture of game piece
18 ....Sports simulation
19 ...And interior wall or trackway for game piece (9)
20 ..Pocket or opening for capture of game piece
21 ..Combined with chance determining device (10)
22 ...Wheel or spinner
23 ..Plural distinct playing surfaces (11)
24 ..Checkerboard type
25 ..Simulative (12)
26 ...Playing card or suit theme
27 ...Sports
28 ....Baseball
29 ....Football
30 ...Humanoid
31 ...Geographical or architectural
32 ..Arcuate outline
33 ..Having four or more sides
34 ...Rectangular or square
35 ....Curvilinear path (13)
36 ....Asymmetrical pattern
37 .Gambling or chance determining article (14)
38 ..Lever operated, i.e., "One-armed bandit"
39 ..Rotated or agitated (15)
40 ...Roulette type
41 ...Dice or teetotum
42 ..Playing card
43 ...Numerical (16)
44 ....Symbol set or suit
45 .....Club, diamond, heart, spade
46 ...Alphabetical
47 ...Back design
48 .Element or attachment (77)
49 ..Dart (17)
50 ..Quoit or horseshoe
51 ..Game piece or marker (18)
52 ...Chess
53 ...Circular, i.e., chip or checker type
54 ..Holder (19)
55 ...Combined, e.g., card and chip holder, etc.
56 ...For chip
57 ..Card game accessory (20)
58 ...Shuffler
59 TOY (21)
60 .Kaleidoscope or changeable image type
61 .Bubble or smoke ring making
62 .Tethered or suspended (22)
63 ..Crib-attached type
64 .Sounding or noisemaking type (23)
65 ..Rattle
66 .Rocking or bouncing (24)
67 ..Pogo stick
68 ..Simulative
69 ...Animate
70 ....Horse
71 .Provision for standing or seated occupant (25)
72 ..Stilt
73 ..Simulative
74 ...Animate
75 ....Horse (26)
76 ...Vehicle (27)
77 ....Aircraft
78 ....Automobile or truck
79 ....Construction, earthworking, or farming
80 ..Three-wheeled
81 ..Two-wheeled, e.g., scooter, etc.
82 .Aerial (28)
83 ..Animate simulation
84 ..Inflated, e.g., balloon, etc.
85 ..Rotary wing type or disk
86 ...Disk (29)
87 ..Aircraft or spacecraft (30)
88 ...Kite or flexible wing type, e.g., paraglider, hang glider, etc.
89 ...Formed entirely of planar or sheet material
90 ...With propeller or provision therefor
91 ..Element or attachment (31)
92 .Spinning or whirling (32)
93 ..Air operated, e.g., pinwheel, etc.

TOY (21)
.Spinning or whirling (32)
94 ..Spiral drop
95 ..Top, i.e., spinning on one point
96 ...With spin-inducing element or holder
97 ....Integral plunger
98 ..String-impelled
99 ...Return top
100 ..Baton or cheerleader's pompon
101 ..Hoop
102 .Balancing
103 .Pounding
104 .Puzzle
105 ..Shape-matching (33)
106 ...Bent wire
107 ...Three-dimensional, i.e., interfitting in three or more planes
108 .Construction type (34)
109 .Representation or scale model (35)
110 ..Photographic or cinematographic
111 ..Communications or electronic equipment
112 ...Phonograph or tape recorder
113 ...Radio or television
114 ..Building or structure
115 ...Simulative of diverse article
116 ...Barn
117 ...Bridge
118 ...Service type, i.e., airport, railroad, service station building, etc.
119 ....Tower, e.g., lighthouse, windmill, etc.
120 ..Hand tool, e.g., hammer, saw, shovel, etc. (36)
121 ..Furnishing (37)
122 ...Appliance (38)
123 ...Chair, sofa, or bed
124 ..Machinery or vehicle (39)
125 ...Motor
126 ...Reproducing (40)
127 ....Printing (41)
128 ...Vehicle or body therefor (42)
129 ....Rail (43)
130 ....Watercraft
131 ....Endless track type
132 ....Farming or earthworking
133 ....Firefighting
134 ....Load carrying (44)
135 .....Articulated type
136 .....Automobile (45)
137 ......Two or more fully exposed wheels, or having detached fenders, e.g., racing type, etc.
138 .....Cement
139 .....Towing
140 .....Fully enclosed load carrying portion
141 ...Element or attachment (46)
141.1 ....Controller or transformer
142 ....Control panel
143 ....Track or roadway
144 ..Timepiece
145 ..Weapon
146 ...Firearm type
147 ....Handgun (47)
148 ..Animate figure
149 ...Plural or convertible, i.e., combined animate forms, plural heads, etc.
150 ...Action type, i.e., animated (48)
151 ....Projecting, i.e., jack-in-the-box type
152 ....Puppet
153 .....Hand type (75)
154 ...Comprised of planar elements
155 ...Consisting of, or simulative of, diverse article, e.g., constructed from fruit or vegetable components, pipes, couplings, etc.
156 ...Ape or monkey
157 ...Aquatic (49)
158 ....Frog
159 ...Bear
160 ...Bird
161 ...Canine
162 ...Elephant
163 ...Feline
164 ...Giraffe
165 ...Horse
166 ...Humanoid (50)
167 ....Combined with holder or pouch
168 ....Armless or legless
169 ....Winged
170 ....Consisting primarily of yarn or fiber (51)
171 ....With body garment
172 .....Simulative of diverse animate figure
173 .....Clown or jester
174 .....Elf, leprechaun, pixie, etc.
175 .....Bibbed, or having apron
176 .....With pointed cap
177 .....Occupational or vocational costume or uniform (52)
178 ......Police or military
179 ......Santa Claus
180 .....National, regional, or ethnic costume
181 ......Cowboy or cowgirl
182 ......Indian
183 ......Oriental
184 .....Flattened, i.e., disproportional thickness or width
185 ...Insect
186 ...Pig
187 ...Rabbit
188 ...Rodent
189 ...Element or attachment (53)
190 ....Head or mask (54)
191 EXERCISING OR SPORTS EQUIPMENT (55)
192 .Treadmill or walking type
193 .Rotating or rocking platform
194 .Pedal operated type, e.g., stationary bicycle, etc.
195 .Lever, bar, or pulley operated machine
196 .Weight
197 ..Barbell or dumbbell
198 .Hand manipulated or with handgrip (56)
199 .Sports (57)
200 ..Goal
201 ...Basketball
202 ...Croquet
203 ..Projectile (58)
204 ...Ball
205 ....Symmetrical repeating surface pattern (59)
206 ....Retriever or holder (60)
207 ...Shuttlecock
208 ...Support, e.g., tee, etc.
209 ....For football
210 ..Striking or propelling element (61)
211 ...Bat or club
212 ....Racket type
213 .....Paddle
214 ....Golf club or club head
215 .....Simulative
216 .....Adjustable
217 .....Putter type
218 ......Opposed striking surfaces
219 ......With alignment aid, e.g., groove, tang, gauge, etc.
220 .....Iron type, i.e., having elongated and relatively shallow head
221 ...Element or attachment (62)
222 ....Handgrip
223 ....Rack or holder (63)
224 ..Skating or skimming device

EXERCISING OR SPORTS EQUIPMENT (55)
.Sports (57)
..Skating or skimming device
225 ...Ice
226 ...Roller
227 ....Skateboard
228 ...Skimming (64)
229 ....Ski
230 ....Element or attachment
231 .....Skeg or fin
232 ..Billiards or pool
233 ..Bowling (65)
234 ..Golf (66)
235 ..Gymnastics (67)
236 ..Water sports (68)
237 ...Swimming or flotation aid
238 ....Body-worn (69)
239 .....Fin or flipper
240 AMUSEMENT OR ENTERTAINMENT ARTICLE NOT ELSEWHERE SPECIFIED (70)
241 .Trick or magic device (71)
242 .Playground or amusement ride apparatus
243 ..Plural diverse articles, i.e., combined
244 ...Sliding and climbing
245 ..Climbing
246 ..Swinging
247 ..Riding or sitting (72)
248 ...Ferris wheel
249 ...Carousel, roundabout, or whirligig
250 ...Vehicle or vehicle simulation
251 ...Seesaw
252 ..Sandbox or wading pool (73)
253 TENT (74)
254 .Element or attachment
255 ..Stake

SEARCH NOTES FOR CLASS D21

(1) Includes coin-controlled horse race unit.
For element or attachment, see subclasses 48+.

(2) Includes game wherein projectile at some point is in flight toward target. Projectile must be thrown, propelled, launched, fired, projected, etc.
For game wherein game piece is simply moved, see subclasses 14+.
For boomerang, see subclasses 82+.
For golf practice article, see subclass 234.

(3) For horseshoe or quoit per se, see subclass 50.

(4) Includes shooting range type amusement unit.
For archery target, see D22-15+.

(5) Includes game wherein projectile is thrown, propelled, launched, fired, projected, etc., toward target.
For game wherein game piece is simply moved, see subclasses 14+.
For game board which is tilted to maneuver ball, see subclasses 16+.
For pool or billiards, see subclass 232.
For surface particularly adapted for gambling, see subclasses 37+.

(6) Includes shuffleboard type.

(7) For "talking board", see subclass 241.

(8) Entire surface must be confined by walls.

(9) Includes trackway defined by spaced walls or by channel.

(10) Includes combination with dice agitator.
For chance determining device per se, see subclasses 37+.
For roulette type game, see subclass 40.

(11) Playing surfaces must be separate; boards having two patterns on opposite sides of a single surface excluded.

(12) Geometric figure, letter, or numeral not considered.

(13) Circular indicia per se not considered.

(14) Includes game table.

(15) Includes bingo apparatus.

(16) Includes face card.

(17) For arrow, see subclass 145.

(18) For chance determining article, see subclasses 37+.

(19) Includes dispenser.

(20) For card table, see subclass 37.
For scoring device, see D10-46.1.

(21) Element included in this and in indented subclasses.
For marble drop game, see subclass 12.

(22) Includes toy having two elements which are interrelated and which coact.
For aerial spinning toy, see subclasses 92+.
For marionette or puppet, see subclass 152.
For paddle per se, see subclass 213.
For toy swing or swinging cradle, see subclass 123.
Pull toy per se excluded; see subclass for specific toy.

(23) Includes musical type.
For gun, see subclasses 146+.
For radio, phonograph, television, etc., see subclasses 111+.

(24) For ball, see subclasses 204+.
For children's rocking chair, see D6-344+.
For rocking exerciser, see subclass 193.
For seesaw, see subclass 251.
For trampoline, see subclass 235.

(25) Includes body or frame.
Includes wagon.
For skate or skateboard, see subclasses 226+.
For wheelbarrow, see subclass 134.

(26) Includes hobbyhorse, i.e., stick with a horse's head, or body-worn horse representation.

(27) For scale model or representation per se, see subclasses 128+.

(28) Includes parachute.
Includes scale model or representation.
For toy instrument panel, see subclass 142.

(29) Includes disk-shaped aircraft.

(30) Includes rocket.
For rotary-wing or disk-shaped aircraft, see subclasses 85+.

For aircraft control unit, see subclass 141.1.
(31) Includes launcher.
Includes pea shooter type.
For ball launcner or ball launching ana received article, see subclass 210.
For slingshot, see subclass 145.
(32) Includes toy gyroscope.
For jump rope, see subclass 198.
For windmill simulation, see subclass 119.
(33) For hammer and peg type, see subclass 103.
(34) Includes block.
(35) Includes toy soda fountain.
For aerial toy or representation thereof, see subclasses 82+.
For geographical model, see D19-61.
For toy sand bucket, see subclass 120.
For toy which simulates construction machinery, see subclasses 128+.
For toy sports equipment, see subclasses 199+.
(36) Includes sand pail.
(37) Includes toy housewares.
(38) Includes sewing machine.
(39) Includes cash register.
For toy slide projector, see subclass 110.
(40) Includes molding press.
(41) Includes typewriter.
(42) For aircraft, see subclasses 87+.
(43) For controller, see sublass 141.1.
For accessory building, see subclasses 114+.
(44) Includes wheelbarrow.
(45) For controller, see subclass 141.1.
(46) For scale representation of terrestrial features, e.g., model railway scenery, see D19-61.
For scale representation of building, see subclasses 114+.
(47) Includes water pistol.
(48) Normal hinged joints not considered.
For wheeled animate simulation, see appropriate subclass below.
(49) Includes turtle.
For waterfowl, see subclass 160.
(50) Includes "fuzzies" which appear to be human.
(51) Includes knit or crocheted.
(52) Includes dancer.
Includes witch.
(53) For clothing, see Class D2.
(54) Includes mask for disguise.
(55) Element included in this and in indented subclasses.
Includes ballet barre.
For scoring device, see D10-46.1.
(56) For sports equipment, see subclasses 199+.
(57) For quoit or horseshoe game equipment, see subclass 4.
For scoreboard, see D10-46.1.
(58) For dart, see subclass 49.
For quoit or toy horseshoe, see subclass 50.
For tethered ball and paddle-type toy, see subclass 62.
For striking or propelling element, see subclasses 210+.
(59) For golf ball washer, see subclass 234.
(60) For ball launching and receiving article, see subclass 210.
For belt-attached holder, see D3-104.
(61) Includes ball launcher.
Includes croquet mallet.
For ski pole, see subclass 230.
(62) Includes golf club head cover.
(63) Includes rack or holder for striking element only.
For other sports-accessory holders, see appropriate subclass under particular sport.
(64) Includes snowshoe.
Includes swimboard, surfboard aquaplane, etc.
For motorized or pedal-operated type, see D12-306-307.
For sleigh or sled, see D12-6+.
(65) Includes practice or training device.
For ball, see subclass 204.
(66) Includes practice or training device.
Includes golf ball washer.
For ball, see subclasses 204+.
For measuring instrument such as rangefinder, see D10-70.
For miniature putting game, see subclasses 2+ and 7+.
For scorekeeping article, see D10-46.1.
(67) Includes trampoline.
(68) Includes diving board.
For toy swimming pool, see subclass 252.
(69) Includes life preserver.
(70) Includes fortunetelling or astrological device.
For miniature golf unit, see subclasses 2+ and 7+.
For amusement game, see subclasses 1+.
(71) Includes "talking board".
(72) Inclues seat.
(73) For swimming pool, see D25-2.
(74) For building or canopy, see, respectively, D25-1+ and 56+.
(75) For simulative glove or mitten, see D2-615+.
(76) Includes video game console.
(77) Includes "joystick" or control for video game.

CLASS D22 ARMS, PYROTECHNICS, HUNTING AND FISHING EQUIPMENT

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100	PROJECTILE LAUNCHING WEAPON (1)
101	.Combined
102	.Spear gun or blow gun
103	.Rifle or shotgun
104	.Pistol
105	..Simulative motif
106	.Slingshot (2)
107	.Bow (2)
108	.Firearm element or attachment
109	..Gunsight, ventilating rib, or mount
110	...Gunsight mount
111	..Recoil pad
112	EXPLOSIVE OR PYROTECHNIC ARTICLE
113	TARGET OR TARGET LAUNCHER
114	.Aerial or disc type
115	FREE FLIGHT PROJECTILE (2)
116	.Pellet or bullet, (e.g., cartridge, etc.)
117	HAND HELD WEAPON
118	.Sword or knife
119	TRAPPING, REPELLING, OR VERMIN DESTROYING (2) (3)
120	.Repeller, (e.g., ultrasonic, chemical, etc.)
121	.Marine life
122	.Insect type
123	..Electrocuting
124	..Fly swatter
125	.Lure, (e.g., decoy, etc.)
126	..Fishing
127	...Wormlike
128	...With fibrous or feather like appendage
129	...With spoon or spinner
130	....Simulative
131	.....Fish
132	...Simulative
133	....Fish
134	FISHING EQUIPMENT (2)
135	.Net or scoop
136	.Bait bucket or container
137	.Rod or reel (4)
138	..Combined (5)
139	...With diverse article
140	..Crank operated reel
141	...Reel rotates perpendicular to rod (e.g., spinning reel, etc.)
142	..Rod (6) (7)
143	..Line guide
144	.Fishhook or guard
145	.Sinker
146	.Float
147	.Fishing rod holder
148	..Combined with diverse article (e.g., signal, etc.)
149	.Fisherman's tool
150	..Relatively movable plural handles
199	MISCELLANEOUS

SEARCH NOTES FOR CLASS D22

(1) See 113 for target launcher; (e.g., clay pigeon, etc.).
(2) Element included.
(3) See 135 for fish scoop or net.
(4) Includes hand held devices for storing line.
(5) Includes reel and handle combination.
(6) Includes reel support or handle.
(7) Includes rod tip.

CLASS D23 ENVIRONMENTAL HEATING AND COOLING, FLUID HANDLING AND SANITARY EQUIPMENT

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Excluded from this class are:
Baby dressing table combined with bathing unit; see D6-382.
Caps for automobile gas tanks or radiators; see D12-197+.
Defrosting tool; see D8-29.2.
Drinking fountain; search D7-304.
Drinking fountain; see D7-304.
Fireplace brush; see D4-3+.
Fireplace poker; see D8-14.
Fireplace shovel; see D8-7+.
Fireplace tongs; see D8-51+.
Firestarter or igniter; see D7-416+.
Gutter; see D25-35 or 73+.
Haircurling iron; see D28-38.
Hair dryers; see D28-12+.
Hand or face drier; see D28-54.1.
Heat gun; see D8-29.1.
Heating devices for laboratory, industrial, or scientific use; see D15-144+.
Hydrotherapy unit; see D24-38.
Incense burner; see D11-131.1.
Incinerator; see D34-1.1.
Miscellaneous bathroom accessories, e.g., holders, racks, shelves, etc.; see D6-524+.
Mobile agricultural sprayer; see D15-13.
Mobile material distributor or sprayer; see D15-13.
Nozzles for soap dispensers and soda fountains; see D6-542+ and D15-119+ respectively.
Plant waterer or root feeder; see D8-1.
Pressure regulating instrument; see D10-49.
Pump dispenser for disposable package; see D9-300, 448.
Pump or fuel supply unit or casing for oil burner; search D15-7+.
Safety grab bar attachment for toilet, tub, etc.; see D8-316+.
Seat lifter handle; see D8-307.
Sink cabinet or "vanity" per se; see D6-432+.
Skylight; see D25-52.
Solar energy convertors; see D13-102.
Soldering irons per se; see D8.
Solid fuel; see D13-100.
Solid fuel burning cooking ranges combined with incidental heating features; see D7.
Tap or valve for beverage dispenser; see D7-398.
Tire valve; see D12-153.
Water pressure cleaner or sweeper; see D32-15+.

200 FLUID HANDLING OR TREATMENT EQUIPMENT (1)
201 .Fountain
202 .Storage tank
203 ..Underground type (e.g., septic tank, etc.)
204 ..Substantially spherical
205 ..Cylindrical
206 ..Element or attachment (2)
207 .Treatment
208 ..Sanitary fixture type (e.g., deodorant holder, chemical dispenser, etc.)
209 ..Filter or strainer (3)
210 ...Immersion type (e.g., aquarium filter, etc.)
211 .Lubricating can
212 .Watering can (4)
213 .Dispersal (i.e., sprayer, fogger, nozzle, aerator, etc.) (5)
214 ..Sprinkler for lawn, agricultural irrigation or fire extinguishing (6)
215 ...Simulative
216 ...Oscillating
217 ...With surface penetration means
218 ...Recessed type
219 ...Tracking type (i.e., sprinkler follows hose, etc.)
220 ...Plural rotating arms
221 ...Base
222 ..Simulative
223 ..Hand held or controlled type
224 ...Direct piston or plunger actuation (i.e., without trigger or lever)
225 ...With material container (7)
226 ...Trigger, lever or button actuation
227 ....Cover or guard
228 ..Combined
229 ..Provision for adjustment of spray pattern or flow
230 ..Ball and socket joint for adjustment
231 .Hand or foot operated pump or well curb
232 ..Reciprocating lever actuated
233 .Valve or body therefor
234 ..Hydrant
235 ..Pressure regulating or relieving
236 ..Ballcock or float type
237 ..Check
238 ..Faucet fixture (8)
239 ...Combined (e.g., with dishwashing brush, support therefor, etc.)
240 ....With soap dish or with provision therefor
241 ...Plural flow controls or provision therefor
242 ....Distinct (i.e., when mounted, controls and spout are separated)
243 ....Pivoting spout
244 ..Gate or butterfly type
245 ..Manual or visible mechanical control or with provision therefor (e.g., handle, lever, etc.)
246 ...With gauge or dial (9)
247 ..Symmetrical on two or more axes
248 ..Symmetrical on one axis
249 ..Element or attachment
250 ...Handle
251 ....Simulative
252 ....Offset from axis
253 ....Rim connected to hub by spokes
254 ....With escutcheon
255 ...Spout (10)
256 ....Simulative
257 ....With control for diverter or drain
258 ...Float or check
259 .Fitting (11)
260 ..Cap, plug, vent or screen (12)
261 ...Drain guard or strainer (13)
262 ..Coupling or joint
263 ...Elbow or with flow direction change
264 ....Adjustable (e.g., swivel, etc.)
265 ...Clamp or bolt engagement
266 ..Pipe, tubing or hose
267 ..Gutter
268 ..Trap
269 ..Gasket or packing
270 SANITARY FIXTURE OR HOUSING THEREFOR
271 .Combined (14)
272 ..Sink and stove or refrigerator
273 ..Sink, water closet and bathing unit
274 ..Sink and water closet or urinal
275 ..Bathtub and shower enclosure
276 .Sitz bath (15)
277 .Bathtub (16)

SANITARY FIXTURE OR HOUSING THEREFOR
.Bathtub (16)
278 ..Infant type
279 ..With door or provision for external storage
280 ..Symmetrical or two axes (17)
281 ..Bilaterally symmetrical (17)
282 ...Footed
283 .Shower or shower receptor (18)
284 .Sink
285 ..Simulative, or with radiating striations
286 ..With cabinet or with provision for storage
287 ..With drainboard (i.e., adjacent recessed inclined surface)
288 ..Corner type
289 ..Shampoo type (e.g., with depression on rim for neck, etc.)
290 ..Plural
291 ..With integral spout or hooded overflow
292 ..Unitary singular support column
293 ..Symmetrical on two axes in plan (17)
294 ..Bilaterally symmetrical in plan
295 .Water closet, bidet or bowl therefor
296 ..Infant training type
297 ...Simulative
298 ..Simulative
299 ..Self-contained (i.e., chemical or portable type)
300 ..Wall mounted
301 ..With water tank (19)
302 .Urinal (20)
303 .Element or attachment (21)
304 ..Bathtub or shower
305 ...Surround, door or panel
306 ....Front
307 ...Splash shield
308 ..Sink (22)
309 ..Water closet or urinal
310 ...Deflector (23)
311 ...Seat, or bowl cover (24)
312 ....Simulative
313 ...Tank or tank cover
314 HEATING OR COOLING
315 .Sauna or steam bath type
316 .Liquid immersion type, e.g., aquarium, swimming pool, etc. (25)
317 .Mobile space heater, e.g., wheeled blower type, etc.
318 .Domestic water heater or boiler
319 ..Boiler
320 ..With door or access panel
321 ..With discharge valve or tap
322 ..Element
323 ...Heat exchange unit, e.g., coil, etc.
324 .Vehicle heating or cooling
325 ..Air conditioning
326 ..Defroster
327 ..With adjustable louver or door
328 .Combined heating and cooling or with diverse element
329 .Furnace
330 .Radiator, e.g., spaced enclosed heat exchangers
331 ..Plant life or scroll type ornamentation
332 .Portable
333 ..Air conditioner
334 ..Animal or agricultural heater
335 ..Heating element protected by grille, grid,etc.
336 ...Circular or cylindrical housing
337 ...Pedestal or pivoting head mount
338 ...Liquid fuel type, e.g., kerosene, etc.
339 ...Gas fired type
340 ...Quartz type
341 ..Element
342 .Stabile space heater
343 ..Fireplace or solid fuel heating stove (26)
344 ...Fireplace insert
345 ...Masonry or tile-like surround, e.g., architectural type fireplace
346 ...Ornate cast iron type (27)
347 ....Element therefor, e.g., stove plate, etc.
348 ...Circular horizontal cross section
349 ...Simulative
350 ...Symmetrical front
351 .Air conditioner (28)
352 ..Circular housing
353 ..Window mount type
354 ..Element, e.g., front panel, etc.
355 .Air Treatment
356 ..Humidifier
357 ...Wall or furnace mount
358 ...Element
359 ..Dehumidifier
360 ..Vaporizer
361 ...Wall mount
362 ...Circular container
363 ...Element
364 ..Air cleaner
365 ...Filter
366 ..Deodorizer or ozonizer
367 ...Simulative
368 ...With distinct hanger or suction cup
369 ...Activated by moveable cover or by piercing
370 ..Fan or ventilator
371 ...Exhaust type
372 ....Range or oven
373 ....Roof or chimney
374 .....Chimney
375 .....Wind rotated, e.g., turbine type, etc.
376 .....Circular hood
377 ...Blade unit rotates on vertical axis
378 ...Floor type on vertically elongated stand
379 ...With exposed blade
380 ...Plural impeller units, e.g., side by side, etc.
381 ...Wire protective grille
382 ....Circular grille
383 ...Blower
384 ...Bellows
385 ..Wall or ceiling mount (25)
386 .Element or attachment, not elsewhere specified
387 ..Flow director (29)
388 ...Register or diffuser
389 ....Baseboard type
390 ....Circular
391 ....Arched or curved top
392 ....Adjustable louver or damper
393 ...Vent, ductwork, or element thereof
394 ....Stovepipe
395 ..Radiator cover or cabinet
396 ..Stoker
397 ..Grate
398 ...Fireplace type (30)
399 ....Hollow tube circulator with blower unit
400 ....Perforated or expanded metal
401 ....Enclosed four sides
402 ...Stove or furnace type
403 ..Fireplace element not elsewhere specified
404 ...Mantle or frame for opening
405 ...Lining or enclosure for opening (31)
406 ....Screen

HEATING OR COOLING
.Element or attachment, not elsewhere specified
..Fireplace element not elsewhere specified
407 ...Andiron or fire dog
408 ....Simulative
409 ...Artificial log burner element
410 ..Coal scuttle or wood holder
411 ..Fan element
412 ...Fan guard
413 ...Fan or ventilator blade
414 ....With circumferential band
415 ..Burner or heater coil
416 ...Oil type
417 ...Electric
418 ...Element
419 ....Radiant
420 ..Ash pan or sifter
421 ..Valve or control
422 ..Fire brick
499 MISCELLANEOUS

SEARCH NOTES FOR CLASS D23
(1) For sanitary fixture such as tub, shower, sink, etc., see subclasses 270+.
(2) For cap or plug, see subclass 260.
(3) For filter disclosed as part of a faucet, see subclasses 238+
For aerator, see abclass 213.
(4) For battery water dispenser, see subclass 200.
(5) For aerator disclosed as part of a faucet, see subclasses 238+.
For shower head disclosed with shower unit structure, see subclass 283.
(6) For hose nozzle or hand held sprayer, see subclasses 223+.
For time or control, see subclass 245.
(7) Container must be shown in full or in broken lines.
(8) If disclosed with sink, classified in subclasses 284+.
(9) For gauge or dial, per se, see Class D10.
(10) Includes spout with provision for diverter control.
If provision is made for flow control handle, patent is classified as faucet in subclasses 238+.
(11) Includes overflow fitting.
(12) Includes sink stopper.
(13) Includes urinal screen.
(14) For faucet combined with sink and/or cabinet, see subclasses 284+.
(15) For bidet, see subclass 295.
(16) For front panel or sub-assembly, see subclasses 304+.
(17) Exclusive of drain or overflow opening.
(18) For bathtub surround, see subclass 305.
For shower head, per se, or with associated plumbing only (such as valve), see subclass 213.
(19) For tank, per se, see subclass 313.
(20) For water closet attachment type, see subclass 310.
(21) Includes leg or support
For overflow fitting, see subclass 261
For drain stopper or screen see, respectively, subclasses 260 and 261.
(22) For drain stopper or screen see, respectively, subclasses 260 and 261.
(23) For drain screen, see subclass 261.
(24) For infant training seat, see subclass 296.
For seat lifter handle, see D3-307.
(25) Includes element.
(26) Stoves with upper and lower doors, e.g., for fuel supply and ash removal are included in this subclass.
(27) Highly surface ornamented parlor or franklin type stoves of the late 19th and early 20th century variety.
Ornamentation usually formed as part of the casting.
(28) Includes cooling tower.
(29) See air conditioner element, subclass 354 for additional flow director panels.
(30) Search subclass 405 for grate combined with interior lining.
(31) Decorative panel for season use.

CLASS D24 MEDICAL AND LABORATORY EQUIPMENT

Excluded from this class are:
Crutch or walking support; see D3-7+.
Dentist's chair; see D6-334+.
Film processing equipment; see D16-246+.
Goggles per se; see D16-102+.
Mask for surgery, anesthetic application, oxygen, etc.; see D29-7+.
Surgical lighting; see D26-24+.
Toothpick or dental floss holder; see D28-64.

1.1 FIXED APPARATUS OR EQUIPMENT (1)
2 .X-ray or fluoroscopic (2)
3 .Examining or surgical table
4 .Dental unit
5 ..Element
6 .Embalming type
7 .Element
8 INSTRUMENT OR TOOL FOR MEDICAL OR LABORATORY USE
9 .Sterilizer or incubator
10 .Dental type
11 ..Double ended use
12 ..Drilling or grinding (3)
13 ..Mirror
14 ..Syringe
15 ..Jet cleaning unit
16 ..Element
17 .Diagnostic or body function monitor (2) (4)
18 ..Speculum (5)
19 ..Tongue depressor
20 ..Stethoscope (2)
21 ..Blood analysis or filtration (6)
22 .Centrifuge (2)
23 .Hand-held or manipulated (7)
24 ..Hypodermic syringe or implanter
25 ...Element
26 ..Surgical
27 ...Clamp, holder, or forceps
28 ...Cutting type (8)
29 .Element or accessory
30 ..Handle
31 ..Tray or rack
32 ...Test tube type
33 PROSTHETIC ARTICLE
34 MATERIAL FOR DRESSING WOUNDS, NURSING OR MEDICAL CARE (2)
35 .Hearing aid or voice reflector
36 .Kinesitherapy (9)
37 ..Steam or sauna bath
38 ..Hydrotherapy unit (10)
39 ..Solar type
40 ..Powered
41 ...Hand-held or manipulated
42 ...Foot application
43 ..Hot water bottle or ice bag (11)
44 ...Simulative
45 .Pediatric nipple or oral stimulator (12)
46 ..Nipple type
47 .Nursing bottle or accessory
48 ..Holder
49 .Bandage or protector
50 .Diaper
51 .Fluid or waste collector or ejector (2)
52 ..Intravenous type
53 ..Valve or connector for tubing
54 ..Catheter or urine collector (2)
55 ..Pippette
56 ..Container, e.g., surgical basin, etc.
57 ...Bedpan
58 ...Bag type (13)
59 ..Body cavity insertion type
60 ...Syringe
61 ....Element
62 ..Inhaler or atomizer
63 .Medicinal applicator
64 .Orthopedic appliance or body support
66 .Eyecup
67 .Earplug
68 .Therapeutic lamp
99 MISCELLANEOUS

SEARCH NOTES FOR CLASS D24

(1) Mobile equipment included.
For portable or table top type, search subclass 8.
(2) Includes element.
(3) For surgical grinder, see subclass 26.
(4) Includes test kit or device, e.g., for urinalysis, skin, etc.
(5) For specula blank, search subclass 29.
(6) Includes blood pressure measurement.
(7) Excludes massager or other therapeutic devices; see subclass 36.
(8) Includes piercing or scraping implement.
(9) Includes massage equipment.
(10) Includes tub or foot bath.
(11) For syringe bag, see subclass 60.
(12) Includes pacifier or teething device.
Includes gum conditioner.
(13) For hot water bottle, search subclass 43.

CLASS D25 BUILDING UNITS AND CONSTRUCTION ELEMENTS

Excluded from this class are:
Burial vault; see D99-1+.
Cloth sheet material; see D5.
Concrete wall tie; see D8-384.
Diving board; see D21-236.
Elevator; see D34-33.
Escalator; see D34-28.
Fence or railing hardware, e.g., mounting bracket, clip, etc.; see D8.
Fireplace mantel; see D23-404.
Form for flower arrangement; see D11-143+.
Gate hinge; see D8-323+.
Gate latch; see D8-331+.
Grille for audio or video equipment; see D14-219.
Lamp combined with post; see D26-68.
Lens or glass for lighting fixture; see D26-120+.
Linoleum rug; see D6-582+.
Linoleum sheet; see D5.
Mobile home or trailer; see D12-101+.
Mobile stair for boarding aircraft, etc.; D34-30.
Pipe, tubing or hose; see D23-266.
Plant stake; see D8-1.
Portable swimmimg pool; see D21-252.
Roof gutter; see D23-267.
Service station canopy combined with pump; see D15-9.1+.
Step plate for vehicle; see D12-203.
Structure which encloses telephone only; see D6-421 and 553+.
Tent; see D21-253.
Tiles assembled into countertop; see D23-308.
Tiles assembled into floor and wall covering; D6-582+.
Track for sliding door; see D8-377.
Vehicle support; see D34-31.
Wallpaper; see D5.

1 STRUCTURE (1)
2 .Swimming pool
3 .Combined with diverse article, e.g., airport complex, etc.
4 .Clustered identical units
5 .Four or more levels
6 ..Tower
7 .Simulative
8 ..Animate
9 ...Humanoid
10 ..Edible article or container therefor
11 ..Vehicle
12 ..Arena or stadium
13 .Geodesic dome (2)
14 .Grain storage
15 .Greenhouse
16 .Single occupant type, i.e., telephone booth, privy, ticket booth, etc. (3)
17 .Having intersecting angular or curved roofs (4)
18 .Having curved or vaulted roof
19 ..Dome
20 ..Sinuous
21 ..Concave, catenary or flexibly suspended
22 .Having angular roof
23 ..Trapezoidal or triangular surface
24 ...Gambrel type
25 ...Mansard type
26 ...Pyramidal
27 ...Zig-zag type, i.e., sawtooth
28 ...Inverted
29 ...A-frame type
30 ...Isolated slanted surface
31 .Circular or oval in plan
32 .Polygonal in plan
33 .Fully enclosed
34 ..Having carport or garage
35 PREFABRICATED UNIT (5)
36 .Underground service vault (6)
37 .Elevator cab interior (7)
38 .Railing unit or fence (8)
39 ..Combined, e.g., fence and gate
40 ..Simulative
41 ..Swimming pool grab rail
42 ..Post or board extending above rail, e.g., picket type
43 ..Post and rail type
44 ...Rail centered on post
45 ..Wire type (9)
46 ...Barbed
47 .Closure (10)
48 ..For passage, e.g., door, etc.
49 ...Flexible or folding
50 ...Gate
51 ....Turnstile
52 ..Window
53 ..Screen or guard (11)
54 ...Window well cover
55 .Finishing unit (12)
56 ..Roof or canopy (13)
57 ...Awning type
58 ..Partition, wall or ceiling (25)
59 ...Exterior, e.g., storefront
60 ..Surround for door window, panel, etc. (14)
61 .Framing unit, e.g., building frame (15)
62 STAIR, LADDER, SCAFFOLD OR SIMILAR SUPPORT (16)
63 .Stepped (17)
64 ..Ladder
65 ...Step stool type
66 .Scaffold
67 .Sawhorse
68 .Element or attachment (18)
69 ..Stair tread, step or ladder rung
100 TRELLIS OR TREILLAGE UNIT
101 .Simulative
102 ARCHITECTURAL STOCK MATERIAL (19)
103 .Transparent or translucent
104 ..Simulative
105 ...Plant life
106 ..Three or more pattern repeats about axis on side (20)
107 ...Hollow type
108 ..Hollow type
109 ..Symmetrical on two axes on one side (21)
110 ..Unidirectional repeat pattern
111 ..Random arrangement of pattern elements within repeat unit (22)
112 .Splash block
113 .Construction block or brick type (23)
114 ..Perforated or openwork (24)
115 ...Symmetrical
116 ....Arcuate detail
117 .....Cicular or oval
118 ....Rectangular or square detail
119 .Extruded shape (34)
120 ..Three or more repeats, or uniform configuration, about axis
121 ..Bilaterally symmetrical
122 ...With hollow core
123 ...Parallel repeating ribs or grooves
124 ..With hollow core
125 ..Parallel repeating ribs or grooves
126 .Post or beam
127 ..With cross arm or cantilevered support
128 ..Three or more repats, or uniform configuration, about axis
129 ...Vertically fluted
130 ..Simulative

ARCHITECTURAL STOCK MATERIAL (19)
.Post or beam
131 ..With notch or tang for receiving attachment (e.g., fencing wire, etc.)
132 ..Openwork type or with opening
133 ..Element or attachment
134 ...Cross arm or cantilevered support
135 ...Capital or cap
136 .Elongated molding type (e.g., crown, dentil, etc.) (26)
137 ..Simulative
138 .Panel, tile or applique or floor, wall, roof, etc. (27)
139 ..Roofing, or wall shingle
140 ...Tile type
141 ...Stamped, crimped or bent material having uniform thickness
142 ...Perforated or openwork
143 ...Three or more repeats, or uniform configuration, about axis
144 ...Symmetrical on two axes
145 ..Relief carving or medallion type (28)
146 ...Humanoid simulation
147 ...Three or more repeats, or uniform configuration, about axis (e.g., medallion, etc.)
148 ...Symmetrical on two axes
149 ..Simulative, or natural material pattern
150 ...Wood grain
151 ...Brick or stone (29)
152 ..Perforated or openwork (30)
153 ...Symmetrica pattern or pattern unit
154 ....Arcuate
155 .....Circular or oval
156 ....Rectangular or square
157 ..Symmetrical pattern or pattern unit (31)
158 ...Three or more repeats, or uniform configuration, about axis
159 ....Consisting entirely of material having uniform thickness
160 ...On two axes
161 ....Consisting entirely of aterial having uniform thickness
162 ...Consisting entirely of material having uniform thickness
163 ..Textured (e.g., pitted, cratered, drilled, etc)
164 .Elongated (32)
199 MISCELLANEOUS (33)

SEARCH NOTES FOR CLASS D25.

(1) Includes bridge.
For roof with no structure other than support, see subclasses 56+.
(2) For arcuate dome, see subclass 19.
(3) Includes structures which enclose a person.
(4) Search subclasses 56+ for roof, per se.
(5) Includes only plural components which are preassembled as a unit, e.g., steeple, cupola, etc.
For individual components, see subclasses 102+.
For trellis, stairs, louver unit, see, respectively, subclasses 100 , 62+ and 152+.
For girder, beam, etc., see subclasses 126+.
(6) Includes element.
(7) For elevator, see D34-33.
(8) For handrail or post, see respectively, subclasses 119 and 126+.
(9) Includes element.
(10) Includes shutter; includes a combination with surround.
For surround per se, see subclass 60.
(11) Includes only screens or guards which are designed solely for window or door.
For grille adaptable to other architectural uses, see subclasses 152+.
For perforated sheet material, see D5-1+.
(12) Includes rigid drapery cornice.
(13) If structure has wall, see subclasses 1+.
(14) Includes arch structure.
(15) Includes cantilever support.
(16) Includes ramp; includes bleachers.
(17) For mobile stairs, see D34-30.
(18) For component which is adaptable to other article, such as handrail, post, etc., see subclasses 102+.
(19) Classified by full line disclosure
(20) Planar surface not considered.
(21) Planar surface not considered.
(22) If repeat protocol is apparent from the disclosure, patent is classified under earlier subclasses. If, however, the disclosured pattern element does not indicate how it can repeat, patent is classified here.
(23) For edging, see subclass 164.
(24) Opening must extend through the article.
(25) Includes stage set.
(26) If molding has extruded shape, see subclasses 119+.
For corner or end piece, see subclass 102.
(27) For generic elongated stock material having indefinite length, see subclass 164.
(28) For embossed panelwork or for grill, see subclasses 138, 152 or 157.
(29) For brick per se, see subclasses 1
(30) Opening must extend through the article. Otherwise patent is classified in subclasses which follow.
(31) Exclusive of random acoustic texture within symmetrical pattern unit, or of tongue or groove edge detail.
(32) Includes railing, edging, etc. However, if railing, etc. has an extruded shape, patent is classified in subclasses 119+.
For corner or end piece, see subclass 102.
(33) Includes construction form.
Includes roof pipe flashing.
(34) To be classified in this subclass, article must have uninterrupted extruded shape. If openings, protrusions, rivets, vertical striations, etc., are disclosed with an elongated article, patent is classified in subclasses 126, 136 or 164.
For articles with specific end configuration such as fence picket, see subclasses 126+.

CLASS D26 LIGHTING (1)

Excluded from this class are:
Body treatment lamp; see D24-68.
Candle lighter; see D99-99.
Candle snuffer; see D29-2.
Catadioptric reflector; see D10-111+.
Combination shaving or vanity mirror and lamp; see D28-67.
Consumable flash lamp; see D16-42.
Electrical component, e.g., switch, socket, etc.; see D13.
Emergency-type lamp, e.g., strobe, rotating beacon, etc.; see D10.
Flash unit for camera; see D16-239.
Insect-attracting lamp and trap combination; see D22-119+.
Ignition timing light; see D10-111+.
Lamp exclusively for signal purposes; see D10-111+.
Lamppost; see D25-126+.
Light bulb socket; see D13-134.
Light switch; see D13-158+.
Planter combined with light source; see D11-143+.
Reflective signal; see D10-111+.
Sign; see D20-10+.
Stationary signalling lamp; see D10-114.
Traffic signal; see D10-115.
Wall plate for electric switch; see D8-350+.

1 LIGHT SOURCE (2)
2 .Electric light bulb
3 ..Fluorescent
4 ..Simulative
5 ...Candle or flame
6 .Candle
7 ..Simulative
8 .Torch
9 CANDLE HOLDER (3)
10 .Combined with diverse article
11 .With light modifier
12 .With means to penetrate support surface
13 .Plural, i.e., candelabrum, etc.
14 ..Simulative
15 ..Asymmetrical
16 .Simulative
17 ..Animate
18 ...Humanoid
19 ..Plant life
20 .With distinct drip collector, e.g., flared cup, etc.
21 .Asymmetrical in elevation
22 .Circular or oval base
23 .Element or attachment (4)
24 LIGHT FIXTURE (5)
25 .Plural, connected series, i.e., light string
26 .Receptacle mount, i.e., "night light" or screw-in type
27 .Fiber optic
28 .Vehicle lamp or casing (6)
29 ..Articulated type
30 ..Pointer or arrow (7)
31 ..With letter, numeral, or sign, or with provision therefor (8)
32 ..Simulative
33 ...Hand
34 ..Combined with diverse article
35 ..Plural lamp or lens elements, or with provision therefor
36 ..Circular or oval lens, or with provision therefor (9)
37 .Hand-held, body-attached or lantern type (10)
38 ..Combined with diverse article
39 ..Body-attached
40 ..360 deg. lateral light dispersal
41 ...With distinct handle or carrying strap
42 ..Fluorescent tube type
43 ..Flexible light shaft
44 ..Pivotal head capability
45 ..With pistol grip
46 ..Beam supplementary to body axis, i.e., light rays directed in line with longitudinal axis
47 ...Simulative
48 ...With distinct handle
49 ...Substantially circular body cross section (11)
50 ..With distinct handle
51 .Combined with diverse article
52 ..With communications equipment, e.g., television, radio, etc. (12)
53 ..With smokers' article
54 ..With clock
55 ..With plant holder
56 ..With mirror, picture frame, or holder therefor
57 ..Simulative
58 ..With table or cabinet
59 ..With fan or ventilator
60 .Resiliently attached, or clamped
61 .Articulated or adjustable (13)
62 ..Gooseneck type
63 ..Pivotal movement
64 ...And rectilinear
65 ...Plural pivots, i.e., more than one axis
66 ..Rectilinear movement
67 .Provision for post attachment or ground insertion (14)
68 ..Combined with standard (15)
69 ...Plural distinct light units
70 ..Plural radially arranged light units or provision therefor
71 ..Axially offset singular light unit (16)
72 .Attachable to overhead or vertical surface, i.e., ceiling or wall (17)
73 ..Simulative shape (18)
74 ..Recessed within mounting surface
75 ..Fluorescent tube type
76 ...Longitudinal axis parallel to support surface
77 ....Open grid-type modifier
78 ....Exposed bulb
79 ....Circular tube
80 ..Plural distinct light sources, or provision therefor (19)
81 ...Attached to overhead surface
82 ....Horizontally disposed light socket
83 ....Light source directly attached to ceiling mount
84 ....Depending light source
85 ..With light modifier
86 ...Repeating plural modifiers
87 ...Cantilevered or standoff-type support arm
88 ...Attached to overhead surface
89 ....Light source enclosed between overhead and modifier
90 ....Plural suspension elements from ceiling mount to modifier
91 ....Polygonal modifier
92 ..Cantilevered or standoff-type support arm
93 .Freestanding fixture or standard (20)
94 ..Simulative
95 ...Building or tower
96 ...Candle or candle holder
97 ...Vehicle or component thereof
98 ...Animate
99 ....Humanoid

LIGHT FIXTURE (5)
.Freestanding fixture or standard (20)
..Simulative
...Animate
....Humanoid
100 .....Plural
101 ...Plant life
102 ..Plural distinct light sources or modifiers, or provision therefor
103 ..Coil effect
104 ..Fully enclosed light source
105 ..Light modifier open at top only
106 ..Bilaterally symmetrical only
107 ...Axially offset singular support for light source or modifier
108 ...With light modifier
109 ....Horizontally elongated
110 ..Repeating or uniform design about axis (21)
111 ...Tripartite
112 ...With light modifier
113 .Element or attachment
114 ..Liquid or gaseous fuel burner or component thereof
115 ...Mantle type
116 ...Wick type
117 ..Fuel reservoir
118 ..Light source cover or modifier, i.e., reflector, screen, or shade (22)
119 ...Protective cover or cage, e.g., trouble light, etc.
120 ...Lens or panel type (23)
121 ....Openwork
122 ....With refractive rib or groove, e.g., prismatic, etc.
123 .....Circular or oval (24)
124 ....Circular or oval (25)
125 ...Simulative
126 ....Humanoid
127 ....Plant life
128 ...Chimney, globe or bowl, i.e., circumscribing or surrounding light source and being open at top and/or bottom (26)
129 ....With external framework or filigree
130 ....Repeating or uniform pattern about point or axis (27)
131 .....Curvilinear wall in elevation (28)
132 ......Sinuous (29)
133 ....With radiating ribs or grooves
134 ......With radiating ribs or grooves
135 .....Frusto-conical or pyramidal
136 ......With radiating ribs or grooves
137 .....Cylindrical
138 ..Support or trim (30)
139 ...Bezel, visor, or cover for vehicle lamp
140 ...Provision for security or adjustment
141 ...Frame, bridge, or harp (31)
142 ...Foot, mount, or surround (32)
143 ....Plural distinct light source supporting spokes or surrounds
144 .....Three or more, e.g., spider, etc.
145 ....Cantilever or standoff type (33)
146 .....Simulative
147 ....Simulative
148 .....Repeating or uniform pattern about point or axis (34)
149 ....Repeating or uniform pattern about point or axis (35)
150 .....Tripartite
151 .....Quadripartite
152 ...Band, grille, or trim panel
153 ...Spindle or column (36)
154 ...Loop, pendant, or finial
155 ...Brace or trim arm (37)
156 ...Simulative

SEARCH NOTES FOR CLASS D26

(1) Classified by full-line disclosure.
(2) Light source is defined as an element or material which provides illumination.
(3) For electric candelabrum, see subclasses 24+.
(4) For candle cup, bobeche, or similar support or surround, see subclasses 142+.
(5) If claimed disclosure can function as a light fixture as it is shown by the addition of (a) a light source, (b) a receptacle, (c) a modifier, or (d) a power source, it is classified as a light fixture in this and in indented subclasses.
If some element other than those specified must be added to complete the fixture, it is an element and must be classified in subclasses 113+.
(6) For lens or bezel see, respectively, subclasses 120+ and 139.
(7) For hand simulation, see subclass 33.
(8) Includes combination with license plate holder.
For vehicle signal other than lamp, see D10-109.
(9) For lens per se, see subclasses 120+.
(10) Includes base.
For lantern bracket, see subclass 138.
For bulb cage, see subclass 119.
For static signalling lamp, see D10-114.
For table lamp, see subclasses 93+.
(11) Includes patents showing striations, ridges, or depressions arranged around a substantially circular form.
(12) Includes combination with phonograph.
(13) Includes track-type light.
(14) Attachment may be at top or bottom of fixture.
(15) For lamp combined with distinct sign, see subclass 51.
For lamp post, per se, see D25-126+.
For arm, per se, see subclass 143 or 145
(16) For cantilevered arm, per se, see subclass 143 or 145.
(17) Includes article which can functon as a light fixture as it is shown, with only the insertion of the light source. If any other element is necessary to form the fixture, it is classified as an element in subclasses 113+.
If there is doubt as to whether the disclosure article is a light fixture under this or indented subclasses, it is classified as an element under subclasses 113+.
(18) Substantially entire article must be simulative; simulative detal not considered.
(19) For backing plate, collar, surround, or spider, see subclasses

142+.
For chandelier body, see subclasses 142+.

(20) Includes combination of base and light source or modifier support.
For subcombination, e.g., spindle, foot, modifier, etc., see subclasses 113+.

(21) In determining symmetry in this and in indented subclasses, the harp, control knob, chains, etc., are not considered.
Pattern must repeat three or more times.

(22) For fixture backing plate, see subclasses 142+.
For shade holder, see subclasses 138+.
For segment panel of a shade, globe, etc., see subclass 152.

(23) For vehicle lamp bezel, visor, or cover, see subclass 139.
For catadioptric reflector, see D10-111+.

(24) External shape only.

(25) External shape only.

(26) For vehicle lamp bezel, visor, or cover, see subclass 139.

(27) Pattern must repeat three or more times.

(28) Exclusive of mount flange.

(29) Exclusive of mount flange.

(30) If the claimed disclosure includes a combination of a wall or ceiling mount support, etc., with a modifier or light surce support e.g., socket, article is classified light fixture in subclasses 24+.
For combined lamp post and modifier support, see D25-126+.

(31) Includes mantle support.

(32) Includes base member, per se.
Includes chandelier body.
Includes collar-type surround.
For modifier trim band, see subclass 152.

(33) For brace or trim arm, see subclass 155.
For mount plate or support having security or adjustment provision, see subclass 140.
For plural type, see subclasses 143+.

(34) Pattern must repeat three or more times.

(35) Pattern must repeat three or more times.

(36) For post, see D25-126+.

(37) For support arm, see subclasses 145+.

CLASS D27 TOBACCO AND SMOKERS' SUPPLIES

Excluded from this class are:
Belt-attached holder for cigarette package or lighter; see D3-106.
Cigarette package dispenser; see D6-517.
Coin operated cigarette package dispenser; see D20-1+.
Commercial tobacco growing or processing machinery; see D15-10+.
Fire starter for grill, fireplace, etc; see D7-416.
Liquid gas cartridge for a cigarette lighter; see D9-300.
Matchbox or matchbook; see D9-304 and 414.
Packaging wrapper for cigar or cigarette; see D9-305+.
Silent butler; see D32-74.
Slotted holder for multiple matchbooks; see D6-449+.
Smokers' article combined with lamp; see D26-53.
Spittoon or cuspidor; see D34-2.
Tobacco storage or curing building; see D25.

100 TOBACCO PRODUCT
101 .Cigar, cigarette or wrapper therefor (1)
102 ASH RECEIVER, SNUFFER OR SUPPORT THEREFOR (2)
103 .Attachable to tobacco product or to holder therefor
104 .Wall, post or clamp mount
105 ..With closure or cover
106 .Simulative
107 ..Floor type
108 ..Combined (3)
109 ...With coaster or glass holder
110 ...With enclosed case, humidor or individual server
111 ...With holder for match or cigarette pack
112 ...With lighter
113 ..Animate
114 ...Humanoid
115 ...Aquatic
116 ...Quadruped
117 ..Architectural or geographic
118 ..Beverage or food container
119 ..Plant life
120 ..Sports or game
121 ..Vehicle or component thereof
122 .Floor type
123 ..Singular unitary vertical support
124 ...Three or more repeats, or uniform configuration, about axis
125 .Combined (4)
126 ..With coaster or glass holder
127 ..With enclosed case, humidor or individual server
128 ..With pipe support
129 ..With holder for match or cigarette pack
130 ..With lighter
131 ..With signal or sign
132 ..With game or scorer
133 .Three or more repeats, or uniform configuration, about axis
134 .Symmetrical on two axes
135 .Bilaterally symmetrical
136 .Snuffer type
137 .Element or attachment
138 ..Cigar or cigarette retainer or support
139 IGNITER (5)
140 .Match striker (6)
141 .Lighter or body therefor
142 ..Combined
143 ...With additional smokers' accessory
144 ....Holder, case or pouch
145 ...With timepiece
146 ...With writing implement
147 ..Separable lighter wand
148 ..Simulative
149 ...Animate (7)
150 ...Architectural or geographic
151 ...Plant life
152 ..Three or more repeats, or uniform configuration, about axis
153 ..Symmetrical on two axes
154 ..Thumb lever, push button or plate for ignition or for gas release
155 ...Pivotal connection between actuation lever and burner cover
156 ...With visible friction wheel (8)
157 ...With burner cover
158 ..Friction wheel or roller ignition
159 ...With burner cover
160 ..Bilaterally symmetrical
161 ..Element or attachment
162 REMOTE, OR WATER TREATED, SMOKING ARTICLE (I.E., WATER PIPE, HOOKAH, ETC.)
163 PIPE
164 .With heat exchange feature (e.g., repeating ribs or grooves, etc.)
165 .Simulative
166 .Plural stem or provision therefor
167 .Element or attachment (9)
168 ..Bowl cover
169 ..Stem or mouthpiece
170 MOUTHPIECE FOR CIGAR OR CIGARETTE (10)
171 .Simulative
172 HOLDER OR RECEPTACLE FOR SMOKERS' ARTICLE OR TOBACCO PRODUCT
173 .For match or matchbook (11)
174 ..Combined
175 ...With tobacco product holder
176 ..Attachable to vertical surface
177 ...Simulative
178 ..Simulative
179 ...Animate (12)
180 .For pipe
181 ..Combined
182 ..Simulative
183 .For cigar, cigarette or tobacco
184 ..Provision for measured or sequential discharge
185 ..Pouch type (i.e., with flaccid walls, etc.)
186 ..Case or receptacle
187 ...Combined (13)
188 ...Simulative
189 ...Fully enclosed
190 ....Three or more repeats, or uniform configuration, about axis
191 ....Symmetrical on two axes
192 ..Simulative
193 .Element or attachment
194 ELEMENT, ATTACHMENT OR ACCESSORY NOT ELSEWHERE SPECIFIED
195 .Cutter or perforator for tobacco product
196 .Pipe tamper or cleaner

SEARCH NOTES FOR CLASS D27

(1) For packaging wrapper, see D9-305+ or 414+.
(2) Classified by full disclosure.
(3) Includes combinations which are internal to this class, e.g., lighter, holder, humidor, etc.

Excludes snuffer or rest

(4) Includes combinations which are internal to this class, e.g., lighter, holder, humidor, etc.

Excludes snuffer or rest.

Includes combination with gambling chip holder.

(5) Includes match.
(6) For striker combined with match or matchbook holder, see subclasses 173+.
(7) Includes humanoid.
(8) For direct friction wheel actuation, i.e., without lever, button, etc., see subclass 158.
(9) For tamper or cleaner, see subclass 196.
(10) For combination with ash receiver, see subclass 103.
(11) For matchbox or matchbox, see D9-304 or 414.
(12) Includes humanoid.
(13) For combination with match or matchbook holder, see subclass 175.

CLASS D28 PHARMACEUTICAL, COSMETIC PRODUCTS, AND TOILET ARTICLES

DECEMBER 1990

Excluded from this class are:
Bootjack; see D2-642.
Bristle brush alone or in combination; see D4.
Buttonhook; see D2-643.
Carrying container for wigs; see D3-30.1+.
Disposable type face powder container; see D9.
General purpose sponge; see D32-40+.
Jewel case; see D3-30.1+.
Pillbox; see D3-30.1+.
Shoe brush; see D4.
Shoeshine box or case; see D3-30.5.
Shoeshine stand combined with seat; see D6-335+.
Shoe tree; see D2-314.1.
Toilet or travel case; see D3-39.

1 PHARMACEUTICAL PRODUCT
2 .Tablet
3 ..Simulative
4 COSMETIC PRODUCT (1)
5 .Perfume or sachet (2)
6 ..Simulative
7 .Applicator or template (3)
8 ..Powder
8.1 .Soap
8.2 ..Simulative
9 TOILET ARTICLES AND BEAUTY PARLOR EQUIPMENT
10 .Hair device
11 ..Permanent wave machine (4)
12 ..Dryer or steamer
13 ...Hand held type
14 ...Multiple unit
15 ...Combined
16 ...Foldable or collapsible
17 ...Stand- or pedestal-mounted
18 ...Element or attachment
19 ....Hood
20 ..Washing or dyeing (5)
21 ..Comb
22 ...Simulative
23 ...Foldable
24 ...Powered (6)
25 ...Combined
26 ....With curler
27 ....With clip
28 ...Plural spaced tooth rows
29 ....Oppositely directed rows
30 ...With handle
31 ....Rake or pick type
32 ...Hair-retaining type
33 ....Arcuate or circular in plan
34 ...Element
35 ..Curler or crimper
36 ...Eyelash (7)
37 ...Roller
38 ...Holder or heater
39 ..Hair fastener, e.g., bobby pin, clip, etc.
40 ...Spring clip type
41 ...Ornament or band
42 ....Barrette or clasp
43 .....Element
44 ..Cutting or shaving
45 ...Razor (4)
46 ....Safety type
47 .....Element
48 ......Handle
49 ....Powered
50 .....Rotary cutter
51 .....Bilaterally symmetrical
52 ...Clipper or trimmer
53 ....Powered
54 ....Element
54.1 .Electric hand or face drier
55 .Tweezer
56 .Manicure or pedicure
57 ..Tool or implement
58 ...Powered
59 ...File, abrasive holder or polisher
60 ...Clipper
61 ..Kit, rack, stand or tray
62 ..Element
63 .Bath brush or mitt (12)
64 .Toothpick or dental floss holder (8)
64.1 .Hand-held or body attached mirror
64.2 ..Body attached
64.3 ..Combined (13)
64.4 ..With elongated handle
64.5 ...With animate simulation
64.6 ...Circular head
64.7 ..Element
73 .Holder
74 ..Comb (10)
75 ..Hairpin (11)
76 ..Cosmetic product (4)
77 ...Combined
78 ...Compact type
79 ....Simulative
80 .....Animate
81 ....Jeweled
82 ....Circular or oval in plan
83 ....Rectangular in plan
84 ....Element
85 ...Lipstick
86 ....Plural
87 ....Simulative
88 ....Circular in cross section
89 .....Central annular ring
90 .....Applied decorative pattern
91 ...Powder puff box type (4)
91.1 .Atomizer
92 WIG OR HAIRPIECE
93 .Accessory
99 MISCELLANEOUS

SEARCH NOTES FOR CLASS D28

(1) Excludes lipstick or powder product in combination with a container; see subclasses 76+.
(2) Excludes perfume container in combination with lipstick; see subclasses 85+.
(3) Includes hair-dye applicator. For bristled brush type, see D4.
(4) Includes element.
(5) For dye applicator, see subclass 7.
(6) For hair dryer with comb attachment, see subclass 12.
(7) Includes applicator for false eyelash.
(8) For cocktail-type pick, see D7-683.
(10) Includes heater type.
(11) Includes hairpin opener.
(12) Includes handled sponge.
(13) Includes self-illuminating.

CLASS D29 DEVICES AND EQUIPMENT AGAINST FIRE HAZARDS, FOR ACCIDENT PREVENTION AND FOR RESCUE

Excluded from this class are:
Alarm; see D10-106.
Baptismal font; See D99-25.
Firefighting vehicle; see D12-13.
Fireplace equipment; see D23-398+ and 403+.
Goggles; see D16-102+.
Hand coverings in the form of wearing apparel; see D2-610+.
Hose and nozzle; see D23-213+ and 266.
Hydrant; see D23-234.
Ladder; see D25-62+.
Life preserver or flotation aid; see D21-237+.
Rain hat or shower cap; see D2-510.
Safety grab bar attachment for toilet, tub, etc.; see D6-316+.
Safety devices for animals; see D30-33+.
Security or signal instrument or casing; see D10-104+.
Seat belt; see D2-627+.

1 DEVICES AND EQUIPMENT AGAINST FIRE HAZARDS
2 .Extinguisher (1)
3 ..Grenade type
4 ..Mobile
5 ..Element
6 DEVICES AND EQUIPMENT FOR ACCIDENT PREVENTION NOT ELSEWHERE SPECIFIED
7 .Mask or respirator
8 ..Mask
9 ...With lens
10 BODY RESTRAINT OR PROTECTIVE COVERING NOT ELSEWHERE SPECIFIED
11 .Harness or reflective body covering (2)
12 .Cranial (3)
13 ..Combined with diverse article
14 ..With sun shade visor
15 ..With ear or face protection feature (3)
16 ..Element or attachment, e.g., face, nose, chin shield attachment, etc. (4)
17 .Face, mouth or ear (5)
18 ..Sun shade or vision inhibitor (6)
19 ..Ear (7)
20 .Hand or arm covering (8)
21 ..Baseball
22 ..Glove, i.e., individual sheaths provided for fingers
99 MISCELLANEOUS

SEARCH NOTE FOR CLASS D29
(1) Includes element or accessory.
(2) Belt excluded; see D2-627.
(3) For mask per se, see subclass 8; for face protection article, see subclass 17+.
(4) For goggles pe se, see D16-102+; for distinct face protective article, see subclass 17+.
(5) For welder's mask, see subclass 7+; for an attachment to a helmet, see subclass 16.
(6) For line-of-sight eye protection, i.e., goggles, eyeglasses, etc., see D16-102+.
(7) Includes earmuff.
(8) Includes finger stall; Includes grip improvement type; Classified by full line disclosure.

CLASS D30 ANIMAL HUSBANDRY

Excluded from this class are:
Animal drawn vehicle; see D12-17+.
Animal foodstuffs; see D1.
Animal grooming brush; see D4.
Aquarium heaters; see D23.
Brooder stove or heater; see D23.
Buildings; see D25.
Medicines and veterinarian equiment; see D24.
Table-type cage stands; see D6.
Milking machine; see D7-368
Terrarium; see D11-145.
Veterinary supplies; see D24.

101	AQUARIUM, FISH BOWL, OR STAND THEREFOR
102	.Simulative
103	..Animate
104	.Combined with disparate article
105	.Plural compartment
106	.Element or attachment
107	..Cover or reflector
108	SHELTER, PEN, OR OTHER ENCLOSURE (1)
109	.With carrying handle (e.g., animal transport type, etc.)
110	.Bird house
111	..Simulative
112	.Simulative
113	.Farrowing Type (2)
114	.Wire, bar, or perforate type (3)
115	..Circular in plan
116	..Wire type
117	.Substantially circular in plan
118	.Bed, seat, or accessory therefor
119	.Element or attachment (4)
120	..Floor panel or base
121	FEEDER OR WATERER
122	.Timed or automatic
123	.Birdbath
124	.Bird feeder
125	..Simulative
126	..A-Roof Type
127	..Vertically arranged stations
128	..Circular feed holder
129	.Bowl or dish type
130	..Compartmented
131	.Trough or multiple station type
132	.Waterer (3)
133	.Holder for feeder or waterer
134	SADDLERY (5)
135	.Saddle or frame therefor
136	.Bridle (3)
137	.Yoke, horse collar, or hame (3)
138	.Hardware
139	..Buckle or trace support
140	..Ring, loop, or eye
141	..Rein guard or holder
142	..Stirrup
143	..Saddle or harness stand or holder
144	BODY ATTACHED PROTECTOR OR RESTRAINER
145	.Clothing (6)
146	.Foot protector
147	..Horseshoe type
148	...Open ended
149	..Horeshoe pad
150	..Horseshoe calk
151	.Animal restrainer
152	..Collar, harness, or muzzle (3)
153	..Leash (3)
154	..Hitching post or tether
155	IDENTIFICATION TAG OR BRANDING DEVICE
156	WHIP OR PROD
157	.Spur
158	GROOMING OR ANIMAL CLEANING IMPLEMENT (7)
159	.Comb (3)
160	EXERCISER OR TOY
161	WASTE COLLECTOR (e.g., litter box, etc.)
162	.Scoop or rake type
199	MISCELLANEOUS

SEARCH NOTES FOR CLASS D30

(1) Includes bed or nest.
(2) See subclass 151 for other animal restrainers.
(3) Includes element.
(4) See subclass 121 for feeder or waterer.
(5) See subclasses 151+ for dog or cat harness, collar, etc.
(6) Includes animal blanket.
(7) Includes scratching implement or post for cats.

CLASS D32 WASHING, CLEANING, OR DRYING MACHINE

Excluded from this class are:
Clothesline reel; see D8-358+.
Floor mat; see D6-582+.
Paint can rim, lid, pouring attachment or similar package element; see D9-435+.
Stair tread; see D25-69.

1 WASHING, CLEANING, OR DRYING MACHINE
2 .Dishwasher type
3 ..Element or attachment
4 .Vehicle type
5 .Combined, e.g., washer and dryer, etc.
6 .Laundry or dry cleaning type
7 ..With external wringer
8 ..Dryer or extractor
9 ..Ironing or finishing type
10 ..Dry cleaning type
11 ..Plural tubs
12 ..With distinct external leg or frame
13 ..Substantially cylindrical casing in plan
14 .Sewer or pipe cleaner (1)
14.1 .Shoe shine type
15 .Surface treatment, e.g., floor, street, etc. (2)
16 ..Occupant support, self-propelled, or hand truck type
17 ..Hand held steamer, cleaner, or vacuum
18 ...Vacuum type
19 ..With rotary brush
20 ...Multiple
21 ..Vacuum
22 ...Upright type
23 ...Circular canister in plan
24 ...Handle parallel to longitudinal axis
25 .Element or attachment
26 ..Agitator
27 ..Wringer
28 ..Control or panel therefor
29 ..Tub or drum
30 ..Refuse collection receptacle or liquid dispenser, e.g., vacuum bag, etc.
31 ..For vacuum cleaner
32 ...Nozzle or attachment therefor
33 ....Combined with brush or having diverse function
34 ....Handle
35 LAUNDERING, CLEANING, OR DRYING TOOLS OR IMPLEMENTS (3)
36 .Laundry or clothespin bag
37 .Laundry basket, hamper, or diaper pail
38 .Carpet sweeper (4)
39 ..Element or attachment
40 .Scraper, duster, mop, or sponge
41 ..Squeegee
42 ..Combined
43 ..Simulative
44 ..With pivotal jaw squeezing action
45 ..With fluid collector or dispenser, e.g., reservoir, etc.
46 ..Scraper
47 ...Shoe, ski, or cleat type
48 ...With removable cutting blade
49 ...With elongated handle
50 ..Floor mop or broom
51 ..With elongated handle
52 ..With handle or holder
53 .Bucket, pail, or attachment therefor
53.1 ..Paint bucket or roller tray
54 ..Attachment
55 .Sink tray, dish rack, mat, or drainboard
56 ..Drainboard
57 ..Mat
58 .Drying rack or form (5)
59 ..Form
60 .Clothesline support or attachment
61 ..Clothespin
62 ...Simulative
63 ...Plural or invertible
64 ...Separate biasing spring
65 ...Wire type
66 .Ironing board
67 .Washboard
68 .Flatiron (6)
69 ..Handle attached at one end only
70 ..Electric type
71 ..Element or attachment
72 ...Handle
73 ...Holder or stand
74 .Dust pan or crumb collector
75 .Laundry sprinkler

SEARCH NOTES FOR CLASS D32

(1) Includes element.
(2) Includes casing per se.
(3) See subclasses 1+ above for power driven.
(4) Includes casing per se.
(5) Includes element.
(6) Includes holder or attachment.

CLASS D34 MATERIAL OR ARTICLE HANDLING EQUIPMENT (1)

Excluded from this class are:

Chain or link for conveyor; see D8-499.

Earth working machinery; see D15-10+.

Food or beverage service equipment combined with cart; see D7-300+ or 323

Food serving tray; see D7-543+ or 550+.

Laundry basket or hamper; see D32-37.

Merchandising or storage furniture, e.g., mobile bookcase, etc; see D6-396+.

Mobile bar or work surface; see D6-396+.

Passenger-carrying golf cart; see D12-16

Silent butler; see D32-74.

Trash collecting vehicle; see D12-93+.

1	REFUSE OR TRASH EQUIPMENT (2)
1.1	.Incinerator
2	.Cuspidor or slop jar
3	.Motor vehicle transportable or pickup type
4	.Simulative
5	.With distinct stand, support, or wheels (3)
6	..Stationary stand or support per se (4)
7	.With closure
8	..Swinging
9	...Pedal operated
10	...Element or attachment
11	..Closure or protective hood
12	HAND CART OR FRAME THEREFOR
13	.Simulative
14	.Combined with diverse article (e.g., cafeteria tray dispenser, etc.)
15	.Golf cart (5)
16	.Wheelbarrow type
17	.Stable (6)
18	..Three-wheeled
19	..Fully enclosed storage compartment
20	...With additional distinct load support
21	..Plural load support
22	...Inclined
23	..Dolly
24	.Two-wheeled
25	..Fully enclosed compartment
26	..Cantilevered support plate or bar
27	.Element or attachment
28	CONVEYING, LIFTING, OR TRANSFERRING ARTICLE (7)
29	.Belt or roller conveyor
30	.Mobile stair
31	.Jack or jackstand
32	.Ramp
33	.Crane or hoist (8)
34	..Mobile
35	..Element or attachment
36	...Boom
37	...Cab or body
38	.Pallet
39	.Barrel, cask or drum
40	.Open top bin, tray, or basket not elsewhere specified
41	..Simulative
42	..Wire or woven type
43	..With distinct handle or grip
44	...Centrally disposed
45	...Plural compartment or division
46	..Plural compartment or division

SEARCH NOTES FOR CLASS D34

(1) Classified by full-line disclosure.

(2) Excludes trash collecting vehicle; see D12.

(3) Includes stand per se.

(4) For cart-type carrier or frame therefor, see subclasses 12+.

(5) For golf car, see D12-16.

(6) For cart combined with refuse receptacle, see subclass 5.

(7) Element included in this and in indented subclasses.

(8) Includes winch, windlass, or capstan.

CLASS D99 MISCELLANEOUS

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Excluded from this class are:
Body attached key keeper; see D3-103.
Desk-type letter holder; see D19-75+, 95+.
Chalice; see D7-524+.
Holiday season decoration; see D11-117+.
Incense burner; see D11-131.1.
Money purse; see D3-42+,56+.
Religious medal; see D11-95+.
Religious sculpture; see D11-131+.
Table shrine, e.g., creche, etc.; see D11-122+.

1 CASKET (1)
2 .Combined with support
3 .Simulative
4 .With transparent panel
5 .Urn
6 .Converging sides in plan
7 .With handle
8 .Element or attachment
9 ..Pedestal or bier
10 ..Lining
11 ..Handle
12 ..Cover (2)
13 ..Corner plate
14 ..Coffin screw or element thereof
15 ..Casket name or handle plate
16 ...Handle mounting type, e.g., escutcheon, etc.
17 TOMBSTONE, GRAVE MARKER, OR MONUMENT
18 .With ground insertion provision
19 .Combined with urn or flower holder
20 .Grave surround or cover (3)
21 .Simulative
22 ..Animate representation
23 ..Cross
24 .Vertically elongated
25 RELIGIOUS ARTICLE NOT ELSEWHERE SPECIFIED (4)
26 .Rosary
27 .Crucifix
28 VAULT, SAFE, OR DEPOSITORY (5)
29 .Mailbox (6)
30 ..Simulative
31 ..Combined
32 ...With post (7)
33 ..Attachable to vertical surface
34 .Coin holder or bank (8)
35 ..Bank
36 ...Combined
37 ...Simulative
38 ....Animate
39 .....Humanoid
40 .....Quadruped
41 ....Building
42 ....Vehicle
43 .Element or attachment
99 MISCELLANEOUS

SEARCH NOTES FOR CLASS D99
(1) Elements included in subclasses 8+ below.
(2) For grave or burial vault cover, see subclass 20.
(3) For casket cover, see subclass 12.
(4) Includes appliance used in the celebration of a religious ceremony i.e., baptismal font, tabernacle, monstrance, etc.
(5) Includes coin holder or tray. Includes bank type deposit or withdrawal apparatus. For bank depository, see subclass 43.
(6) Includes newspaper receptacle. Includes element.
(7) Includes post per se.
(8) Includes element.

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